ENVIRONMENTAL DISCOURSE IN TURKISH ARCHITECTURE

A Thesis Submitted to
the Graduate School of Engineering and Sciences of
İzmir Institute of Technology
in Partial Fulfillment of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

in Architecture

by Sinem DEMİREL-ÖZER

August 2014
İzmir

We approve the thesis of **Sinem DEMİREL-ÖZER**

Examining Committee Members:

Assoc. Prof. Dr. Şebnem YÜCEL
Department of Architecture, Gediz University

Assoc. Prof. Dr. Adile ARSLAN AVAR
Department of City and Regional Planning, İzmir Institute of Technology

Assist. Prof. Dr. Fehmi DOĞAN
Department of Architecture, İzmir Institute of Technology

Prof. Dr. Gülsüm BAYDAR
Department of Architecture, Yaşar University

Assist. Prof. Dr. Ela ÇİL
Department of Architecture, İzmir Institute of Technology

04 August 2014

Assoc. Prof. Dr. Şebnem YÜCEL
Supervisor, Department of Architecture,
Gediz University

Assoc. Prof. Dr. Şeniz ÇIKIŞ
Head of the Department of
Architecture

Prof. Dr. R. Tuğrul SENGER
Dean of the Graduate School of
Engineering and Sciences

ABSTRACT

ENVIRONMENTAL DISCOURSE IN TURKISH ARCHITECTURE

Since the 1960s environmental discourse has entered into architectural theory and practice in effective ways, inducing disciplinary transitions in all three categories: artefacts, knowledge and practices. This dissertation emphasizes the discursive character of this "environmental turn" in architecture and aims to make explicit its significance for Turkey. To that end, the dissertation reviews four Turkish architectural periodicals covering a time span of 49 years from 1963 to 2012. The data is then used for tracing of the formation of the discourse on environmental architecture in Turkey by illustrating how certain concepts and themes arose at specific time periods and their transformations in time. In that context, the dissertation emphasizes three concepts – environment, sustainability and energy-efficiency- and in revisiting these in a sequential and overlapping fashion a general outlook of the conditions in which the discourse on environmental architecture have emerged is sketched.

Such an analysis reveals the transformation of environmental considerations from that of radical reflections to legitimate concerns in Turkey. Yet, it also displays that this "legitimation" is based on an unquestioned "givenness" of the objects and statements of the discourse. This, in return, creates a speculative basis of legitimacy removing it from its social and economic contexts. This study has taken on this challenge by emphasizing the system of formulating the problems –namely the "problematic" of the discourse as its main concern. In that context, it first of all presents the analysis of the mechanisms in which environment has risen as an important problem of architecture in Turkey, and secondly, reveals the relations of this process to the nature of solutions proposed. In the end, by emphasizing the taken-for-granted assumptions and generalizations inherent in the discourse on environmental architecture in Turkey, the dissertation aims to open up for new avenues in which new formulization of the problems could emerge.

ÖZET

TÜRK MİMARLIĞI'NDA ÇEVRE SÖYLEMİ

Çevre söylemi, 1960'lı yıllardan günümüze mimari kuram ve uygulamasına etkili yollardan girmiş ve disiplinin üç önemli alanında –ürün, uygulama ve bilgi- değişiklikleri tetiklemiştir. Çalışma, bu çevresel eğilimin söylemsel yönünü vurgulamakta ve Türk mimarlığı için önemini ortaya koymaktadır. Bu amaçla, dört adet Türk mimarlık dergisi taranarak, 1963 yılından 2012'ye kadar 49 yıllık bir zaman aralığına ışık tutulmaktadır. Metinsel dokümanlar, konu ile ilgili kavram ve temaların ortaya çıktığı belirli zaman dilimlerini tesbit etmek ve zaman içinde geçirdikleri dönüşümleri izlemek için kullanılmaktadır. Bu bağlamda, tez üç kavramı –çevre, sürdürülebilirlik ve enerji-etkinlik- öne çıkarmakta ve bunları sıralı ve örtüşen bir biçimde ele alarak çevre söyleminin Türk mimarlık dergilerinde ortaya çıktığı koşulları tanımlamaktadır.

Böyle bir analiz, Türk mimarlık söyleminde çevresel kaygıların radikal yansımalardan meşru kaygılara dönüşümüne tanıklık etmektedir. Ancak, bu meşrulaştırmanın aynı zamanda söylemin nesnelerinin ve ifadelerinin sorgusuz bir "verilmişlik"ine dayandığını da görüntülemektedir. Meşrulaştırmanın bu spekülatif temeli, söylemi sosyal ve ekonomik bağlamlarından uzaklaştırmaktadır. Tez bu sorunu söylemin "problematik" ini –yani problemlerin oluşumunun arkasındaki sistemleri- öne çıkararak ele almaktadır. Bu bağlamda, öncelikle çevrenin Türk mimarlık söyleminin önemli problemlerinden birine dönüşmesini, ve ikinci olarak, bu sürecin önerilen çözümlerin niteliği ile olan ikişkisini incelemektedir. Sonuç olarak, tez söylemin varsayımlar ve genellemeler üzerine dayalı yapısını vurgulayarak problemlerin yeni bir bakış açısı ile alınabileceği bir alan açılmasını amaçlamaktadır.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

1.1 Old Conflicts and New Possibilities

Why another study on the so-called "environmental", or in more common terms, "sustainable" architecture? As a young architect, who just graduated from a university fulfilling the conditions of becoming an architect in 2000, I was rather excited about the new avenues that I thought environmental tendencies in architecture were to open. This may seem as a rather late encounter for a western colleague, but Turkey was more like a follower in terms of the constitution of the field of environmental architecture.[1] Although certain ideas, conceptualizations and positions about environmental architecture were already forming, this discursive complexity was not reflected in the daily expressions of the profession. For example, it was not until the year 2000, that "sustainable" as a term begun to gain general acceptance in architectural discussions. Within the following seven years, though, in other words until the time I started conducting this thesis, a much quicker transformation has taken place and environmental issues became mainstream also in Turkish architecture.

But this time, I had mixed feelings towards these changes. On the one hand, I still believed that this disciplinary shift had the potential to re-question certain aspects of architecture and present new possibilities for future. On the other hand, though, it seemed to have become just another excuse for the production of artefacts for contemporary practice. In its incorporation in architecture, the discursive formation that we call the "environmental" seemed as a hard combination of both possibilities and failures.

---

[1] For example, already back in 1993 International Union of Architects announced the theme of that year's congress as being "Architecture at the Crossroads: Designing for a Sustainable Future". And, Susan Maxman as the president of International Union of Architects claimed to "commit ourselves, as members of the world's architectural and building-design professions, individually and through our professional organizations, to: Place environmental and social sustainability at the core of our practices and professional responsibilities." This declaration implied institutional changes in the discipline, from education to establishing regulations. But, at the time it had only found partial reflection in Turkish architecture.

I found this irony interesting and significant. Yet, to my surprise, most of the studies conducted in the field of environmental architecture were towards more pragmatic issues and immediate solutions. The ones that tried to present a more critical stance, on the other hand, echoed a similar distinction with me between real engagement and superficial interventions. The general tendency within these studies was to understand environmental architecture as lying along a linear continuum; for example between the poles of light and dark green, of technological and ecological sustainability (Van der Ryn & Cowan, 1996), of technological and organic approaches, or, of "eco-efficiency and eco-effectiveness" (Braungart, 1998, p. 88). Buildings or design approaches were assumed to rest somewhere on that scale, over which they were also contrasted with each other. As a result, the distinction often resulted in the favoring of one over the other, and in most cases it was the technological approach going hand in hand with the economic imperative that was found on the wrong side of the equation.

Yet, as I got more involved with the subject, the question regarding the field of environmental architecture seemed to me, to be much more complex than what can be answered simply with binary distinctions. Such a representation of the field based on separations was reducing a large number of parameters into two compartments. Moreover, as observed by Necdet Teymur in his book *Environmental Discourse: A Critical Analysis of 'Environmentalism' in Architecture, Planning, Design, Ecology, Social Sciences and the Media* back in 1982: "The implicit opposition in conceptual couples often produce either/ or situations that lead to some epistemological mistakes which are only too apparent in M-E discourse, (for example, the boundary between M and E, even assuming for a moment that there are two such elements, is an imaginary boundary and not a real one)" (Teymur, 1982, p. 63).[2] Thus, understanding environmental architecture with binary couples was more than just a coincidence or an inadequacy of the studies in comprehending complexity of the field. It was a reflection of a certain way of approaching "reality", and my interest was shifting to the effects of such divisions. In other words, the knowledge about the socially relevant problematic of this field was uncertain. And, in the lack of theoretical criticism, the questions and the terms shaping the field of environmental architecture were taken as givens without a thorough analysis.

[2] In the book, *Environmental Discourse: A Critical Analysis of 'Environmentalism' in Architecture, Planning, Design, Ecology*, M stands for Man, and E for Environment.

In the course of the writing of this thesis, issues related with the environment had begun to take ever more space also in the theory of architecture. Within this massive literature, there is also a call for a more deliberative and argumentative terrain to discuss environmental problems and their relations with the built environment. Yet, these are still very recent and remain less in number. In that context, there is not enough material in understanding the more discursive and systemic character of the field of environmental architecture. This is especially so in Turkey in which the "global" aspects of the environmental discourse and the "local" realities wherein they materialize pose very challenging questions. Thus, I have come to believe that a critical study about the field of environmental architecture in Turkey was timely and much needed.

1.2 A Discursive Formation

Since the 1960s environmental discourse has entered into architectural theory and practice in effective ways, circulating its own statements and setting up its own discursive relations. Concepts such as "environment", "ecology" and "sustainability" has become common place, discursively reshaping the field "through architectural practice, architectural theory, architectural design, architectural education, architectural legislations, architectural discussions, texts, books, articles, speech, etc."(Basa, 2009, p. 273). It is quite visible that environmental issues are becoming ever more popular and dominant also in Turkish architecture, inducing disciplinary transitions in all three categories: artefacts, knowledge and practices. This thesis, first of all, is written in an attempt to understand this transition. But, with understand I do not imply a descriptive study of all the sustainable forms or practices that shaped environmental architecture in Turkey, or a 'history of ideas' "characterized by taking texts, authors, movements of ideas, schools of thought, as empirical givens to be listed, interrelated with and opposed to each other" (Teymur, 1982, p. 119). Instead, I want to rethink the formation of such an environmental problematic in architecture, which I believe –and I will try to make explicit in the following chapters- is a discursive formation.[3] Rather than directly

[3] Such a formulation of the problem implies a criticism, yet only to better understand the possibilities for thinking about the future of the profession. Environmental turn in architecture has reworked some of the basic themes of the profession, from the more pragmatic issues of thermal performance to moralistic concerns or the relation between the built and natural environment. This, however, mostly suggested a deliberate break with the old ways of doing and thinking about architecture. In other words, the field of environmental architecture often braced itself against the other, whether it is the modern or contemporary architecture. But, does it have the potential to redirect the profession in an entirely new way? Or, will it

looking at the new tools and solutions suggested by the environmental architecture, I aim to consider a set of themes that were reworked as a consequence of this turn. In other words, I will trace the interplay of these two axes- that of the "environmental" and "architectural", and analyze what the former has to suggest to the latter.

In that context, I have chosen to limit my analysis with the printed media, and left buildings for others to consider. In other words, I have narrowed my focus from the field of environmental architecture to that of discourses that took part in its constitution. Undertaking such a task, I first started by distinguishing between two domains of inquiry: environmental discourse and the field of architecture. As will be seen in the proceeding chapters, the rise of "environment" as a central problematic in architecture was very much influenced by the rise of environmental awareness and governance since the 1960s that was paralleled by an increasing discourse on environmental crisis. In the end, it was the concerns such as "the alarm over industrial pollution, the disgust with consumer cultures wastefulness, and the overall recognition that human technology has accelerated entropy to the point of endangering the survival of the species"(Ingersoll, 1996, p. 120) that created a sense of responsibility on the part of the architects and inspired a direction for environmental architecture.

In other words, it is clear to me that environmental discourse has certain effects on the field of architecture. But, what they are and how they are achieved is more contentious and raises a number of important issues that needs clarification. It was quite visible that environmental issues were becoming ever more popular and dominant also in Turkish architecture, inducing certain changes in architectural theory, education, legislations, discussions, texts, books and articles (Basa, 2009). But, I was interested more with the identification of the non-visible system of relations behind this seemingly visible façade. And, I needed an understanding which would allow me to identify and observe the formation and practice of these relations. According to Foucault, "whenever, between objects, types of statement, concepts, or thematic choices, one can define a regularity (an order, correlations, positions and functionings, transformations), we will say…that we are dealing with a discursive formation" (Foucault, 1972, p. 38). Thus, I came to a realization that the object of this thesis will be discourses, specifically environmental discourse in architecture.

---

only continue to reproduce the premises that it has set to depart in its own statements? In short, this thesis aims to present a discussion about the potential of environmental architecture. Yet, it does it in a rather reversed fashion.

In my search for understanding the ways in which the field of architecture has integrated environmental issues and ecological tendencies into its domain in Turkey, I have turned to architectural periodicals. For the thesis, this analysis operates on two levels. First, I use the material included in the periodicals to investigate the transformations that has taken place in Turkey, in relation with environmental architecture. Starting from 1963, in which the first issue of *Mimarlık* was published, to December 2012, this study covers a time span of 49 years. Within these years, the way environmental issues have been interpreted and discussed in architectural periodicals have changed significantly, reflecting a similar shift in focus in the field of architecture both in Turkey and the world in general. Some of these changes are easier to follow, such as the growing interest in environmental issues in the field of architecture. In the periodicals this is revealed in the frequency of the articles published on the subject, which has increased significantly since the late 1990s. But, others require a closer look such as the changes in the terms preferred (green, ecological or sustainable), or their varying implications, or the transformation of subjects labelled under environmental architecture.

Second, I use architectural periodicals as a means to evaluate the architectural present. Architectural periodicals reflect the dynamics of the period in which they function, as well as influencing the current discussions taking place in the profession.[4] In that respect, this analysis will also operate on two levels. First, it tries to understand the current historical stage of Turkish environmental architecture. To that end, I detect the themes and narratives that dominate the Turkish architectural agenda with respect to the subject of this thesis. Yet, this is a process in action, and architectural periodicals take part in the solidification of the terminology and concepts shaping the field of environmental architecture. Thus, my second intention is to identify certain aspects of this dynamic relation and understand the mechanisms through which environmental discourse is put to use in architectural periodicals.

Architectural periodicals offer an appropriate framework for such an analysis. First of all, they are dynamic and activate the cultural discussions taking place in Turkish architectural agenda in several levels. Secondly, they enable me to create a

[4] The complexity of the reciprocal relationship between architectural periodicals and the architectural agenda can be examined through two important publications of the 1960s: *Casabella* as the publication of "School of Venice", and *Oppositions* representing the attitudes of the Institute for Architecture and Urban Studies in New York. (Özdel, 1999, p. 24)

certain frame for the study. There is very little work done on the evolution of environmental practices and discourses in Turkey. Thus, it was very hard for me to follow a certain path, but all I had was bits and pieces of material that were loosely related. Architectural periodicals provided a meaningful set in which I can scan the written material and search for clues in understanding the discourses of environmental architecture.

Yet, rather than considering all the architectural periodicals published in Turkey, I have chosen to focus on four specific examples. The first is *Mimarlık*, and there are several reasons to this selection. First of all, it has been a long lasting publication, and if we take it to be a continuation of the previous *Mimarlık* that began publishing in 1944, it can be considered to be the oldest Turkish architectural periodical. Secondly, it is in direct relation with the Chamber of Architects (Mimarlar Odası) and thus has an institutional character. Representing the commercial/professional domain I have chosen *Yapı* as the second periodical to review in this thesis. According to Uğur Tanyeli, *Yapı* with its organic relationship with the Yapı- Endüstri Merkezi (Building-Industry Centre) can be considered as the first real representative of the commercial/professional periodicals in Turkey (Tanyeli, 2001, p. 35). Secondly, Yapı begun its publication in 1973 and has had a long life span which allows me to do a historiographical review. *Arredamento/ Mimarlık,* is the third architectural periodical that I have chosen. It started its publication with the name of *Arredamento/Dekorasyon* and as an example of a "popular" periodical. But, later it transformed into a commercial-professional periodical. It also has a wide range of readers. Another periodical which represents the institutional domain is *Mimar-Ist* which started its publication in 2001 after environmental issues had already became familiar. I chose this periodical for two reasons. First, based on the frequency of their appropriation of environmental architecture into their publication. Second, İstanbul holds a unique place in green practices in Turkey, especially when the involvement of foreign architectural offices and economic parties are considered.

1.3 Research Strategies

As have been put forward, Turkish architectural periodicals form the basis of the data that has been evaluated in this thesis. In that context, I have started, first of all, by going over each issue of the chosen periodicals and collecting the related texts which were mostly in the form of articles. This was followed with the identification and organization of the data according to several parameters, such as chronology, differences between the periodicals and to thematic correspondence. The longest part has been the evaluation of this data both in the form of description and analysis. Taken together, these have been, then, interpreted into a "narrative" about the course that the discourse on "environmental architecture" in Turkey has taken. This has formed the earlier phases of the analysis.

Linda Groat and David Wang, in their book *Architectural Research Methods* define this route from gathering, evaluation to narration as "interpretive research": "investigations into social-physical phenomena within complex contexts, with a view toward explaining those phenomena in narrative form and in a holistic fashion."(Groat & Wang, 2002, p. 136) Important here is the "lens" through which to view this phenomena. In that respect, I am more inclined to "social constructionist approaches". In the book *Discourse Analysis: as Theory and Method*, the basic premises of these approaches were summarized as follows: A critical approach to taken-for-granted knowledge; historical and cultural specificity; link between knowledge and social processes; link between knowledge and social action. (Philips & Jorgensen, 2002, pp. 5-6)

Incorporating such a lens in the interpretation of the written material, in return, have led to me to "discourse analysis" as one of the widely accepted methods in these approaches. Michel Foucault, as probably the mostly referred author in this respect, defined discourse as:

> We shall call discourse a group of statements in so far as they belong to the same discursive formation […Discourse] is made up of a limited number of statements for which a group of conditions of existence can be defined. Discourse in this sense is not ideal, timeless form […] it is, from beginning to end, historical – a fragment of history […] posing its own limits, its divisions, its transformations, the specific modes of its temporality. (Foucault, 1972, p. 117)

There are two important implications of this passage for this thesis. First of all, I have directed my analysis from that of categorizing differences (such as the case with identifying different types of environmental practices) to that of repetition and regularity in the field and asked: What is it that unites this vast variety of discourses that can be found in the field of "environmental architecture"? And, how can they coexist under a single discourse, that which we could differentiate as "environmental architecture"? In other words, what is the "unity" of discourse on environmental architecture in Turkish architectural periodicals? However, as Necdet Teymur puts forward, a unity of discourse does not necessarily suggest a uniform discursive field. On the contrary, it is a field of variety and conflicting elements. It is rather the unity of its problematic, in this case the "environmental problematic", that defines its unity- "which is a complex structured whole"(Teymur, 1982). This unity, then, is the starting point of analysis. As İnci Basa observes in her doctoral thesis *Linguistic Discourse in Architecture*, starting from any of the elements of a discursive formation "(-say, all the stated ideas in the field) would have a misleading potential since "discourses" are not simply composed of coherent elements. They may perfectly be composed of discontent units, dilemmas, contradictions, incoherence or specious coherences" (Basa, 2000).

Secondly, since discourse was not understood as something universal and ahistorical, I have tried to understand how in each historical period concepts were constructed according to certain rules. To that end, I have started by distinguishing the facts or the descriptions given in the discourse as universal truths from the rules which made those statements, explanations and descriptions possible. Thus, this thesis does not aim to give precise definitions on terms such as "nature", "environment" or "sustainability". Nor, does it aim to outline what an "appropriate" sustainable practice should be like. Instead, it searches for historical traces in the texts to map the particular differences in their interpretations in specific contexts and what they might suggest to the field of architecture. In other words, I intend, first, to understand why certain terms and definitions work at a particular place and time (and not at others), and second, to understand the mechanisms which made them possible. So, for example rather than accepting or criticizing "sustainability", this study aims to understand how it emerged as a key principle in architecture in the first place, and how its meaning subsequently evolved as it was applied in Turkish architectural periodicals. Also of importance is the "rules of exclusion" that are applied to discourses "to avert its powers and dangers" in

coping with "chance events" (Foucault, 1971).[5] The rest of the thesis, then, is an attempt to bring out the unity of the discourse on environmental architecture through an analysis on the formation rules of "objects, enunciative modalities, concepts and strategies".

One of the challenges in such an attempt is to balance the emphasis given either to the linguistic properties of the texts or the social-historical background in which they come to being. It is possible to identify two main approaches in the way one can analyze discourses. The first approach is mainly interested in linguistic properties and performance, whereas the other uses discourse analysis for dealing with historical, sociological, psychological or other problems. I am more inclined to the second position. As such, I consider the subject matter of this thesis more as a discursively constructed and maintained social reality than a linguistic phenomenon. My interest is not on pure language use, but more on the clues that discourses suggest in understanding certain kinds of practices, namely the field of environmental architecture. In other words, I have directed my emphasis to more general patterns, as "over-arching themes operating at specific situations"(Alvesson & Karreman, 2000, p. 1134). In that context, although the text forms the focal point for data collection, the analysis in this thesis does not depend on individual texts but a collection of texts. Thus, the main emphasis will be on how texts are made meaningful in their relations with other texts and the ways they draw on different discourses.

Moving beyond a textually oriented approach, however, presented a second challenge: how to theorize the relation between the discursive and social practices. Ruth Wodak identifies four levels of context as:

> 1. the immediate, language or text internal co-text;
> 2. the intertextual and interdiscursive relationship between utterances, texts, genres and discourses;
> 3. the extralinguistic social/sociological variables and institutional frames of a specific "context of situation" (middle-range theories);
> 4. the broader sociopolitical and historical contexts, which the discursive practices are embedded in and related to (grand theories). (Wodak, 2002)

The first one is descriptive and, since the linguistic properties are not taken into consideration in this thesis, it is left unanalyzed. In return, it is mostly the following three levels that this analysis is built upon. For the level of "intertextuality" and "interdiscursivity" I have considered how the periodicals drew on earlier texts and statements of environmental discourse. Such an analysis, however, is closely related

[5] Quoted in (Basa, 2000, p. 39).

with, and becomes useful for this thesis only when considered in relation to the identification of the system of statements as the bearers of their "rules of formation". In other words, the analysis aims to go beyond that of the "intertextual chain", and considers "the ways of using concepts, of referring to objects, of thinking in strategies and of formatting the ways of speaking" (Diaz-Bone et al., 2007). And, this forms the third level of middle-range theories in Wodak's interpretation. Discursive practices, however, are also interwoven with non-discursive practices. The fourth level, then, is related with the interrelation between these two, and in that context, I have also considered the non-discursive practices such as the structure of political system, the institutional structure of periodicals or international building practices.

Based on this conceptual positioning, I have distinguished two main axes for research. The first is related with understanding the interface between environmental discourse and architectural discourse. To that end, I have turned to the concept of "interdiscursivity", a term which had been used by Foucault and then adopted in Critical Discourse Analysis by Norman Fairclough. Fairclough's interpretation is closely related with "intertextuality" which refers "to the condition whereby all communicative events draw on earlier events" (Philips & Jorgensen, 2002, p. 73). One particular form of intertextuality is "manifest intertextuality" as the "explicit presence of one text in another through the techniques of discourse representation, presupposition, negation, metadiscourse, and/or irony" (Jian-guo, 2012, p. 1313). This was revealed in the articles under analysis in usages such as the intertextual recycling of the definition of "sustainable development" from "1987 Brundtland Report". Interdiscursivity, on the other hand, is "related to the whole language system involved in a text" (Jian-guo, 2012, p. 1315). In that context, I have emphasized the discursive process in which the "environmental" statements were incorporated and reinterpreted in the field of architecture. However, this "intertextual chain" is not considered to be solely an arbitrary circulation, but rather as a discursive formation with certain rules for inclusion and exclusion. Thus, it is not only the detection of the reappearance of Brundtland Report's definition in articles, but also the uncovering of which parts of that definition are used and which are excluded, as well as, what that has come to suggest to architecture.

The second axis is related with understanding the discursive formation of "environmental architecture". The Foucaultian perspective on discourse, which I have

tried to illustrate so far, focuses "on the productive function of discourses. For Foucault, a discourse is constitutive of "reality" in that it physically shapes reality. A discourse constitutes specific ways of being engaged with the world and of being related to it" (Feindt & Oels, 2005, p. 164). Consequently, the operationalization of rhetorical constructions such as "environmental crisis" and "sustainable development" in architecture has resulted in certain discursive and practical transformations. In that context, discourses are understood to be manifested in the articles, but also in institutional structures and architectural practices. Although I have not exclusively analyzed the embeddedness of discourse in practice, its effects were nevertheless evident in the periodicals. Thus, this thesis have also witnessed the rise of "a specific ensemble of ideas, concepts, and categorizations that are produced, reproduced, and transformed in a particular set of practices" (Hajer, 1995, p. 44) that were alternatively called "energy-efficient", "sustainable" or "green" architecture. In other words, in this thesis, discourse analysis is used both to trace the formation of the discourse on environmental architecture in Turkish architectural periodicals, as well as observing their realizations the establishment of the "field" of environmental architecture.

1.4 Rethinking the "Problematic"

For the interface between environmental and architectural discourses, the main challenge is related with the specific nature of the environmental discourse. Environmental discourse is not a field with institutional boundaries like architecture; rather it is a field of discourse and practice that cut across multiple professions and disciplines. Thus, there are many dimensions and levels in which that relation could be analyzed. In the discourse on environmental architecture, terms and concepts are adopted from the science of ecology such as "ecosystem", "organism" or "ecological balance", themes are incorporated from environmentalism such as the critique of "human/ nature alienation", international politics are suggested as in the discussions on "sustainable development", or ideas are drawn from "environmental ethics" as in the discourse on the responsibilities of architects. Yet, very seldom this is followed with a theoretical specification of such transfers.

In overcoming that challenge, rather than pointing towards to all those moments in which such as a transfer is taking place in architectural discourse, I have chosen to

emphasize the construction of the "problematic" around which they are constituted. I use "problematic" similar to Necdet Teymur's application of the term, as a theoretical/ conceptual structure which determines "the system of concepts, instruments and modes of theoretical labor" (Teymur, 1982, p. 19). Formulized as such, an "invariant" structure can be perceived to underlie the differing interpretations of the "environmental" in architecture. According to Necdet Teymur, for environmental discourse it is basically the "Human-Environment" problematic which defined the objects, mechanisms and relations of that discourse (Teymur, 1982). Given the centrality of the relationship between a building as the materialization of human social relations and its environment, architecture is connected to this problematic from the start. In architectural periodicals under consideration, this is revealed, first of all, in the interpretations of that relation.[6] It is then followed in the formulization of the problems, specifically, environmental problems and its effects on the nature of the solutions proposed by architects.

John Urry and Phil Macnaghten in their book *Contested Natures* detect three doctrines in the current thinking about nature and the environment. I believe they also reside in the discourse on environmental architecture. The first, "is the claim that the environment is essentially a 'real entity', which, in and of itself and substantially separate from social practices and human experience, has the power to produce unambiguous, observable and rectifiable outcomes" (Macnaghten & Urry, 1998, p. 1). Urry and Macnaghten call it **"environmental realism"**. Here, the interpretations of environment are drawn from scientific inquiry in identifying the extent of the environmental damage which "are held to transcend the more superficial and transitory patterns of everyday life". The second doctrine is that of **"environmental idealism"**, in which both nature and environment is analyzed "through identifying, critiquing and realizing various "values" which underpin or relate to the character, sense and quality of nature". This is in accordance with the basic assumptions of environmental discourse and is based on the core beliefs that came to be regarded as "environmental" since the rise of contemporary environmentalism as against those "anti-environmental" beliefs and values. The third doctrine Urry and Machnaghten illustrate is **"environmental**

[6] Necdet Teymur, defines different types of this relationship as: A) Environment determines the formation, evolution and behavior of organism; B) Man determines the environment; C) When this two-way relationship is simultaneous; D) A more sophisticated version of this interactionism specifies types of relationships, e.g. "against", "opposition", "struggle"; E) The primacy of either Human or Environment is replaced by their unqualified "togetherness" and "unity".(Teymur, 1982, pp. 59-60) Considering the articles under consideration, it is possible to claim that all these positions were reflected, but it was mostly the last scheme that dominated the discourse on environmental architecture.

instrumentalism" which is "concerned to explain appropriate human motivation to engage in environmentally sustainable practices and hence the resulting environmental goods or bads. It seeks to do this in terms of straightforwardly determined calculations of individual and/or collective interest (such as cost-benefit analysis and contingent valuation schemes)" (Macnaghten & Urry, 1998, p. 1). This is related with anthropocentricism, or in other words, the radical separation of humans from the rest of living Earth.

All these three doctrines have played their part in the construction of the discourse on environmental architecture in Turkey. Yet, apart from their apparent differences, they continued to stay within the "Human-Nature" problematic. According to Teymur, the variations within environmental discourse operate within the subject-object epistemology as they see "Human and Environment" "as elements which are distinct, yet related, but always constituting a 'conceptual couple'" (Teymur, 1982, p. 60). Stephen Healy, based on the work of Bruno Latour, points towards a similar reductionism in representational thinking which "facilitates the 'purification' of representations into the material or cultural/symbolic realms and the many categorizations attaching to these such as: 'fact' and 'value', 'content' and 'context', 'expert' and 'lay', 'object' and 'subject' etc" (Healy, 2005, p. 242). The overarching concern here "is with how this legitimates these as a priori autonomous categories, thereby denying the potential for interactions between them. Paradoxically the establishment of these categories involves removing these interactions from view" (Healy, 2005).

The aim of this study, then, is the uncovering of the "problematic" dominating the field of environmental architecture so that the potential for these interactions could become accessible for architects. Thus, rather than providing a solution, the thesis first of all emphasizes the system of formulating the problems –namely the "problematic"- and secondly reveals its relation to the nature of solutions proposed. In that context, one of the main axes of the thesis has been the analysis of the mechanisms in which certain "problems" arose as being important and how they were defined in Turkish architectural discourse. In the last decade, it is possible to witness an increasing "awareness" in the articles under consideration on the effects of the human activities on environmental degradation. For example, today, the environmental consequences of building processes have become a popular discourse among architects. But it probably would have interested only a small group of people in 1963 when architectural periodical *Mimarlık*

first started its publication. But, what were reasons of this interest for environmental problems in architecture? Could it be explained simply by the extent and scope of environmental degradation? How did architects identify environmental problems, and what were the implications of this perception? These questions become even more relevant considering the fact that in Turkish architectural periodicals environmental problems were mostly taken as givens justified by scientific or ideological claims. And, the mechanisms behind this picture were seldom addressed in the articles published.

This, however, I believe is not restricted to the architectural domain. In that respect, the critique put forward by Bruno Latour in *We Have Never Been Modern* seems relevant as he argues that the environmental problems are sustained and proliferated because the intermeshing of the human and non-human factors creating them is systematically concealed (Healy, 2005; Latour, 1993, p. 240). Natural sciences have provided us with the explanations of the material reality and social sciences have identified "concerns centering upon the views, practices, behaviors and effects of social actors and institutions, but our capacity to grasp the intermeshing of the two remains poor"(Healy, 2005). Latour had labeled this separation of the human from the nonhuman as the "modern constitution".7 This critique is important also for the field of environmental architecture, whose objects operate at the interface of these two domains. Thus, environmental architecture today came to suggest both engineering and an objective frame, and a subjective perception and symbolic interpretation.

Latour proposed to move ahead of that dualism. The aim of this thesis is much more modest, in that it tries to make explicit the "confusion" regarding the objects of the environmental discourse- environment, nature and human- as both real and theoretical (ideal) objects (Teymur, 1982). A similar confusion is also evident in the human-environment relations (or its variants such as culture-nature), which is "conceived both as an *ideal relation* where 'human nature' and the homogeneous given field of environment are realized together; *and* as an *empirical interaction* of men and women with the physical objects surrounding them" (Teymur, 1982). This confusion, I claim, is crucial in understanding the discourse on environmental architecture. Moreover, it is essential if we are to understand what it is that the environmental turn in

[7] In return, Latour proposed to move ahead of this dualism. There are many critical and debated points in the conception of the world implied in his work – a discussion beyond the limits of this chapter. What I want to emphasize, instead in his work is "the advantage of creating a blank slate upon which real-world objects, their connections, and the processes that lead to their formation can be mapped according to what they really are; not according to what they are expected to be".

architecture claims to transform, and its limits in achieving that aim in the first place. The vagueness and the generality of the objects of the discourse obscure the gap between these two actualities, and by focusing on the "problematic" of the discourse on environmental architecture I aim to disclose this gap to a certain extent. Thus, the objects of the discourse on environmental architecture are "ideological" in a sense that "they are produced in, and used by, theoretical and practical ideologies" (Teymur, 1982, p. 33). This has been already claimed in relation with environmental discourse, for example by David Pepper in his book *Modern Environmentalism*: "A study of the history of 'green' ideas about the relationship between society and nature also reveals that these ideas are, and always have been, part of deeper ideological debates." (Pepper, 1996, p. 2) Less has been said about the interpretations of these ideas in architecture.

Discourse analysis provides such an insight by distinguish the facts or the descriptions given in the discourse as universal truths from the rules which made those statements, explanations and descriptions possible in the first place. The second axis of the thesis, then, has been the analysis of how that "problematic" relates and shapes the nature of the solutions proposed in the articles reviewed. In the end, by emphasizing the taken-for-granted assumptions and generalization inherent in the discourse on environmental architecture in Turkey, I aim to open up for new avenues in which new formulization of the questions could emerge.

1.5 Framing the Context

The previous section has outlined the "problematic" of environmental discourse which is also shared by the discourse on environmental architecture. This section starts from that argument and moves toward the "relations", which calls for a consideration of the "context". Thus, with the analysis of the Turkish architectural periodicals I intend to concretize the abstractions and generalizations defining the field and to problematize their received interpretations as such. This suggests a historicizing of the place occupied by the environmental turn in Turkish architecture which has, until now, been rarely taken upon. This thesis aims to contribute to that task, but only partially. Rather than proposing a comprehensive history, it emphasizes a set of concepts –environment, sustainability and energy-efficiency- that was introduced to architectural discourse as a consequence of that turn. In revisiting these in a sequential and overlapping fashion a

general outlook of the conditions in which the discourse on environmental architecture have emerged is sketched.

There are two related axis of such an analysis. The first is the global character of the environmental discourse and the second is its realization in a specific context, in this case, Turkish architectural periodicals. In that respect, the thesis moves simultaneously through international discussions on environment and their adoptions in Turkey. In other words, this thesis considers the relationship between architecture, environmentalism and discourse in the context of "globalization" over the past four decades. Such a formulization of the problem enables connecting what otherwise appears as two unrelated developments. The first is the globalization of the environmental movement into an arena of global politics. The second is the globalization of the architectural practice. These two overlap chronologically, and I claim, the rise of "environmental architecture" both as practice and discourse is closely related with the interface between these two processes. This is analyzed mostly in Chapter 2, which also forms the background for the following chapters in illustrating the "Western" ideas and histories that the articles in Turkish architectural periodicals frequently refer. Here I take the existing periodizations more or less for granted, only to show later both their influences on and their inconsistencies with the Turkish case. The following chapters, then, is situated within the context of Turkish architectural periodicals, and tries to connect the concepts and texts analyzed with events and phenomena in the political, social and economic domains. Thus, globalization here suggests a double process: on the one hand, that of unification by emphasizing the globalization of an environmental discourse, and on the other hand, diversification by emphasizing the twists and turns in its adoption to Turkish architectural discourse.

The thesis identifies the crossings between these two processes starting from the late 1960s in which a general shift was taking place in the world – namely neoliberalism as primarily a crisis response that begun to form in the post-war years but came to the fore in the 1970s.[8] In the late 1960s, this shift first led to a questioning of the idea of

[8] In the globalization context, this process has been considered by many social thinkers in differing terms and utilizing differing perspectives of theory and method. Thus, globalization came to regard "the economic dimension identifying an economic integration on a global scale", "the political integration of individual states as a primary dimension of globalization", the understanding of "environmental degradation on a global scale" or the social dimension as in "the intensification social relations across the globe" (Ardıç, 2009, p. 18). Presenting a thorough review of all these spheres is beyond the limits of this thesis. Instead, I take neoliberal globalization to express a project of social change, for which "human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade. The

progress that was characterized with "the loss of utopian horizon, rejection of history, the doubts regarding technology and the threat to individualism" (Kaminer, 2011, p. 19). The rise of environmentalism into a mainstream movement, for example, was implemented in such a context (Hajer, 1995), at about the same time that "modernism" begun to demise in the discipline of architecture through works such as Aldo Rossi's *The Architecture of City* and Robert Venturi's *Complexity and Contradiction* both published in 1966 (Kaminer, 2011). The oil crisis in the 1970s, on the other hand, has marked the end of rapid economic growth. This was best perceived in the publication of the book *The Limits to Growth* in 1972, which claimed that exponential growth would cause a resource crisis. In architecture, the discourse on resource scarcity had coincided with a transition in the discipline from those more radical oppositions of the late 1960s into a kind of withdrawal from the wider social transformations towards the mid-1970s (Kaminer, 2011). For the field of environmental architecture this was reflected in the emphasis given to self-sufficient and autonomous spaces that lowered the dependency on fossil fuels but also pointed towards a detachment from the place (Anker, 2010).

The thesis then identifies a similar, yet specific, shift in Turkey in the post-war years towards the liberalization of the political process (Karadag, 2010, p. 12). The transition to multi-party politics in the 1950s and the military coup in 1960 were the two milestones in that process, illustrating the specific challenges the country had to meet in its adaptation to late capitalism. Until 1980, the main model shaping the structure of the economy was "import-substituting industrialization" (Karadag, 2010) and the idea of development continued to dominate national politics (Arsel, 2005). In that context, environmentalism was considered to be in conflict with the ideals of economic growth and an environmental movement similar to that of witnessed in the West did not find acceptance in society. Thus, for this period the two oil crises seem to have been more influential in initiating practices towards environmental architecture in Turkey then the ideas and values of environmentalism or questioning of the idea of progress. The small interest in environmental issues in Turkey was shaped by architectural research around solar houses. Even the critique of high-modernism that begun to find voice in the late 1960s (Bozdoğan, 1997, p. 147), and the appeal to "Third-world-ist versions of modernization" (Bozdoğan, 1997) to which architects as politicized intellectuals

role of the state is to create and preserve an institutional framework appropriate to such practices" (Harvey, 2005, p. 2).

showed interest in the 1970s were not related with that of environmental considerations yet.

Approaching the 1980s, as "the end of the Bretton Woods international financial architecture and the oil price revolutions in the 1970s set the stage for the translation of neoclassical ideas into the economic policies known as 'Reaganomics' and 'Thatcherism'" (Karadag, 2010). As David Harvey has claimed in 1989 in his influential book *The Condition of Postmodernity*, globalization was part of the "flexible accumulation" which was "a new form of capitalism characterized by post-Fordist production and social relations" and also it indicated the compression of time and space that reordered all spheres of social life (Ardıç, 2009, p. 20; Harvey, 1989). In the 1980s "economic globalization" was finally being implemented in diverse spheres of social life such as work, management, governance, culture and so on.

1980s was also a turning point for Turkey in terms of its globalization "when a new project of economic liberalization and structural adjustment was launched immediately after the military coup" (Ardıç, 2009). The military coup in 1980 and the economic restructuring following resulted with "a major shift from a protectionist, import-substitution growth strategy to a liberal, market-oriented approach" (Ardıç, 2009). This was a move towards the integration of Turkey's economy to the world capitalist system. Accordingly, throughout the 1980s the economy was based on an outlook that welcomed foreign capital and consumer goods. The effects of these transformations on the social life and architectural culture are immense and beyond the limits of this section. However, for the subject matter of this thesis three of them stand out as being important. The first was the inflation in the number of architectural periodicals which also suggested a change in the quality and contents. One of the effects was the increasing coverage of the international ideas and projects. The second was the strengthening of environmentalism as a social movement, which pointed towards an increasing "environmental awareness" in Turkey. The third was the increasing role of the government in environmental politics.

Thus, when both environmental movement and architectural practice have transformed and adapted to the "logic" of post-Industrial society in the 1990s, their reflections in both Turkish architectural culture and architectural periodicals were relatively broader than the 1970s and 1980s. In the 1990s environmental problems have become part of the world politics, as they were no longer viewed as:

> minor scientific and technical matters but as important issues both in their own right and because they are increasingly intertwined with other significant issues in world politics including economic development, international trade, North-South relations, and even international conflict and national social and political stability. (Chasek, Downie, & Brown, 2010)

The rise of a global environmental politics should be seen as part of the "political globalization" which is characterized by complex channels of communication among international actors including "'interstate,' 'trans-governmental' and 'transnational' ones" (Ardıç, 2009, p. 23). The concept of "sustainable development" has played an important role in that process in bridging the gap between economic concerns and environmental protection. Thus, it was now possible to bring together rather different actors from environmentalists to states and business under a single concept, as it was revealed in international conferences such as "United Nations World Commission on Environment and Development Conference" held in 1987 and "1992 Earth Summit", held in Rio de Janeiro, Brazil. As Ulrich Beck had detected already back in 1992 in his important book *Risk Society: Towards a New Modernity* current environmental risks were global in character transcending the boundaries of the nation-state and creating a global, "risk society".[9]

This was also the period in which architecture has adapted to the changing economic paradigm and adjusted socially to the requirements of this of this new system. As Tahl Kaminer had claimed, throughout the 1990s, critique and opposition defining the discipline of architecture earlier appeared "old, obstructionist, exhausted and unnecessary" (Kaminer, 2011, p. 155). Kaminer defines it as a return to the "real" which brought about "the novel integration of architecture into market economy" and signified "an advocate for the existing, for the present, tough camouflaged as dynamic change" (Kaminer, 2011, p. 14).

It was in this atmosphere that "sustainability" has turned into an overarching theme in architecture. By then, international conferences on the environment and development, as well as academic research and publications, have created a global environmental awareness. The same sources have also created rhetoric on the role of architecture on environmental degradation, building processes being one of the main consumers of energy and resources. Thus, architecture has begun to share with

[9] In the following years, the three pillars- society, economy and environment- has transformed into the collaboration of economic development and environmental protection and was mostly resolved by the implementation of environmental management systems.

environmental discourse a concern for the physical environment, but also an interest in energy-efficiency. Efficiency was the core of the industry's interpretation of sustainable development (Huber, 2000) and became one of the main mechanisms in the turn towards the "real" in architecture. This was perceived in the works of the "high-tech" architects who begun to incorporate environmental terms, concepts and principles into their work in the 1990s. In that context, sustainability in architecture was "'constituted as a discourse within the realm of technology,' a discourse first deemed as the outcome of 'application technologies' and second 'as a metaphysic that installs a techno-functionalist way of viewing the world'"(Dean, 2008, p. 212). In fact, many have claimed that this has been the dominant perspective shaping the field since then (J. Farmer, 1996; Guy & Farmer, 2001; Hagan, 2001).

As the symbolic capital of the environmental architecture has increased, so did its coverage in Turkish publications and education. Yet, their effects were still very limited, and it was very hard to talk about a mainstream environmental architecture in Turkey. The real break in the field of environmental architecture in Turkey came in the first half of the 2000s, after the earlier financial crisis of 1994, 1998 and 2000-1. Thus, after the politically and economically unstable decade of the 1990s, Turkey has entered a new phase in its neoliberalization process, which have "resulted with a remarkable foreign investment and also considerable economic growth" (Harris & Işlar, 2014). This had important consequences both for the building industry with significant increase in construction practices (Balaban, 2012) and for national environmental politics which became increasingly privatized (Harris & Işlar, 2014).

1.6 Organization of the Chapters

Chapter 2 provides the background on the concepts, themes and histories to which the texts published in Turkish architectural periodicals have frequently drew upon. For example, the first section "Environmentalism as an Emerging Criticism" reviews some of the mostly accepted themes of environmentalism that had been influential in the construction of a narrative of what it means to be "environmental" in Turkish architectural periodicals. The second section, "Global Turn", on the other hand, covers the globalization and the changing interpretations of environmental problems into a discourse on environmental crisis. This is, then, supported with a review of the

mostly referred events and texts shaping the discourse on “sustainable development”. The third section, “Transforming the Practice”, looks for traces in the incorporation of these discourses into the field of architecture, and what they have come to suggest for the practice. The review put forward in this chapter, however, does not mean that the statements referenced are taken as facts, or that the historical narrative suggested defines the only trajectory of the field of environmental architecture has taken. Rather, it aims to provide a background for the following chapters both in terms of introducing the themes and narratives that the articles under consideration intertextually drew upon, and also depicting the changes taking place in the international agenda of architecture.

Based on this review, the following three chapters focus on the discursive formation of “environmental architecture” in the selected Turkish architectural periodicals. Each chapter revolves around a concept as an overarching theme that seems to define and shape the basic terms of the discussions for a specific time period, namely: “environment”, “sustainability” and “energy-efficiency”. Here, I first analyze the emergence of key ideas and concepts, and second, evaluate how their meanings have subsequently evolved in the course of the establishment of environmental architecture. In that context, the chapters present a somewhat chronological review both in themselves and in the sequence of chapters. In that context, Chapter 3 witnesses the rise of “environment” as a central problematic in architecture from the early 1970s to 1993. 1993 mark a significant point from which onwards both the discourse on “sustainability” and the interest in issues related with energy-efficiency had witnessed an expansion. Chapter 4 and 5 take the story from there, and relate with the present. Chapter 4 focuses on the transformation of the concept of sustainability, from the discourse on sustainable development to its incorporation into the discipline and becoming a term determining the field as in “sustainable architecture”. Chapter 5, on the other hand, reviews energy-efficiency as the most influential strategy in the construction of a green building market. The second turning point comes with 2007. From then on sustainability loses its significance as the main definer of the field, and becomes the domain in which the “social dimension” of environmental practices is claimed for as against the rising coverage of the issues related with energy-efficiency and rating systems. In overall, it can be claimed that Chapter 3 and 4 are more involved with the relations between the domains of environmental and architectural, whereas Chapter 5 reviews the effects of this interplay on the practice as it is interpreted in the periodicals.

Against this chronological review of the over-arching themes, at the end of each chapter a related aspect of the discourse on environmental architecture in Turkish architectural periodicals is highlighted. Yet, rather than presenting a total picture, these reviews attempt to identify several of the underlying assumptions involved in the discourse and question their implications for the field of architecture. In that context, Chapter 3 discusses the dissemination of the discourse on "environmental crisis" within the articles and its uncritical acceptance as a given. This argument was then complemented in Chapter 4 with an emphasis on the role of building sector in that crisis, which resulted in a discourse on the "responsibilities" of architects. This, however, rather than giving a focus to the discipline came to suggest a wide range of perspectives from an emphasis on technological fixes to an "ethical" stance. Chapter 5, then, builds on these two reviews and turns to what has come to dominate the discourse on environmental architecture in Turkish periodicals, especially after 2007. In that respect, it considers the authority of the pragmatic discourse reflected in the search both for a technological solution and a standardized program for action.

CHAPTER 2

ENVIRONMENTAL DISCOURSE AND ARCHITECTURE

2.1 Environmentalism as an Emerging Criticism

2.1.1 Modernization as a Self-defeating Process

It was in the atmosphere of the 1960's mood of protest and "counter-culture"- characterized by radical political, social and cultural movements- that environmentalism began to gain momentum as a mass movement. The 1960s and 1970s are recognized for their discontent with the developments in capitalist consumer society and environmental debates fitted well with such a critique of existing society and conventional values. In fact the growth of the movement during these two decades should be understood "as an element of a much broader value change that occurred at that time"(Hajer, 1995, p. 74). Starting with Rachael Carson's best-selling book *Silent Spring* in 1962, a new public awareness started to rise which began to question the consequences of modern science in relation to environment. In the context of "the radical 60s" the message of environmentalism was given a sympathetic reception. As a result, environmental concerns turned out to be an important issue for mass demonstrations with hundreds of environmental protests taking place in the United States. The new environmentalism embodied an important critique of post-war technological progress, and in this period, both the direction and pace of change was questioned.

There have been many sources influential in the construction of contemporary environmentalism and a thorough review of this subject will be beyond the scope of this chapter. I will rather direct the discussion towards its "critical" position, and mainly to the questioning of the relation between "humans" and "nature", and especially their dichotomization. This task is complicated given the fact that environmental field is diverse and fragmented, and there is no such single approach that can be called environmental. Nevertheless, if we put aside variations for the time being, a certain line of thinking emerged within environmentalism that problematized the "modernist" interpretations of nature and its basic assumptions:

> that humans are fundamentally different from and superior to all other species; that people can determine their own destinies and learn whatever is necessary to achieve them; that the world is vast and presents unlimited opportunities; and that the history of human society is one of unending progress. (Macnaghten & Urry, 1998, p. 7)

These assumptions, it was claimed, inevitably led to the degradation of the environment as it alienated humans from natural processes, and thus necessitates reconsideration.[10] To summarize with the words of Robert Kirkman from his book *Skeptical Environmentalism : The Limits Of Philosophy And Science*: "It is a commonplace among environmental thinkers that the root cause of environmental problems is a way of thinking that alienates humans from their natural environment and so permits or even encourages an accelerating disruption of natural systems"(Kirkman, 2002, p. 6). As follows, in environmental discussions the alienation of humans from nature was commonly defined as a modern condition that was the result of the processes such as modernity, industrialization, scientific revolution, the rise of capitalism, or Enlightenment among others. And, in many cases they were related with a specific turn in history whether it is Christianity, Enlightenment or Industrialization. Obviously, these critiques were not new or belonged solely to the field of the environmental. But, they had gained additional significance through their involvement with the "environmental crisis". As environmental degradation turned into an unavoidable statement, the human domination of nature was contrasted with our inability to control our impacts on that environment. In other words, it was "the realization that our system produces both economic prosperity and environmental pollution"(Killingsworth & Palmer, 2012, p. 9). The green critique emerged, in part, as an answer to that contradiction, to the need to diagnose and offer a solution to our contemporary condition.

"'The system' is in many ways bad and must be changed" argued Ernst Friedrich Schumacher in 1974 in his influential book *Small is Beautiful: A Study of Economics as If People Mattered* [11], and this error was "closely connected with the philosophical, not

[10] Environmentalism proposed many different approaches and principles, especially in terms of the quality of that reconsideration- whether it is a transformation, a radical break or a modification-. These differences and variations will be the subject of the proceeding sections. Yet, in this part I will try to go beyond that apparent diversity and focus on a certain kind of unity about the underlying causes of environmental crisis.

[11] This book has been very influential in environmental discourses, for it redefined environmentalism "as the counter to the emptiness of consumer materialism and the iron cage of rationality." British economist Schumacher criticized "modern technocratic society and pointed to a future society based not on profit and greed, but upon the pursuit of human happiness, health, beauty and the conservation of the planet."(Macnaghten & Urry, 1998, p. 48)

to say religious, changes during the last three or four centuries in man's attitude to nature"(Schumacher, 1991, p. 30). Most environmental thinkers, though, gave more precise dates as to the radical changes that took place in human and nature relations. Descartes and Newton, alongside of Galileo and Bacon were considered to be the most important figures initiating such a change, and seventeenth century with its scientific revolutions was claimed to be the era in which organic relationships were replaced by the metaphor of the machine.[12]

This search for the historical origins started with an assumption that environmental problems were the result of our conceptions of nature that were part of our incorrect worldviews. Yet, man's relation with and understanding of nature, it was claimed, were different in the past and that necessitates an analysis on the historical origins of this transformation. And, after the historical origins were clarified, modern worldview was associated with certain intellectual forerunners. Alan Marshall, in his book *The Unity of Nature : Wholeness and Disintegration in Ecology and Science,* stated four of them as being the most common: "mechanicism, dualism, reductionism and atomism" (Marshall, 2002, p. 14).

Environmentalists were not the first or the only ones, questioning the validity of technology or industrial revolution. But, they have added a renewed emphasis to the environmental consequences of industrial civilization. Thus, environmental crisis began to be perceived as "the (unintended) consequence of some of capitalism's essential features, such as the continued reliance on economic growth and its insatiable desire to create new markets, as well as its use of such growth to create space for political interventions (thus avoiding active redistribution of resources)" (Fischer & Hajer, 1999, p. 5). Behind this political-economic dynamic, continued Hajer laid various key aspects

[12] In the book *Contested Natures* Phil Macnaghten and John Urry presents a review of this line of narrative in environmentalism revealing the basic features of the discourse on the historiographical origins of human/nature separation. According to Macnaghten and Urry, starting from the late sixteenth and early seventeenth centuries known as the Enlightment two important transformations took place in relation with the separation and abstraction of nature. The first one was the transformation of nature from "a life-giving force to dead matter, from spirit to machine".(Macnaghten & Urry, 1998, p. 10) From Galileo, through Descartes to Newton, with the advances in science, nature became a calculable entity free of teleological explanation. This project depended on observation, where nature could be properly revealed only through science. The second was the formation of the tension between an idea of a pristine nature as against the formation of a human culture with its own laws and patterns. The difference came with how one perceived the "pre-social sate of nature": as "the source of original sin or of original innocence". (Macnaghten & Urry, 1998, p. 11) According to Macnaghten and Urry, this distinction had evolved into what they broadly termed Romanticism and Enlightenment. For Romantics such as Locke nature implied "peace, goodwill, mutual assistance and co-operation".(Macnaghten & Urry, 1998, p. 11) Whereas in Enlightenment, nature was seen as profane and threatening and it had to be controlled and cultivated through reason.

of modernity: “the dominance of scientific rationality and expert knowledge, the strong reliance on—and belief in—technological innovation as the agent of progress, the implicit legitimization of the use of violence, and the central tendency to see nature as an exploitable resource or as an externality” (Fischer & Hajer, 1999, p. 5).

Ecological understanding of nature, on the other hand, was defined in terms of its difference to a modernist model. So, against “the unreconstructed modernist version, in which nature is viewed as a source of raw materials and instrumental knowledge,” there was “the increasingly influential environmental model, in which nature is viewed as a number of almost ungraspably complex interrelated systems in which we are included, and upon which we are, and will always be, dependent”(Hagan, 2001, p. 18). Here, a preferred approach was positioned as opposed to its repellent other: environmentalism as a new field of struggle against the “self-defeating process of modernization”(Macnaghten & Urry, 1998, p. 20). Environmental model was claimed to initiate change from a destructive approach of nature that was modernist to a new paradigm of ecological values.

In environmental architecture, also, accounts of modernity were first of all associated with a critique of modernity, rather than its celebration. The built environment as it is practiced in the modern era was believed to have harmful impacts on both nature and human wellbeing. For example, in 1972 *Architectural Design Magazine* had published an issue titled “Designing for Survival”in which the editor Colin Moorcroft claimed:

> the values which sustain industrial technology (and which it in turn sustains) seems to be incompatible with the fulfillment of the promises which have always been held out to justify its continued expansion and development. Promises of food, health, work and consumer comforts for all have proved tragically false. The promise of social enlightenment and freedom due to abundance of material wealth and the growth of knowledge has proved equally elusive. (Moorcoft, 1972, p. 414)

The architectural examples of this period also displayed a similar inclination in that they rested on a critical interpretation of both society and human/nature relations. Sim Van der Ryn and Stuart Cowan in their book *Ecological Design* called these practices as “the first generation of ecological design”(Van der Ryn & Cowan, 1996, p. 47) and defined them as radical in character. These practices presented a variety in the expression of the environmental architecture. On the one hand, there was an enthusiasm with the new sciences, such as systems theory and ecology, and the newest technologies were appropriated in examples such as New Alchemy Institute’s Arks or in projects like

Ouroboros and Autartik House. On the other hand, the moral imperative emphasized itself in de-centered, bottom-up architectures revealing in diverse forms of activism, from self-built houses to vernacular approaches. Yet, uniting these differing practices was a vision of a "holistic" life, whether it was an emphasis on spiritual features, or a reconfiguration of the relationship between nature and humans, or an ethical unease for future generations.

Consequently, these early experiments of environmental architecture coincided with other "protest" architectures of the period "as vernacular revival, simplified self-built, and low-grain energy systems- all in the deindustrialized model of an underdeveloped country of communes," and shared with them a critique of modern architecture. This had revealed itself in architecture with an interest in the ideas of the "primitive", and words like "vernacular, anonymous, spontaneous, indigenous or rural"(J. Farmer, 1996, p. 11) were appropriated in architectural discussions. "As a reaction against globalism of the International Style and the manic propositions of megacity, "genius loci" came back into architectural parlance"(J. Farmer, 1996, p. 168). This renewed interest embraced differing approaches, ranging from the search for our primeval roots in an idealized past, to do-it-yourself projects either inspired by organic forms or by urban junk culture. Bernard Rudofsky's 1963 exhibition "Architecture without Architects" marked an important point in displaying the potential of the architecture of folk cultures. Vernacular architecture was relevant to the then new movement of environmental architecture, because vernacular examples represented a model for an economy of scarcity: working with restricted resources of energy and materials. Natural materials of mud bricks, earth floors, recycled bricks and timber started to be re-evaluated among architects as an important part of ecologically sensitive architecture. "The discovery that building mass, either earth, stone or concrete, could be used as a good climate modifier took many designers back to forms of reminiscent of traditional buildings"(J. Farmer, 1996, p. 172).

In architecture, the ecological connection with the region displayed itself with a focus on the use of materials, and on the siting and orientation of the buildings according to the climatic configurations. This focus on the energy-conservative use of existing resources and materials gained additional importance with the oil crisis taking place in the early 1970s. Vernacular architecture with its passive environmental techniques became an important part of the environmental imperative. Yet at the same time the ecological vision searched for a holistic attitude displayed in social values and

norms of a particular region. In this context, the vernacular buildings represented a criterion of “truth, integrity, participation and anti-elitism”(Hagan, 2001, p. 103). And, they were considered to be more in tune with the environmental values such as “balance”, “harmony” or “relatedness”.

2.1.2 Survivalist Discourse

One of the most central debates in the history of environmentalism was induced in 1972 with the publication of the book *The Limits to Growth*. The book was the result of a project held by established experts from the Massachusetts Institute of Technology (MIT), who built a computer model of the world to analyse the consequences of a rapidly growing world population and finite resource supplies. The model examined the effects of five major trends stretched out a hundred years into the future: “accelerating industrialization, rapid population growth, widespread malnutrition, depletion of non-renewable resources, and a deteriorating environment” (Meadows, Meadows, Randers, & Behrens, 1972, p. 21).

The book’s conclusions were straightforward: continued exponential growth would cause a resource crisis within a period of 100 years resulting in a sudden decline in both population and industrial capacity. The book claimed that: “If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years”(Meadows et al., 1972, p. 25). The policy prescription was also obvious: “humanity needed to change its profligate ways if it were to survive or, more precisely, to avoid the apocalypse of overshoot and collapse”(Dryzek, 1997, p. 27). These results initiated a stirring discussion about global ‘overshoot’ or resource consumption beyond the ‘carrying capacity’ of the planet. The book was criticized extensively for its “hierarchical and technocratic top-down approach”(Hajer, 1995, p. 79) and for its neo- Malthusian assumptions. First of all, *The Limits to Growth* was sponsored by a group made up of leading figures from business, policy-making, and science and it was “oriented towards the world leaders and national elites which it hoped to unite for a joint approach to the problem”(Hajer, 1995, p. 83). Secondly, the project was legitimated by its use of elaborate computer simulations based on a relatively new field of systems dynamics. At that time, systems dynamics “was

seen as a promising opportunity to extend the possibilities of a rational and scientifically based form of decision-making"(Hajer, 1995, p. 81). It was later criticized for reducing the ecological and social questions involved in the project to an application of techniques of scientific management.[13]

The apocalyptic predictions of *The Limits to Growth* became quite influential in environmental debates of the early 1970s, defining the environmental problems as a global crisis. Issues such as natural limits and population growth have begun to be discussed in environmental discussions. According to John Dryzek, the apocalyptic message inherent in the report was part of a larger tendency in environmentalism- "survivalism" - that was dominant near the beginning of the modern environmental movement. In survivalist discourse, "nature" is seen as a finite source with a "carrying capacity" threatened by economic growth and human population (Dryzek, 1997, pp. 38-41). The most common rhetorical devices are those of 'overshoot and collapse', the 'commons', the 'sinking ship', the 'runaway train', 'Spaceship Earth', and notions of 'cancerous growth' and 'viruses', and images of doom and redemption (Dryzek, 1997, pp. 40-41).

In architecture, one of the modes that the survivalist discourse had entered the discipline was through a search for autonomous shelters that would sustain themselves for a long-period of time regardless of the apocalyptic predictions dominating the period. One such example would be Paolo Soleri's *Arcology: The City in The Image of Man* that was published in 1969. Here, he coined the term "arcology" from the words "ecology" and "architecture", a term also used later by science fiction. The concept was a critique of urban sprawl and proposed design principles that would economize transportation and other energy wastages by designing mega structures. The book was a collection of his illustrations of different types of arcologies from sea floating to outer space. It can be argued that, these illustrations and the concept of arcology was inspired by the inhabitation of outer space, which according to Peder Anker was an underlying influence in that time period (Anker, 2005). In the late 1960s for majority of related designers, building in harmony with the Earth's ecosystem meant to create self-sufficient and closed ecological systems. The survivalist discourse of the period

[13]This construction of the problem as a world-threatening collapse, in return directs the argument on the need for strong centralized administration, giving world leaders and national elites crucial roles as rational and authoritative actors.

displayed a pessimistic vision of the future of the industrial societies and warned about a global ecological collapse. Space colonies were supported by the majority of environmentalists for like Noah's Ark of earthly species; they represented a rescue from the industrial destruction and provided a shelter against the coming doom(Anker, 2010, p. 113). As a remedy the "need to design fully functioning self-contained environments, capable of sustaining human life over long periods" were emphasized "instead of creating buildings which exploited the environment"(Anker, 2005, p. 528). As a consequence, throughout the 1970s, the terminology, technology and methodology of space research became an important part of both ecological debates and ecological architecture. Thus, "the creation of microclimates became a new area of architectural study,"(J. Farmer, 1996, p. 169) and "designing and building closed autonomous systems became a trend among ecological architects"(Anker, 2010, p. 116).

One such example was the "bioshelter" designed by John and Nancy Todd. Bioshelter was a solar building, yet Todds distinguished their designs from the petro-chemical fuelled monoculture greenhouses.[14] Just like the previous examples, the aim was to create autonomous and self-sufficient communities without a dependence on fossil fuels. In doing so, they tried to integrate urban life with biological processes by understanding how natural systems function. Through these 'living machines' they wanted to incorporate "principles inherent in the natural world in order to sustain human populations over a long span of time."[15]

[14] In 1969, John and Nancy Todd and William McLarney co-founded the New Alchemy Institute and began designing miniature, largely self-sufficient ecosystems, which they called a 'bioshelter'. Their slogan was 'To Restore the Lands, Protect the Seas, and Inform the Earth's Stewards', which according to Anker captured "the spirit of this back-to-the-land commune which cherished a blend of political anarchism, environmentalism, and anti-urbanism."(Anker, 2005, p. 536) In 1969 they realized their first ark project called Cape Cod Ark. Cape Cod Ark contained vegetable gardens, a sewage system producing power from burning methane, a compost system mimicking Earth's soil processes and solar heated fish tanks. In time, their experiments became more complex prototypes of greenhouses mostly utilizing glazing to contain and protect the living biology inside. The name 'Ark' was significant for it corresponded to the survivalist discourse dominant at the time, the fear of the ecological collapse of the Earth. The Arks were intended to be a micro-cosmos, a miniature earth "that would keep biologically afloat in case the larger ecosystem sank."(Anker, 2005, p. 536) Based on the principles of ecology and cybernetics, New Alchemy Institute searched for a self-sufficient architecture that imitated the ecological processes of nature as a whole.

[15]Nancy Jack Todd and JohnT odd, *From Eco-Cities to Living Machines: Principles of Ecological Design* (Berkeley, CA: North Atlantic Books, 1994) 1.

2.2 The Global Turn

2.2.1 Constructing "Environmental Problems"

In *The Politics of Environmental Discourse*, Marteen Hajer argued that the developments in environmental politics critically depend on the specific construction of environmental problems. The same, I believe, can be claimed for environmental discourse in architecture. As will be more clearly demonstrated in the following chapters while analysing Turkish architectural periodicals, how the architects define the problem in relation to environment and understand their responsibilities to solve it considerably affected the design process. The construction and the interpretation of environmental problems, however, is not limited to design disciplines but points towards a much larger transformation. Therefore, an analysis on the interpretation of environmental problems within environmental discourse and their transformations I believe is necessary before going into the evaluation of Turkish architectural periodicals.

First of all, I start with a presumption that environmental problems are not static but are contingent to the changes in environmental politics.[16] To this end, I turn to Marteen Hajer and *The Politics of Environmental Discourse*, who emphasizes the dramatic changes in the way in which environmental policies are conceptualized since 1970s. According to him, 1970s saw the emergence of environment as a (semi-)independent field of attention for the first time. Characteristic of this early period was "compartmental division": dividing the environment into air, water, soil, and—sometimes—sound and the main aim was to control the quality of these separate compartments. In this era environmental protection was seen as part of industrial politics, which was not too surprising "since pollution was not generally recognized as a structural problem: it was basically perceived to be a problem that could be contained using ad hoc, and ex post remedial measures."(Hajer, 1995, p. 25)

[16]For example, the initial concerns about the environment such as pollution, wilderness preservation, population growth and depletion of natural resources, in time have been supplemented "by worries about energy supply, animal rights, species extinction, global climate change, depletion of the ozone layer in the upper atmosphere, toxic wastes, the protection of whole ecosystems, and environmental justice (the distribution of environmental damage across ethnic groups and social classes)."(Dryzek, 1997)

Whereas the 1980s saw the emergence of a new policy-oriented discourse in environmental politics which Hajer labels as "ecological modernization". According to Hajer, ecological modernization introduced environmental degradation as a calculable problem and once it became calculable it began to be perceived as a question of efficient distribution of resources. Ecological modernization rested on the assumption that "economic growth and the resolution of the ecological problems can, in principle, be reconciled"(Hajer, 1995, p. 26), thus proposed a "win/win" situation. In that sense it followed a utilitarian logic, rather than proposing a thorough critique of the causes leading to environmental degradation. In other words, ecological modernization "recognizes the structural character of the environmental problematique but none the less assumes that existing political, economic, and social institutions can internalize the care for the environment"(Hajer, 1995, p. 25).

Approaching the 1990s, environmental problems changed in scale. Now it was the "global biosphere", the blue earth as a complex system that was under analyses. This implied an emphasis on the transnational features of space in which the existence of nations and communities became irrelevant when compared with the biophysical realities. Secondly, the planet was perceived as a scientific object, "a matter of complex scientific extrapolations, of mathematical calculations"(Hajer, 1995). Such a change in scale depended on the measuring of global processes, which was possible only with the generation of new instruments and equipment. What this implied was that a new group of experts emerged, "who define the key problems, who assess the urgency of one problem vis-a-vis other possible problems, and who implicitly often conceptualize the solutions to the problems they put forward"(Hajer, 1995). [17]

Throughout the 1990s, both the transnational character and the scientific framework of the environmental problems resulted in a rhetoric of a single planet facing shared problems that extend into a "common future". This global conception propelled the environment to a centre stage as "a powerful vehicle to promote international dialogue and cooperation among nation-states"(Macnaghten & Urry, 1998, p. 214). Thus, what was previously seen as 'minority' concerns were now given central significance. In this context, certain issues stood out as being significant in the

[17] I share the same approach with Macnaghten and Urry when they claim that: "scientific knowledge on its own is an insecure base upon which to explain how risks can be understood and confronted, not least due to the cultural and hermeneutic character of scientific knowledge itself." (Macnaghten & Urry, 1998, p. 108)

environmental agenda with a consensus amongst politicians, industry, media and key environmental organization. Among this major cluster of issues were the greenhouse effect, ozone depletion, toxic wastes, loss of biodiversity and climate change. Today, with the help of scientific studies providing the scientific proof, these issues are identified and accepted as "environmental problems". As will be analysed further, both environmental problems and the discourse on environmental crisis played a crucial role in the construction of the problematic of environmental architecture.

2.2.2 Sustainable Development

Against that background, one of the milestones in the introduction of sustainability to international arena was the "United Nations World Commission on Environment and Development Conference" held in 1987, and its accompanying report *Our Common Future*. As acknowledged by *Agenda 21* later in 1992:

> In 1987, the U.N. World Commission on Environment and Development linked the issue of environmental protection to the seemingly unrelated topic of global economic growth and development. Headed admirably by Norwegian Prime Minister Gro Harlem Brundtland, this commission produced a stunning report entitled Our Common Future, which carefully documented the status and future of the global economic and ecological situation. Perhaps the most lasting accomplishment of the Brundtland Commission, however, was to thrust the concept of "sustainable development" into the mainstream of world debate. (Sitarz, 1994, p. 4)

As can be followed, right from its inception bridging environmental protection with global economic growth and development was the core of the discourse on sustainable development.[18] In other words, sustainable development was incorporating the environmental dimension with the concept of development; and at the same time, was emphasizing "the possibility of a new era of economic growth".(World Commission on & Development, 1987, p. 1) [19] Thus, sustainable development

[18] One of the main axes of such discussions in these early years was the conflict between "developed" and "undeveloped" countries, which as we have seen in the previous chapter also found reflection in Turkish architectural periodicals: "On the one side were environmentalists, who argued the limits to growth or no more- growth position to meet the threat of pollution, protect natural resources, and respect the rights of future generations. On the other were representative economists, especially of the Third World, who argued the need for development and more growth, to alleviate poverty in the present and to make it possible for these nations to play their proper role in international affairs."(Mitcham, 1995, p. 317)

[19] This underlying imperative revealed itself in phrases such as the report's quest for "more rapid economic growth in both industrial and developing countries, freer market access for the products of developing countries, lower interest rates, greater technology transfer, and significantly larger capital flows."(World Commission on & Development, 1987, p. 89)

suggested a “win-win situation”(Macnaghten & Urry, 1998, p. 214), or that “we “can have it all”, both further growth and a cleaner environment”(Fischer & Hajer, 1999, p. 1). This settlement had appealed to and provided a common language between different actors from environmentalists to states and business. This, in fact, according to Macnaghten and Urry was the primary aim of its construction:

> Brundtland Commission's approach to sustainable development reflected the political need for an approach which would gain the support of diverse and potentially conflicting interests, including those of business and states, of East and West, and of North and South. The political project therefore was one which was avowedly apolitical, over and above its preoccupations to achieve global consensus amongst both citizens and governments. (Macnaghten & Urry, 1998, p. 215)

It was this reconciliation that gave sustainable development the popularity it had gained with the “United Nations Conference on Environment and Development” also known as the “1992 Earth Summit”, held in Rio de Janeiro, Brazil. As a result, 1992 Earth Summit brought together a large number of countries, organizations and citizens: “172 governments participated, with 116 sending their heads of state or government” and “some 2,400 representatives of non-governmental organizations (NGOs); 17,000 people attended the parallel NGO Forum”. 1992 Earth Summit, then, marked the “global turn” of the environmental discourse. According to John Urry and Phil Macnaghten as they discuss in their book *Contested Natures,* inherent in this process was the ideology of the “same boat”: “we all share the same finite planetary resources and means to development, and that unless we learn to cooperate as a single global entity we risk common catastrophe”(Macnaghten & Urry, 1998). Similarly, Marteen Hajer and Frank Fischer claimed that “sustainable development always was a reform-oriented *inclusionary* discourse”(Fischer & Hajer, 1999, p. 3). As such, Earth Summit stood out as a call for collaboration and consensus between governments, business and NGOs. The differences involved in the issues suggested at the conference were resolved with “somewhat loose and non-binding definitions” (Macnaghten & Urry, 1998, p. 214) and a reliance on “the idea that problems, once recognized and publicly acknowledged, can be handled with the institutions of science, technology and management” (Fischer & Hajer, 1999, p. 2). To its success, since then, the definitions proposed by Brundtland Report and Earth Summit had been broadly accepted.

The problems pointed towards, however -for example in “Agenda 21” that was established as a result of the Earth Summit- were massive and suggested conflict: “the need to reduce carbon dioxide emissions, the limited sustainable pathways to

development in the South, the need to fight poverty and stop deforestation, as well as the need to develop new strategies for water resources management and its protection from biodiversity" (Fischer & Hajer, 1999, p. 1). Already back in 1987, this multifaceted character of the concept was formulized by economist Ed Barbier with a model of sustainable development that rested on three pillars or spheres of development—social, economic and environmental (Plessis, 2007). [20] In the following years the three pillar model continued to inform the discourse on sustainable development, and sustainability was assumed incorporate three dimensions: environmental protection, social equity and economic development. This model was commonly represented with three interlocking circles. The relative relationship between these three pillars, then, became the contested terrain upon which the discourse on sustainable development was constructed.

In the following years of the Earth Summit, however, it was mainly the collaboration of economic development and environmental protection that determined the agenda of sustainable development, and this collaboration was mostly resolved by the implementation of environmental management systems. For example, "following the endorsement of the Brundtland Report many Western countries published comprehensive documents outlining national environmental policy plans from around 1990", and for all their differences, they started "from the recognition that the state of environment calls for an integrated approach and outline a national strategy of bureaucratic regulatory management of the environmental problems"(Hajer, 1995, p. 11). At the same time, green business networks begun to form in the beginnings of 1990s, such as "World Business Council for Sustainable Development", "Responsible Care Initiative of The Chemical Industry", "European Partners for the Environment", "Social Venture Network", "International Network for Environmental Management" (INEM), or "Global Environmental Management Initiative" (GEMI) (Huber, 2000, p. 276).

[20] It was also conceptualized as "triple bottom lie" (TBL) approach by John Elkington in 1994 in "Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development." California Management Review, 36(2), 90-100.

2.3 Transforming the Practice

2.3.1 Incorporating Sustainability into Architecture

The critical approach and the uneasy questions posed by the environmental movement of the 1970s, however, lost their initial emphasis in the 1980s. The "managerial approach" to environmental problems, with "the belief that they can be solved without fundamental change in present values or patterns of production and consumption" begun to dominate the discourse, and promoted environmental issues "on a 'respectable' agenda," so that "the organization and dynamic of capitalism could now be part of, even beneficial to the environmental movement"(Beaufoy, 1993, p. 200). For the design world, this resulted in more and more "environmentally responsible" products taking their place in the market. In the 1980s, collaboration between design professionals and business sector came into prominence claiming to dissolve the conflict between green design and business success (Madge, 1993). As the popularity of environmentalism increased, so did the green products and they were established as an essential ingredient of the business.[21]

Architecture, however, was "somewhat of a late-comer" when compared with the design field as observed by Penelope Jean Dean in her doctoral thesis "Delivery without Discipline: Architecture in the Age of Design". The field of architecture was not yet dominated by green products or buildings; nevertheless the technological trajectory was evident through works such as, "Charles Jencks' book Architecture Today (1982) which included a chapter on 'alternative technologies' and the 'bioclimatic skyscraper' research of Malaysian architect Ken Yeang, and in the USA with the commission of the first 'green (sustainable) building' designed by William McDonough in 1984" (Dean, 2008, p. 211).

[21] As green became marketable, there also appeared misrepresentations in ecolabelling called greenwash. "The greenwash is manifest in some of the claims made for the plethora of building materials, features and gadgets that by their presence alone are held to authenticate a green building. Sometimes these are rustic materials (mud brick, straw bales, rammed earth). Sometimes they are high-tech gadgets (solar panels, sun scoops and geothermal heating systems). The important point is that while biodegradable materials and technical devices can make effective contributions, and symbolic elements can be important in their own right (we discuss this later), the use of such materials and devices is not alone a sufficient indicator of an environmentally friendly building." Terry Williamson, Antony Radford and Helen Bennetts, ed., Understanding Sustainable Architecture (London and New York: Spon Press, 2003), 11.

Approaching the 1990s and coupled with the discourse on sustainable development especially after the 1992 UN Earth Summit in Rio de Janeiro which put sustainability on the international political agenda, these incidents had transformed into a mainstream and global influence. Being one of the main contributors of the business sector, building processes were quickly involved in this process of "global environmental management". For example, in 1990 American Institute of Architects formed its committee on the Environment. In the same year, a UK government agency, the Building Research Establishment (BRE), produced the world's first comprehensive environmental assessment method for buildings in, called the BRE Environmental Assessment Method (BREEAM). Three years later, in1993, The US Green Building Council was formed. In the same year, the Forest Stewardship Council (CS) was established as a worldwide standard setter for socially and environmentally beneficial forestry (Williamson, Radford, & Bennetts, 2003, p. 11). [22]

1993 was also significant because it was the year the 18th World Congress of Architects was organized by the International Union of Architects (UIA) that marked the institutional recognition of "sustainability" in architecture. The theme of that year's congress was chosen as "Architecture at the Crossroads: Designing for a Sustainable Future", and, it resulted in the establishment of "Declaration of Interdependence for a Sustainable Future". Susan Maxman as the president of International Union of Architects announced the principles of the declaration as "we commit ourselves, as members of the world's architectural and building-design professions, individually and through our professional organizations, to:

> Place environmental and social sustainability at the core of our practices and professional responsibilities;
> Develop and continually improve practices, procedures, products, curricula, services, and standards that will enable the implementation of sustainable design;
> Educate our fellow professionals, the building industry, clients, students, and the general public about the critical importance and substantial opportunities of sustainable design;
> Establish policies, regulations, and practices in government and business that ensure sustainable design becomes normal practice;

[22] "In addition, several important guides to green building or sustainable design appeared in the early to mid-1990s. The Environmental Building News, first published in 1992, remains an independent, dispassionate, and authoritative guide to sustainable construction.54 In 1994, the AIA first published its "Environmental Resources Guide," followed by a more detailed version in 1996.55 The "Guiding Principles for Sustainable Design," produced by the National Park Service in 1994, provides one of the first overviews of green building production.56 Similarly, the "Sustainable Building Technical Manual" was developed and published jointly by the U.S. Department of Energy and Public Technology, Inc., in 1996.57 The Rocky Mountain Institute's "A Primer on Sustainable Building," published in 1995, also contributed to the public understanding of sustainable construction."(Kibert, 2008, p. 49)

> Bring all existing and future elements of the built environment – in their design, production, use, and eventual reuse – up to sustainable design standards. (Maxman, 1993)

This declaration was in accordance with the definitions of sustainable development proposed in Brundtland Report and the Earth Summit, and can be seen as a continuation of a similar approach. First of all, the three pillars around which the discourse on sustainable development was constructed were also evident in the architectural discussions with the need to integrate the economic, social and environmental dimensions. Just as sustainable development was an attempt to integrate environmental protection and social inequity into the discourse on development, sustainability in architecture was proposed as to incorporate the "environmental" and "social" to conventional practice. Accordingly, the first emphasis Maxman stated was the "environmental" and "social" aspects of sustainability, and their relations with the responsibilities of the profession. As such, Maxman was pointing towards an understanding of sustainability in architecture, which tended to see the concept as more than just an economic concern. Thus, in spite of the criticisms put forward against sustainable development "for prioritising developmental over environmental objectives and, more fundamentally, for perpetuating the mechanistic worldview from which current environmental problems emerged"(Owen & Dovey, 2008, p. 12), in architecture it also came to denote an expansion of the field towards a more ethical agenda. In fact, environmental architecture begun to suggest a whole range of things: an alternative to conventional design, a new way of relating with nature, or even a new way of approaching life.

Yet, the implementation of these principles into the practice was harder to follow. What exactly did it mean for architects and how were they to "place environmental and social sustainability at the core of their practices"? This statement revealed very little about the kinds of practices, processes and limits needed to achieve these objectives, and reduced the subject to the intentions of individual professionals.[23] In relation with the social equity principle of Brundtland report, Huber was detecting a similar point:

[23] This dimension will be further discussed in relation to the discourse of responsibilities. P. Feng and A. Feenberg in their article "Thinking About Design: Critical Theory Of Technology And The Design Process" associated this tendency with an overemphasis on design and intentionality thesis: "the assumption that individual intentions and values will play a defining role in the design of technological artefacts such as buildings, regardless of context, constraints or users." (G. Farmer & Guy, 2010, pp. 372-373)

> This noble rule, too, is blemished by being a mere categorical imperative. As such, it is understandable as a normative construct, but it is not tied to empirical premises, not yet linked to specific historical conditions. As far as the economics of welfare and distribution go, and from a philosophical viewpoint of equity, one immediately recognizes the endless conflicts over values and measurements that will inevitably ensue from the application of such a rule. This is not to argue against the rule but to point out that it does not apply to just anything, and that the different and even contradictory notions of justice linked to it need to be clarified.(Huber, 2000, p. 272)

Secondly, and relatedly, like the concept of sustainable development, the principles of environmental architecture were also somewhat loose and generalized. This elasticity of the concept was operationally necessary because sustainability in architecture –like its counterpart sustainable development- sought to reconcile and provide a common language between the rather diverse actors of building processes. Like the "same boat" ideology inherent in the construction of sustainable development (Macnaghten & Urry, 1998, p. 214), the principles listed by Maxman implied that we had to cooperate as a global entity in order to prevent environmental catastrophe. Thus, this was a call to all the architects around the world. It was also a call for educators, governments and business- to all the parties involved in the production of built environment.

Thirdly, sustainability in architecture shared a similar appeal to management as the response to global environmental problems. In fact, the most distinct answer the declaration gave with regard to the delicate questions it posed was towards management: "Establish policies, regulations, and practices in government and business that ensure sustainable design becomes normal practice." Additionally the constitution of design standards was mentioned two times. According to Marteen Hajer, sustainable development resonated with the themes of ecological modernization as "the discourse that recognizes the structural character of the environmental problematic but none the less assumes that existing political, economic and social institutions can internalize the care for environment."(Hajer, 1995, p. 25) Correspondingly, although starting from moral premises, the declaration pointed towards a utilitarian logic with a belief in institutional solution for present problems. In overall, the solutions proposed were mainly towards "efficiency, technological innovation, techno-scientific management, procedural integration, and coordinated management"(Hajer, 1995, p. 32).

In the end, the conference "Architecture at the Crossroads: Designing for a Sustainable Future" created the intended momentum, and sustainability was quickly incorporated to architectural discourse. As observed by Pauline Madge, by the early 1980s sustainability was already in usage in design disciplines, but it was mostly in the

early 1990s that sustainability became a global trend and even a buzzword in architecture (Madge, 1997). In architecture, sustainability proved to be a very functional concept bridging the gap between the more idealist and at times utopian versions of architecture (as was the case with the earlier experiments in the 1970s) with the terms of the building industry. The rise of sustainability as a key concept of architecture, thus, coincided with a shift in perception from an image of environmental architecture contradicting economic interests to a one supporting performance. Susannah Hagan in her book *Taking Shape* was defining this process as: "Architects open to the environmental message, but unwilling to be associated with the often Luddite tendencies of the Greens, found the progressive science-based version represented by "sustainability" much easier to accept"(Hagan, 2001, p. xiii).

In that context, sustainability fit well with the changing parameters of architecture in adapting to the new economic paradigm, namely neoliberalism whose logic was implemented in diverse spheres of work, management, governance, culture and so on. According to Tahl Kaminer as put forward in his book *Architecture, Crisis and Resuscitation: The Reproduction of Post-Fordism in Late-Twentieth- Century Architecture*, there was a disciplinary shift from "a withdrawal into itself as escapism or resistance and resuscitation in "seclusion"" towards a return to the "acceptance of the new social order and a mastering of new techniques and understandings as a means of relating to the changed socio-economic landscape" (Kaminer, 2011, p. 5). This transformation in the field of architecture as a whole had also affected the interpretation of the environmental problematic. The critique and opposition that had been posed earlier by environmental architectural practices had lost their significance, and environmental architecture had begun to be increasingly associated with performance and being energy-efficient. In fact, efficiency along with technological innovations had been the main strategy in the adaptation of environmental concerns into the economic imperative dominating the period. Thus, it was now possible for international architectural firms and star architects to incorporate environmental considerations into their practice. This was also related to and in accordance with the changing conditions of architecture from a regional or national framework to a global practice. The fall of the Berlin Wall in 1989, the collapse of the Soviet Union in 1991 and the end of Cold war marked a new phase in economic and political systems (Adam, 2012). Additionally in 1991, the World Wide Web was launched and E-trading became possible

and a new period of financial trading had begun. This international exchange of the capital was called "globalization", yet its impacts had out-reached the economical dimensions to social and cultural ones as well (Adam, 2012). Paul L. Knox and Peter J. Taylor in their article "Toward a Geography of the Globalization of Architecture Office Networks" define this process as

> Enabled by digital and telecommunications technologies, by advanced international business services, and by the emergence of clients with transnational operations and cosmopolitan sensibilities, the portfolio of many architecture firms has acquired an international component, and the scope of operations of many of the largest firms has become truly global, with multiple international offices on several continents. Professional publications now contain regular features and updates on international projects and practice, and one publication—World Architecture— specializes in the topic. Meanwhile, the World Trade Organization has attempted to codify international trade in design services through the General Agreement on Trade in Services, signed by WTO members in 1993 and made operative in 1995, and imports and exports of design services have increased dramatically. (Knox & Taylor, 2005, p. 23)

For architecture, these developments meant the expansion of international architectural practice. "As the financial and corporate sector grew beyond the established centers of New York, London, Tokyo and Hong Kong in the 1990s, these practices and others opened new offices to respond to the market"(Adam, 2012). The relation of this process with the rising interest in energy-efficiency is perhaps best epitomized in the interest of the architects of the High-tech school in environmental issues. For example, in 1993, architects associated with high-tech such as Norman Foster, Renzo Piano, Rihard Rogers, Thomas Herzog, Françoise-Hélène and Jourda Gilles Perraduin came together to form READ- Renewable Energies in Architecture and Design. Buildings that are considered to be iconic representations of environmental architecture today, such as Menara Mesiniaga of Ken Yeang (1992) and German Parliament by Norman Foster (1993) begun to be implemented in this period. The most referred architectural example of the Turkish architectural periodicals under consideration, Commerzbank Tower in Frankfurt by Norman Foster, on the other hand, was built a few years later in 1997. These were mostly commercial high-rise buildings which rested on transnational finances. The path suggested by these names was built on a premise that environmental concerns in architecture could be addressed mainly through a building's performance. Thus, this "emphasis on the environmental efficiency of development" resulted in:

> a whole range of technological innovations in building fabric and servicing systems: translucent insulation, new types of glass and solar shading, intelligent facades, double-skin walls and roofs, and photovoltaics. Energy- efficient lighting, passive solar design and daylighting, the use of natural and mixed-mode ventilation, more efficient air conditioning and comfort cooling, combined with sophisticated energy management systems are all part of the High-Tech approach. (Guy & Farmer, 2001, p. 142)

2.3.2 Measuring "Greenness"

The researches and technological innovations were accompanied by the establishment of assessment methods, the first one being Building Research Establishment Environmental Assessment Method (BREEAM) in 1990. Eight years later in 1998, Leadership in Energy and Environmental Design (LEED) was formed by the US Green Building Council, as a "voluntary, consensus based, market-driven" energy efficiency rating system (Adam, 2012, p. 225). These analyses were based on a verifiable set of criteria and targets to measure a building's environmental performance. In time, many other countries begun to initiate their own systems and it has since been transforming from a voluntary activity supported by those transnational architects who define the economic and symbolic significance of green buildings to a regulatory requirement. The emphasis here was on minimizing energy use and maximizing energy production. In this approach a certain kind of agreement was assumed to exist in defining what environmental architecture was- one that was based on the criteria of objective findings and performance.

This approach which rested on the standards of more technology and management- that Marteen Hajer called "ecological modernization"(Hajer, 1995)- was also the basis of mainstream sustainable development. In that context, the rise of sustainability as an overarching theme in architecture coincided with an increasing interest in energy-efficiency and the quantification of the meaning of environmental architecture. For example, Joseph Huber defines "efficiency revolution" as the core of the industry's interpretation of sustainable development:

> Industry and business are looking for a strategy that would allow for further economic growth and ecological adaptation of industrial production at the same time. The means for achieving this goal is seen in the introduction of environmental management systems aimed at improving the environmental performance, i.e. improving the efficient use of material and energy, thus increasing resource productivity in addition to labour and capital productivity. (Huber, 2000, p. 269)

Similarly, in architecture energy-efficiency had become the main strategy of the economic dimension of environmental architecture. Thus, energy-efficiency begun to be increasingly discussed in terms of financial costs and benefits, with mainly three positive effects on the capital values of buildings: "improved working environment, reduced building operating cost and reduced facilities maintenance costs" (Gündoğan, 2012, p. 12).

Accordingly, "economic feasibility" developed into one of the main topics of environmental architecture that echoed in a wide range of studies or approaches. For example, one of the chapters of the *The Philosophy of Sustainable Design* was titled as "Green Economics" in which Jason McLennan tried to support sustainable design's economic argument: "Green design, when done properly, does not necessarily cost more and in some cases is less expensive than conventional construction" (McLennan, 2004b, p. 207).[24] Or, it was argued by Sandra Mendler et.all in *The Guidebook to Sustainable Design* that "it is increasingly clear that sustainable design improves the performance of buildings and increases user satisfaction and productivity. Sometimes overlooked is the fact that it *makes economic sense*" (Mendler, Odell, & Lazarus, 2006). Similarly, in 2007, in the introduction to the tenth anniversary of their book *Ecological Design*, Sim Van der Ryn and Stuart Cowan were detecting a shift in the discipline, yet this time they related it with systems approach:

> However, during the last ten years green buildings, renewable energy, sustainable infrastructure systems, and many other areas have made significant progress toward cost neutrality even within the narrowest comparison criteria. Systems approaches that connect project costs and benefits across multiple space and time scales, disciplines, departments, and budgets can further demonstrate the economic viability of ecological design. (Van der Ryn & Cowan, 1996, p. 12)

As one of the few books written on the subject in Turkish, *Sustainable Architecture* written by Ayşin Sev included a section titled "Economic Advantages of Sustainable Buildings" (Sürdürülebilir Yapıların Ekonoik Yararları): "One of the reasons of the rising interest in sustainable architecture is that sustainable structures provide economic benefits in the long run" (Sev, 2009, p. 32).

[24] "In the early days of the movement, sustainable design was almost always more expensive. Most design teams had minimal experience with sustainable strategies and the resolution of these ideas seemed to always cost more money and time. Green materials, such as they were, were always more expensive that their conventional counterparts due to smaller economies of scale, and the lack of competition within this new niche market willing to pay more because of ethical beliefs." (McLennan, 2004b, p. 196)

In overall, these examples were illustrative of the argument for the economic benefits of sustainability which had been increasingly incorporated into the discourse on environmental architecture ever since. The main contention against the economical dimension of environmental architecture was the first-cost constraints, and this was overcome with an emphasis on life-cycle economics. Thus, "the economy of green buildings" begun to be discussed increasingly alongside the operating and maintenance costs, periodic replacement and residual value. Because of the reduction on the long-term building operations and expenses, it was claimed, green buildings were presented as good business. Additionally, it was increasingly argued that energy-efficiency issues affected the commercial sales activity positively. For example, according to a study conducted in 2008 by Jonathan A. Wiley, Justin D. Benefield and Ken H. Johnson the data gathered indicated that ""green" buildings achieve superior rents and sustain significantly higher occupancy. The improved performance in the rental market is reflected in a significant premium for the selling price of Energy Star-labeled and LEED-certified properties"(Wiley, Benefield, & Johnson, 2010, p. 228). In fact, the studies arguing for the positive effects of energy-efficiency issues on the capital value of the buildings have multiplied significantly in recent years.[25] Accordingly, as it is argued in the book *Green Building: Guidebook for Sustainable Architecture*, investors are increasingly using sustainable aspects and green labels as arguments for rental and sale:

> since nowadays tenants base their decisions in part on energy and operating costs and are looking for materials that are in accordance with building ecology considerations. Green Buildings always offer a high comfort level and healthy indoor climate while banking on regenerative energies and resources that allow for energy and operating costs to be kept as low as possible. (Bauer, Mösle, & Schwarz, 2010, p. 11)

In overall, today improving the energy-efficiency of building processes have become a well-established and accepted goal of architecture. Yet, associating environmental architecture mainly with the issue of energy-efficiency also resulted in a reduction. For example, getting a LEED certificate has become the central indicator of an environmentally-conscious building. Yet, certificate systems analyze mainly the technical features of energy performance, as the cultural, social and aesthetical aspects of architecture were harder to define by numbers. In fact, here lies the main critique that

[25] Handan Gündoğan in her thessis "Motivators And Barrıers For Green Building Constructıon Market In Turkey" illustrates this tendency with further studies such as:
Chegut, A., Eichholtz, P., Kok, N. (2011). "The value of green buildings new evidence from the United Kingdom", Maastricht University, July 2011.
Fuerst, F., McAllister, P. (2010) "Green noise or green value? Measuring the price effects of environmental certification in commercial buildings", Real Estate Economics, 39, 1, 46-69.

is put forward against certificate systems: that they evaluate performance without taking into account social and economic issues.[26] For example, according to a study put forward by Sonay Aykan "Towards a Green Building Code in Turkey: Lessons from Leadership in Energy and Environmental Design (LEED)":

> system help understanding these limits. 35% of the all the points that are available in LEED (excluding innovation and regional priority credits) are allocated for energy conservation and renewable energy. This is followed by credits related to transportation (12%), efficient water use (10%), indoor air quality (9%), reuse or recycle (8%) and development density (5%).

Thus, a building concentrating solely on energy section can almost achieve the 40 points necessary to get a certificate. Against this criticism is a call for a "holistic approach" which utilizes triple-bottom-line principle (environmental, economic, and social) which have been reviewed under sustainable development. The solution, then, is to more effectively incorporate these dimensions into rating systems. The effectiveness of performance, or the environmental dimension is "evaluated based on the inputs (e.g. material, energy, water) and the outputs (e.g., emissions, effluents, waste) of the development process" (Said & Berger, 2012, pp. 5-6). This is the most established part of building rating systems. Economic effectiveness, on the other hand, "includes economic performance (e.g. generated economic value, financial risks), market presence (e.g. wage competitiveness, hiring and procurement), and indirect economic impacts (e.g. development of general infrastructure and services)" (Said & Berger, 2012). Social sustainability, on the other hand, includes:

> (1) Labour practices such as employment, labour relations, occupational hazard and safety, training, diversity, and equity;
> (2) Local community and societal impacts such as community service, corruption, public policy, and compliance;
> (3) Human rights such as non-discriminations, child labour, forced labour, and remediation; and
> (4) Product responsibility such as customer privacy, customer safety, and product services.[27](Initiative, 2011)

As expected, quantifying these items is much more intricate than the other two. More importantly, though, even if it is possible to calculate certain aspects of social

---

[26] "Inclusion of additional social and economic issues is an emerging trend in the development of BEAMs [8], although given the impact on productivity and quality of living, IEQ is clearly germane to the economic and social performance of buildings."(BURNETT, CHAU, & LEE, 2005)

[27] Global Reporting Initiative (GRI) (2011). Sustainability Reporting Guidelines, version 3.1., source: www.globalreporting.org, (Retrieved December 7, 2012).

effectiveness of buildings, this does not necessarily lead to a holistic analysis. This is so mainly because, this view does not take into consideration the relation of these domains, but implies that each sphere has an independent existence. In such an interpretation, "social, economic and environmental" become independent spheres which can be analyzed and prioritized over each other. What if the criteria of one of the spheres contradicted with the other, which in many cases is the condition an architect faces in practice?[28] These systems does not say much about the value judgments an architect has to face in the practice of building which contains both abstract and material dimensions. Energy-efficiency or the certificate systems, then, can be perceived –at best- as a "part" of the solution, in other words, only as means but not an end in environmental architecture.

[28] "So the triple bottom line approach to sustainability assessment oversimplifies. Depending on the epistemological standpoint, it also tends not to apply equal weight to all three silos. The liberal interpretation of sustainability inevitably focuses attention on economic factors, often at the expense of environment. The classic conflict between jobs and the environment more often than not results in economic development taking precedence with a degree of environmental compromise being applied. The recent wrangles over the Gorgon gas terminal on Barrow Island, Western Australia, a Class A Nature Reserve, provide current examples. But this conflict may also be played out at the local scale with large-scale suburban shopping developments receiving government support on the basis that they will bring much needed employment, while ignoring the loss of local services which flows from increased retail competition A third criticism suggests that social aspects are often underplayed. While the conflict between economic development and environmental protection is often highlighted in the media, the social isolation or health implications which result from poorly serviced large-scale suburban development receive little comment."(Davidson, Kellett, Wilson, & Pullen, 2012)

CHAPTER 3

THE RISE OF "ENVIRONMENT" AS A CENTRAL PROBLEMATIC IN TURKISH ARCHITECTURE

3.1 Between Development and Environment: 1970-1980

3.1.1 Structural Dimension of Environmental Problems

Starting with the 1950s, architecture in Turkey has entered a period of intense construction that lasted till the end of 1970s. This was accompanied by an increase in the number of engineers and architects. Hence, the Chamber of Architects soon became one of the most broad-based professional organizations of the country, and it necessitated a periodical providing the medium of communication between the chamber and Turkish architects. *Mimarlık,* as the publication organ of Chamber of Architects, was initiated to serve to that end in 1963, alongside the objective of the legitimizing the profession.[29] To that end, professional politics and technical problems dominated the subject matter of the publication in this period, and intellectual concerns and theoretical studies were largely absent (Özdel, 2001, p. 30). Within that context, neither environmental problems nor environmental issues in architecture had found much reflection in the periodical. For the period between 1963 and 1970, the closest any article approached to issues related with environmental architecture, were on the topics of day lightning or solar control. These subjects were relevant for the discussions taking place in environmental architecture. Yet, their treatment was quite different from their counterparts in contemporary discussions. For example, very little importance was placed on the energy conservation aspect of solar energy.

In that respect, the first issue which entered the periodical was environmental pollution, especially air pollution, caused by urbanization. By then, environmental movement had already begun to gain acceptance in countries like America and Britain.

[29] The degree of dependency of the relation between the editing committee of the periodical and the administrative body of the Chamber of Architects was not static and changed over time. The contents and the approach of the periodical was affected from the nature of this relation.

On April 22, 1970 approximately 20 million Americans participated in a national protest against environmental deterioration on the first Earth Day. In Turkey, though, interest in environmental issues was relatively weak, and the voices that criticized environmental policies hardly constituted a movement. Nevertheless, with the 1970s a certain kind of mobilization was also observed in Turkey and organizations that gathered around environmental issues begun to appear. One of the first examples was "Ankara Struggle against Air Pollution Association" that was founded in 1969. This was followed by "Environmental Protection and Greenification Association" in 1972, the "Society for the Protection of Nature" in 1975 and the "Environment Foundation of Turkey" in 1978 (İçöz, 2012, p. 71) .

Rather than a direct influence, the popularization of the environmental issues entered the periodical through the severe effects of air pollution in Ankara. This was not surprising, because it was a visible and disturbing problem experienced in major cities. "Air Pollution Problem in our City, Ankara" (Şehrimizdeki Hava Kirlenmesi Olayı ve Ankara) written by Remin Biler in 1970, was the first examples to this topic. In this article, biological mechanisms leading to pollution, its effects on human health and the causes of air pollution in cities were briefly mentioned. The tone of this article was more like a description of the situation, and less like a critical analysis. Biler recognized that environmental problems were a reflection of our own actions, but he stayed indifferent as to the underlying causes or the nature of those actions. Pollution was not yet recognized as a structural problem, but was perceived as a problem that could be fixed by using corrective measures.

With the early 1970s the attitude of *Mimarlık* had begun to change in accordance with the shift that took place in architecture in general. As architects started to take active roles both in political issues and social projects, the discourse dominating the journal has also became more political and less technical. In the previous decade, articles and studies related with political matters were lacking in the periodical. For example, Hulusi Güngor- the founder of *Mimarlık*- defined the aim of the periodical in those first years as "preventing politics from entering the journal as much as possible".[30]

[30] In 1984, Hulusi Güngor –the first editor of *Mimarlık*- defines the journals relationship between architecture and politics as: "Bizim görev yaptığımız dönemlerde en büyük çabamız, dergiye mümkün olduğu kadar siyaseti sokmamaktı. Buna çok özen gösterdik. Şüphesiz toplumun bir kesimi olarak her mimar birbirinden farklı olabilecek siyasi görüşlere sahiptir. Buna toplumca hepimiz saygılıyız. Ama bu görüşlerin herhangi bir vesileyle dergide, Mimarlık Dergisi'nde yansıtılması, dergiye siyasi bir hava verme tehlikesi yaratır." ("Söyleşi: 1963'ten Bu Yana Mimarlık," 1984, p. 22)

However, 1970s has witnessed a politically engaged atmosphere in which a left wing architectural criticism has emerged and entered the publication. This was certainly related with the changing attitudes of the administration of the Chamber of Architects, and *Mimarlık* became the political voice of that understanding.[31] The incorporation of the environmental issues into the periodical had also changed accordingly, in which the political dimension of the international environmentalism became the main focus of attention.

There were two significant articles in that respect: first was a translation of Brazilian Ambassador Miguel Ozorio's talk in Almedia and second was a discussion presented by İlhan Tekeli under the title of "Çevre Sorunları ile İlgili Uluslararası Politika Önerileri ve Geri Kalmış Ülkelerin Kalkınmasına Olabilecek Etkileri". Both these articles were revolving around the developments that took place in international environmental politics that seemed to climax with "1972 United Nations Conference on the Human Environment" taking place in Stockholm, Sweden. And, they both reflected the conflict between economic growth and environmental considerations.

Ozorio's speech was titled "Stockholm Conference on Environmental Problems and Develoing Countires" (Stokholm Çevre Sorunları Konferansı ve Gelişmekte Olan Ülkeler), and it was given right before the conference. Already before the Stockholm Conference, relations between developing and industrialized countries had become a contentious topic of discussion. The developing countries felt that the conference was oriented towards the interests of the wealthier countries, and Ozorio's article was reflection of this preoccupation. To him, the main polluters of nature were developed and industrialized countries, whereas developing countries contributed very little to environmental degradation.[32] The real conflict between developed and developing countries, however, resulted from the environmental limits to economic growth and development suggested by these discourses. According to Ozorio, environmental problems of the developing countries were resulting from poverty, and therefore should

[31] This transition could be clearly followed in the discussions done in honour of the tenth publication year of Mimarlık, compiled under the title of "Mimarlık 10. Yayın Yılını Doldurdu".("Mimarlık Onuncu yılını Doldurdu," 1973)

[32] Yet, the globalization of the environmental discourses created an atmosphere in which both these parties were treated as if they had the same effect on the planet. Ozorio claimed that this rhetoric of a single planet facing a shared problem that was justified mostly by natural sciences and that they should be questioned. He was sceptical about the extent of environmental problems which he thought was a dramatization, and criticized the role of science in creating this sense of crisis.

be discussed within the framework of development. Population control and limits to economic development that were suggested by the Stockholm Conference were in the interest of industrialized countries, but was unacceptable for others. Thus, claimed Ozorio, Stockholm Conference has become the platform that guarantees the continuation of the advantages of those countries which already consume most of earth's resources.

1972 Stockholm Conference, nevertheless, managed to reach a level of agreement and established a Declaration of Principles. Yet, more important was the creation of the United Nations Environment Programme (UNEP). In many sources, as well as the architectural periodicals I have reviewed that are written after 2000, this event is claimed to be the moment with which the necessary institutional arrangements for international cooperation were established and the international environmental politics has accelerated. Yet, what is missing in many of the articles I have reviewed is that 1972 Stockholm Conference was also an important turning point in the development of Turkish environmental politics. Turkey also attended this conference and was influenced by the developments in international politics, and begun to initiate its own national policies with regard to environmental issues in Turkey. After the conference national policies begun to be developed to conserve environmental resources, and also, to prevent environmental degradation. One of the consequences was that a component on environmental issues was incorporated into the third Five-Year Plan (1973-1977). This was the first time when environment and environmental problems were mentioned in a development plan. As we have seen, one of the main discussion subjects of Stockholm Conference was the conflict between environmental protection and economic prosperity, especially between developed and developing countries. A similar argument was also evident in the third Five-Year Plan: primacy was given to industrialization and development, and only those environmental policies that would not interfere with those goals were declared acceptable (Akbayır, 2010, p. 76).[33]

This was indicative of the dominancy of the idea of development in Turkey in that time period. According to Murat Arsel, for any environmental movement to be successful in Turkey, it had "to clearly articulate its commitment to a type of developmental agenda that continues to serve the goal of national progress"(Arsel,

[33] And, later in 1978 organization at the state level continued with the formation of the Undersecretariat of Environment.

2005, p. 31). He also claimed that in the case of Turkey this argument went beyond the difficulty of reconciling economic growth and environmental protection, because for Turkey the goal for economic growth was not simply accumulation for its own sake. Rather, it was seen as "a tool for the achievement of societal progress" and a part of civilization agenda (Arsel, 2005, p. 31). Thus, in many cases the need to direct criticism towards economic growth was prohibited. According to Arsel, it is necessary to differentiate environmental politics in Turkey from Western Europe, where calls towards "small is beautiful" or "steady state economics" did had more currency. The challenge of environmental in Turkey, he claimed "is the creation of an agenda of "reflexive developmentalism" that wears its emancipatory commitment to economic growth and on its sleeve while arguing for more environmentally sensitive practices" (Arsel, 2005, p. 31). As against this background, it is possible to claim that the interpretation of environmentalism throughout the 1970s in Turkish architectural periodicals displayed a similar tendency to that of Arsel's statement, with little attention given to environmental degradation.

In this respect, İlhan Tekeli's article was quite significant for its period, because it clearly indicated this tension. The text introduced some of the key events from that period, such as Stockholm Conference or the publication of *Limits to Growth*, and presented some of the basic arguments and concepts of environmentalism to the readers of the periodical. He shared Ozorio's sceptical view of the 1972 Stockholm Conference as he echoed the general tension between developing and developed countries which continued throughout the conference. Tekeli recognized the Conference as a political construction and was concerned with its implication for developing countries in which Turkey was included. To begin with, while the degradation of the environment in wealthy countries was mainly a result of their development model, in developing countries it was a consequence of underdevelopment and poverty. Tekeli claimed that this statement should be supported with an analysis of the social structure in which the patterns of production and consumption result with environmental degradation. Consequently, the solutions proposed should depend on the specific characteristics of the social structure of that political unit. So asked Tekeli, why do we need an international environmental movement given the fact that environmental problems differed considerably according to the developmental state of countries.

The answer, according to Tekeli, was related with the interests of the industrialized countries, rather than with the environmental wellbeing of the earth in

general. The measures to solve environmental problems would have increased the costs of exports between %2-20, which meant that the countries accepting these measures would face loss of market. However, implementing these procedures together indicated that the market share loss would be relatively lower for industrial countries. Secondly, rapidly increasing production of developed countries increased their dependency of foreign sources of raw materials. In that respect, participation of developing countries to the conference was a political undertaking of industrial countries to increase their level of intervention in their resources.

In overall, there were two important implications of these articles by Ozorio and Tekeli: first was pointing towards the conflict between economic growth and environmental protection, which still continues to be one of the main questions of environmental architecture; and the second was indicating a shift in the understanding of environmental problems from a domestic issue to a global one of environmental crisis. The first point emphasized the distinction between developing and developed nations. In that context, the global cooperation, as one of the main mechanisms of international environmental management, was approached with caution. Environmental problems were not perceived as an important focus of political resistance when compared with the more pressing issues of poverty, energy needs or natural resource management.

The second point, on the other hand, revealed itself in the second article written on the subject of air pollution in 1977 in *Mimarlık*. Although the subject of this essay- that was written by Nahit Öztürkcan and Abdullah Tunçel, and titled "Air pollution in Ankara" (Ankara'da Hava Kirlenmesi)- was very similar to Biler' article, its treatment of environmental problems was closer to Tekeli's critique of the globalization of environmental movement, and its implications for underdeveloped countries. The article started with an emphasis on the international dimension of the environmental pollution in recent years, and continued with its critique: "By bringing the environmental problems to the international level, developed countries are placing the cost of the environmental solutions to underdeveloped countries and their own people" (Öztürkcan & Tunçel, 1977). Here, the technical dimension of solving the environmental problems were seen as secondary when compared to the social and political dimensions. In accordance with the political tendencies of that era, authors claimed that, cannot be a modification of certain aspects of the situation, but necessitates a change in the structure of the system:

> It is clear that it is impossible to make a revision in any constituent of the holistic economic systems without changing the unity of the system with its politics, social structure, and laws. For this reason, the solutions proposed for environmental pollution in general, and for air pollution specific to Ankara, should indicate changes in the structure of the system. (Öztürkcan & Tunçel, 1977)

Taken as a whole, it is possible to claim that for the articles published in *Mimarlık* until 1980, environmental problems were seen as the side effect of a certain structural framework, specifically an extension of the capitalist system of production. Thus, for a solution to be effective it must have suggested a change in social structure. Environmentalism, on the other hand, was not perceived as a new field of struggle that would have the potential to challenge the existing ideologies. Lost in such an interpretation, however, was the initial critiques put forward by environmentalism towards issues such as technology or human-nature relations. As a result, throughout this period *Mimarlık*, displayed a critical tone about the emergence of a global environmental movement. In fact, the emergence of such rhetoric was considered as being problematic- mainly because of the challenge of finding a balance between the need of being industrialized to continue development, and to preserve and improve environmental values.

3.1.2 Introducing Variety: Environmentalism as a Fragmented Whole

The articles published in the periodical *Yapı* in this time period, instead, were harder to follow in terms of presenting a common attitude towards environmental changes. This was, in part, related with the difference between these two periodicals in terms of their structure. *Mimarlık* was the publication organ of Chamber of Architects and had taken the enhancement of the politics of the professional sphere as its main objective. *Yapı*, on the other hand, was the publication organ of the Yapı- Endüstri Merkezi (Building- Industry Centre) that was instituted in 1968 with the aim of creating an information-flow between producer, constructor and user in the field of construction. Doğan Hasol defined the main objectives of YEM as: “to organize exhibitions of building materials; carry on and support researches and experiments in the field of construction; provide the gathering, development and distribution of information on construction; offer the services of technical consultation and control and publish and sell books related to architecture and building industry”(Özdel, 1999, p. 72). One of the most important themes shaping the architectural agenda of Turkey in the 1960s was the

influence of industrialization on the building industry. YEM can be considered as a reflection of this orientation as it focused on issues such as building industry, prefabrication and the industry of construction materials. In 1973, *Yapı* started its first publication as an extension of this institution. Yet, *Yapı* has never been a solely specialized periodical in construction, but incorporated subjects from the fields of art, design and planning. What it shared with YEM was more about the way both perceived knowledge, as an objective medium that can be transferred to the readers as in a straight flow of information.[34]

As analysed by İlker Özdel in his thesis "Architectural Periodicals as a Reflective Medium of Agenda", the majority of the articles written in *Yapı* were written by academicians (Özdel, 1999, p. 74). As he claimed, this academic approach was a continuation of the sensibilities of the periodical *Mimarlık ve Sanat,* which was also published by Doğan Hasol in collobaration with Bülent Özer. Yeşim Alemdar shares a similar view in her thesis "A Transformative Relationship between Architecture and Architectural Media: Turkish Media After 1980" that the essays published in *Yapı* displayed an academic position. Apart from the deliberate choice of Hasol, this orientation was also marked by the general atmosphere of the period in which *Yapı* started its publication. As we have seen earlier, starting from the mid-70s academic production and the importance given to theory and criticism increased in the field of Turkish architecture. *Yapı* started its publication in such an agenda and this was reflected in the articles written by academicians (Özdel, 1999, p. 74).

Based on this brief reconsideration, it can be claimed that *Yapı* was representing the tendencies of both the building industry and the academic circle. In addition, as a periodical it seek to incorporate subjects from the differing fields such as art, industrial design and planning. As a result, when compared with *Mimarlık* the articles published in *Yapı* in relation to the subject of this thesis featured more variety, both in terms of the subjects selected and the positions taken by the authors. For example, there was one article discussing the subject in relation to a relatively new profession, that of industrial design: Önder Küçükerman's "Man, Environment and the Future of "Industrial Design"

[34] Right from the start, *Yapı* covered a large scope of issues from technical and economic ones to art discussions. For example, industrial design held an important place in the periodical. Also of importance was the 'News' (Haberler) section through which information about the profession from events and competitions to architectural materials and systems were communicated. With its consistency, in time, this section begun to occupy a large portion of the periodical and it became one of its distinguishing features.

(İnsan. Çevre ve 'Endüstri Tasarımı Olgusu'nun Geleceği).[35] Or, there was a section of student proposals which revealed an interest in environmental psychology and systemic approaches, issues which were not related with the "phenomenon of environment" in *Mimarlık*. Apart from these, however, the conflict between development and environment continued to shape the discussions, and since Turkey was considered to be a developing country this tension was even more significant.

One such article was published in 1974 under the title of "Future Anxiety" (Gelecek Kaygısı). Although this text had taken a rather diverse approach towards the development and environment relations, was nevertheless built upon this distinction. In this text, Engin Yenal followed a similar directory to that of "Club of Rome"'s *Limits to Growth*, as he put forward the consequences of exponential growth from population growth to energy consumption, climate change, developments in scientific technologies, and increase in built environment. In that respect, this was one of the earliest examples to what John Dryzek had categorized in his book *The Politics of the Earth: Environmental Discourses* as "survivalist discourse". This discourse, which has been reviewed in the earlier chapters, rested on the popular acceptance of earth's limited resources and carrying capacities, thus questioned limitless growth. Yet, it had also been criticized for it had suggested a path towards administrative control and scientific management (Dryzek, 1997). Echoing the apocalyptic predictions of *Limits to Growth,* Yenal mentioned "end of the world" scenarios: starvation, scarceness, plague, air pollution that would lead to an overshoot and collapse. The solution he proposed was also in line with the report, especially with its policy prescriptions: "The control, reduction or at least suspending both the industries and the increase of world population between the years of 1975 until 1990 seems to be the most effective solution". Yet, this answer was too vague to suggest any hints as how to implement these precautions. As

[35] Although he declared that "balance- harmony and unity were among the most important and sensitive points in the relation between humans, design and environment", in overall the article was more about discussing the legitimacy of the profession, emphasizing the importance of human factor in industrial design and suggesting ideas about its future. 'Environment', in that respect, was more like the totality of artefacts industrial designer had designed rather than a dissociated entity in which the act of designing was happening. Thus, within the text the phrase "environmental and industrial designer" appeared frequently, suggesting that industrial designers were at the same time active participants in the construction of the environment. At the end of the article Küçükerman asked, "So, what is the biggest problem the future designer will confront in the establishment of the environment?". It is defining a balanced and valued relationship between industrial products and humans. The ecological responsibility of the design practice was, on the other hand, largely absent from the argument. In that respect, the importance of this article comes mostly for being one of the earliest arguments relating environmental issues with the field of industrial design in an architectural periodical.

he claimed, constituting management and control mechanisms over countries would bring many political conflicts, especially between developed and developing countries. The most effective answer, then, would be to search for new natural resources. In the rest of the article, Yenal analysed in depth the potential of seas as new energy sources. The important point, however, was that survivalist discourse had formed the basis of the discourse on "environmental crisis", which as we will see in the following sections had framed the environment as an urgent concern. This urgent concern, in return, implied shared values and common interests for architecture. It operated as an "inclusionary device"(Hajer, 1995, p. 20) which constituted architects as crucial members of a new and all inclusive "risk community".

Another article working along the lines of development and environment conflict was written by Haydar Karabey in 1977 as part of his doctoral dissertation studies with a title: "Questioning of Environmental Problems in terms of our Country and the Role of Science" (Çevre Sorunlarının Ülkemiz Açısından İrdelenmesi ve Bilimin Görevi). This text, however, extensively criticized *Limits to Growth*, defined "Club of Rome" as "representatives of monopoly capital" (tekelci sermayenin kesin temsilcileri) and defined the publication "as a disincentive trap that would destruct the development efforts of those poorer countries so that they would continue to serve as a source of cheap labor and raw materials within this existing world economic system". In that respect, this article was in accordance with the discussions put forward in *Mimarlık* earlier, in that it claimed the question regarding environment to be one of "primarily an economic and political problem because it rested on the production-consumption relations".

Built upon this two opposing interpretations of environmental problems, the last article on the subject was illustrative of the complexity of the argument and presented the general outlook of the themes shaping the discourse on environment both in national and international circles in this time period. Just few months after the publication of *Limits to Growth*, and United Nations Conference on Human Environment in Stockholm, a public debate was organized in Paris by the newspaper *Le Nouvel Observateur* on economic growth versus zero-growth. Led by Sicco Mansholt as the European Commission president, this meeting was attended by figures such as eco-philosopher André Gorz (with his other pseudonym, Michel Bosquet), German sociologist Herbert Marcuse, philosopher Edgar Morin, ecologist Edward Goldsmith (who had published *Blueprint for Survival*), and Edmond Maire (a trade-unionist). *Le*

Nouvel Observateur had published some of parts of this meeting in 1973, and in 1977 it was translated to Turkish in *Yapı*. What this text revealed was that, global environmental problems were yet to be constructed as there was not talk of issues such as ozone depletion, greenhouse effect or climate change. Rather, as observed by ecologist Joan Martinez-Alier, it was "the subject of limited resources …along with population growth, the absurdity of macroeconomic accounting of the GDP, happiness, capitalism, socialism, militarism, technology and complexity" that dominated the meeting (Marrero, 2011). Thus, in this time period, although environment had emerged as a semi-independent field of attention, the main axis was towards a critique of the process of modernization. Consequently, the meeting had revolved around issues such as "the class character of the ecology movement, a critique of Cartesian modernity and the growing importance of complexities and uncertainties" alongside "critiques of militarism, specifically denouncing the Vietnam War and French nuclear testing in the Pacific Ocean" (Marrero, 2011).

3.1.3 Economic Constraints as a Catalyst

The petroleum crises of 1973 and 1979 stand out as milestones in the history of environmental architecture, as well as in the emphasis given to energy issues in architecture in general. For the Western world, the first crisis took place in 1973, when the Organization of Petroleum Exporting Countries (OPEC) imposed an oil embargo against Western nations, reducing oil exports to some nations and banning it completely from others. The embargo resulted in a series of increases in the price of oil, which was directly reflected on the daily lives of the population.(Melchert, 2007, p. 894) The economic, political and social consequences triggered by this crisis have revealed a bias towards energy, with an increasing interest in "energy efficiency, solar technologies, retrofitting homes and commercial buildings with insulation, and energy recovery systems"(Kibert, 2004, p. 497) in architecture. Initially a minority interest, approaching the 1980s many of the issues researched in these early years gained more public attention. The researches on the active and passive solar technologies, improvements in insulation, explorations on building materials, advances in wind power and experiments on earth shelter buildings were all initiated in this period, and were later integrated into

the mainstream architectural practice. In fact, the research and innovations done in these years are still relevant for contemporary green debates in architecture.

In Turkey, solar energy was realized as an alternative energy source mainly in the early 1960s, and mostly through the interest of "some curious researchers and dissertation Students". Arif Hepbasli And Önder Özgener define this process as: "In the mid-1970s, following technological developments in the world, solar thermal utilization technologies began gaining high attention of universities, the government, and the industry, and have been developed in an increasing rate" (Hepbaşlı & Özgener, 2004, p. 966). Consequently, the first national congress on solar energy was performed in 1975 in İzmir, and in the same year the first passive solar system was applied in Middle East Technical University. In fact solar houses built by institutions were the most evident reflection of these tendencies. Between 1975 and 1981 four solar houses were built, and when compared with the overall number of solar projects held in Turkey this number becomes significant. These projects were:

1975-1976- Middle East Technical University Solar House, Ankara.

1977- Marmaris MTA (Mineral Research and Exploration Center of Turkey) Solar Energy Laboratory, Muğla.

1978- Ege University Solar Energy Institute, İzmir.

1981- Çukurova University Solar House, Adana.

As can be followed, in these years the solar houses were mostly in the interest of universities, which indicated the relation of energy-efficiency issues with the rise of "architectural research" as a "prominent and complementary factor in architectural scholarship of Turkey" starting from the late 1970s. According to Tonguç Akış, as he put forward in his dissertation "Teaching/ Forming/ Framing a Scientifically Oriented Architecture in Turkey", this shift emphasized the interactions between scientific methods and architectural production. Although, the practical implementations of this route were rather weak in Turkey, they nevertheless found reflections in the individual efforts of certain scholars (Akış, p. 134). Solar houses built by institutions were an important part of that discourse and important efforts in the establishment of energy efficiency issues in architecture. These buildings were designed to test active and passive control of solar energy and calculate thermal performance. In other words, these researches were based on scientific methods and utilized technical concepts that led to quantification of buildings. Thus, the close ties of energy-efficiency with scientific

orientation in architecture were evident in the inception of these issues in Turkish architectural agenda.

In the Turkish architectural periodicals under examination, however, the reflections of this orientation in architecture was rather limited. The international development in the field were also absent from the periodicals. The earliest examples of contemporary environmental architecture are considered by many to have evolved in the 1970s through small scale experiments pioneered by a number of idealists, ranging from new innovations in geodesic domes to self-built houses of recycled materials to vernacular building techniques of adobe and straw bale to self-sufficient solar houses. This brand of building processes, for example, was totally lacking from the articles under consideration. One of the only articles on the subject of energy-efficiency was published in 1976 in *Mimarlık*, and it was a translation of a one-page review of a zero-energy house built in Denmark. In this review, some of the basic methods and appliances of energy savings such as the insulation of buildings and hot water cylinders and the condensation of boilers were introduced to the readers of the magazine, but they had no impact on the succeeding years.

For the Turkish architectural periodicals the real catalyzers of the energy issues were the two oil crisis. For example, the first article on the subject was published in *Yapı* just one year after the first oil crisis, and it was titled "Petrol Crisis and our Buildings"(Petrol Bunalımı ve Yapılarımız) (Hasol, 1974). Written as a direct response to the rising price of oil, Doğan Hasol exclusively questioned the economical dimension of this issue for Turkey. As a developing country, he claimed, Turkey's need for energy was rapidly increasing whereas its dependency on the import of energy was increasing. Emphasizing the importance of this issue, he then directed the discussion in the last paragraphs to the measures that were to be taken in the construction and management of buildings. According to Hasol, the most important problem was related with the heating of buildings. The basic strategies that architects could utilize in decreasing the energy need was a careful planning of the siting, orientation, massing of buildings, as well as a consideration for the building envelope. In principle, these have continued to be basic parameters of energy-efficient buildings, although their treatments in this article were very generalistic when compared with the preceding examples in the 1990s. In the last paragraph, Hasol also mentioned the inefficiency of building standards in Turkey, which continues to be an important dynamic in the discourse on energy-efficiency. Lacking in

this article, however, was an understanding on the environmental underpinnings of this discussion as it was mainly the economical dimensions that were mentioned.

The second energy crisis that took place in 1979 also had huge effects both on economy and energy production of Turkey. As illustrated by Osman Yılmaz and Tuncay Uslu, at the end of 1977, import dependency of Turkey in energy was 50% (Osman Yılmaz & Uslu, 2007). Thus, an increase in energy costs brought about economic difficulties and energy crisis became an important theme of country politics. Remarkably, the subject matter of the only issue that was published in 1980 in *Mimarlık* was "energy crisis". In the winter of 1980, the daily life of the many citizens living in the cities in the colder regions was affected as the government had difficulties in supplying the energy needed. Güven Birkan depicted the life in the cities of 1980 winter as:

> The people in the cities, especially in cold regions, faced incredibly hard conditions. The schools were suspended, hospitals were evacuated, and the working hours of the government offices were sometimes reduced to half. Centrally heated apartments, especially those with liquid fuel, were left without fuel for months. The people living in those buildings tried to warm up with heating stoves, but either there were no chimneys or they were not working.(Birkan, 1980, p. 16)

Because these events were closely connected with daily life, they initiated a stronger public response, indicating not only the scarcity of resources but also their reflections in social system. In these circumstances, questioning of the role of built environment in energy consumption became inevitable, and *Mimarlık's* this issue was a response to that. The introductory article of this folder was written by the publication committee of the periodical, and can be accepted to reflect the attitude of the Chamber of Architects in this matter. The writers were careful to build up an argument that would go beyond that of mere energy efficiency. They stated that energy problems were "multifaceted problems", and even if we, as architects, were to focus on the built environment we nevertheless had to comprehend them with their complex realizations in social life. So they claimed, the problem is not simply about increasing the efficiency of energy consumption or finding alternative resources, but the real challenge is in eliminating the "hegemonic relations" that exist within the problematic of energy in the first place. In such a line of argument, solar energy without its social preferences does not hold any a priori precedence. On the contrary, it gains significance as an alternative energy resource only when it becomes part of the struggle to achieve a certain- they call

'the desired'- life style. Thus, a call for alternative resources should be in harmony and synchronization with the social movements related with the other arenas of life.

According to the writers, the discussions presented by "environmentalists" provided an appropriate ground for approaching the issue of energy problems. Environmentalists questioned the ideological concepts such as 'growth' and 'development', and thus opened the ground for discussing the principles of organization and formation of life in the society that they wanted. In general, the framework created in this introductory essay called for a critical questioning of the basic values and practices of the society, and in that respect reflected the general attitude of the *Mimarlık* in those years- an attitude that we have reviewed in the previous chapters.

The only article of the folder which echoed the emphasis of the editors on the relation between energy crisis and hegemonic relations was from a paper presented in a seminar held in Greece in 1980 by Güven Birkan. This was not surprising since Birkan was representing the Union of Chambers of Turkish Engineers and Architects, and his approach in certain ways coincided with the editors of *Mimarlık*. In the article, "What to do in Buildings In the Face of Energy Shortages?" ("Yapılarda Enerji Kıtlığı Karşısında Ne Yapılabilir?"), Birkan built an argument on the energy problems of the Turkey's existing building stock. The article started by distinguishing the western nations from the rest of the world in terms of their consumption patterns, which in many ways resembled the arguments presented in the previous decade in *Mimarlık* around the discourse on environmental problems. Western life style, he claimed, consumes more which will affect the future generations, as well as being a heavy burden on poorer parts of those nations and less-developed countries of the world today. Within the capitalist world system, he considered Turkey to be one of those less-developed (geri bıraktırılmış) countries. So, while she had the potential to meet her energy demand she was forced to depend on import energy sources.[36]

[36] Birkan then continued with a critical review of the built environment in Turkey, and claimed that much was needed to be done in terms of increasing energy efficiency. Yet, he claimed the government was not taking the necessary precautions, and the regulations were not being implemented. Thus he claimed: "in a capitalist world system, for underdeveloped countries like Turkey, there can be no short-term solutions. When the energy policy of the country is not based on its own natural resources, when the production of buildings and building materials are left to market economy, when the capacity of the technical personnel is not brought into the service of public, it is impossible to solve these kinds of problems, even partially. This does not mean that the public cannot demand concrete precautions from the political authorities. But, the most important thing to be done is to inform the public that this is, in reality, a problem of the economic system."

Emphasizing the conflict between developed and developing countries and discussing the problem of energy within the context of hegemonic relations were a continuation of political attitude of the periodical in that time period. The following articles of this issue, on the other hand, did not maintain this motivation, but searched for, as the previous articles called, "modifications in the existing system". They remained within the problematic of legislations and standards while discussing the materialization of built environment. These were in accordance with the transformations taking place in the international agenda. Approaching the 1980s, both in Europe and the United States, building legislations became an important topic of architectural discussion that resulted in higher standards for insulation. The intensity and the implementation of these debates on legislations for energy efficiency were not that well developed in Turkey, but nevertheless -as the articles reveal- they found reflection. In Turkey, the first standard about energy conservation was published in 1970: TS 825 "The Regulations for Preservations from the Heat Effects on Buildings (Binalarda Isı Etkilerinden Korunma Kuralları)". Then the first revision has been made in 1979 and the title has been changed to TS 825 "The Regulation for Thermal Insulation of the Buildings" (Binalarda Isı Yalıtım Kuralları) (Kalaycıoğlu, 2010).

The following two articles was built along these lines and tried to reveal the defects and inefficiencies of these regulations so that appropriate measures could be taken to increase energy efficiency of buildings. For example, for Eşher Berköz and Zerrin Yılmaz, it was mostly about minimizing the environmental impacts of buildings as they evaluated "Ministry of Energy and Natural Resources' Code on the Economization and Reduction of Air Pollution in Heating and Steam Plants" ("Enerji Ve Tabii Kaynaklar Bakanliği'nin Isitma Ve Buhar Tesislerinde Ekonomi Sağlanmasi Ve Hava Kirliliğinin Azaltilmasi Yönetmeliği"). Another very similar article was written by Nazlı Aksoy, in which the "Istanbul Municipality Building Code" (Istanbul Belediyesi Imar Yönetmeliği'nin 3.14-A Maddesi) was evaluated and criticized according to the solar gain standards.[37]

Like many of the governmental policies written on the subject in that time period, inherent in both these articles were a passive attitude to energy efficiency rather than a

[37] Actually the history of governmental policies with regard to energy-efficiency goes back to 1970 with a standard titled "TS 825 - Conservation Rules of Heat Effects for Buildings". This regulation covered the insulation of the new buildings and the retrofitting of the existing building stock, and it was revised in 1979 in terms of decreasing the U values of the building envelope.(Edis & Türkeri, 2012, p. 135)

more fundamental search for reconsidering the building processes.[38] In that respect, they diverged from the initial aims of the editors, but nevertheless exemplified an influential dimension of energy-efficiency: legislations. Accompanying this shift in the international agenda of architecture was the development of energy efficient products and technologies, a path which still continues and dominates the field of environmental architecture. The last article of the folder, titled as "Criteria for Flat Collectors" ("Düz Toplayıcı Kriterleri), is an example of that which presented a technical argument on the principles of sun collectors and introduced some basic information for their applications.

3.2 Constructing the "Environment" As a Problem: 1981-1984

The period starting with the 1980's was a period of immense social, cultural and economic transformations that also had huge effects on Turkish architectural periodicals. The events taking place in the first years of this decade had long-lasting consequences, which I will refer to continually throughout this chapter. However, in the early 1980s- especially during the1980 Military intervention that lasted until the general elections of November 1983- some of these effects were not yet that visible in architectural periodicals. For example, the effects of the economic restructuring initiated by Turgut Özal government that led into a free market economy was perceivable only in the second half of the 1980s, as an increase in the number of architectural periodicals as well as a transformation in the content. For these early years, on the other hand, the most evident result was a decrease in the number of publications. First of all, the economic crisis of late 1970s and early 1980s forced many architectural periodicals to stop their publications. Among them were the periodicals *Çevre* and *Mimar*, as well as *Arkitekt* that stopped circulating after fifty years of maintaining a constant publication. What started with the economic crisis was reinforced with the Military Coup and the political atmosphere it had created. Many more architectural periodicals had to stop publishing because of political and ideological reasons. In that respect, "1980s constituted an important threshold also for the continuity of architectural periodicals"

[38] Writing in 1996 John Farmer was claiming mainly for the Western world that: "This passive approach to energy conservation rather than a radical approach to rethinking building design and production is still the main thrust of governmental policies". (J. Farmer, 1996, p. 172)

(Özdel, 1999, p. 79). For example, with the foundation of YÖK, university based academic periodicals experienced a period of interruption: "Ege Üniversitesi Mimarlık Fakultesi Dergisi" stopped its publication in 1980, and was followed by "İstanbul Teknik Üniversitesi Mimarlık Fakultesi Şehircilik Enstitüsü Dergisi" in 1981, and "Karadeniz Teknik Üniversitesi Mimarlık Fakultesi Şehircilik Enstitüsü Dergisi" in 1982. The financial constraints also affected the importation of foreign architectural publications, and the intellectual environment of architecture has entered to -what Uğur Tanyeli has labelled as- the most uncoloured period from 1980 to 1983 (Tanyeli, 1998, p. 45).

In this atmosphere, *Mimarlık* as the publication of Chamber of Architects was also forced to stop its circulation by the authorities of the Military Coup.[39] Yet, when *Mimarlık* resumed its publication in 1981, the political attitude of the previous decade was partly abandoned and opened to criticism. According to some, the publication committee was too much involved with the problems of the country, and they were not distinguishing between the politics of the country and the profession. That gap was filled with an emphasis on theoretical studies (Tanyeli, 2001, p. 36). This was also related with the processes taking place in the architectural agenda in the world in general. Starting with the 1970s the number and the variety of the architectural periodicals have increased significantly. This change in quantity was accompanied by a transformation of the content and theoretical literature and criticism begun to dominate these publications.[40] "1979-1984" can be considered as a transition period for *Mimarlık* that can be defined by a 'questioning' and 'interrogative' understanding. İhsan Bilgin defines their aim in 1980s as:

> We thought that to present this vivid discussions and intellectual summation—which are very similar to the ones at the beginning of the century—to Turkish society of architecture shall breathe new life into the professional milieu. Surely the other dangers could be an unconscious adoption to these new frames without filtering them critically, and an immediate engagement to these new discourses, and styles. However, according to us, to display this summation, and to question and re-evaluate the frames and concepts that we have used and recognized unhesitatingly all along the line provide an opportunity to revive

[39] Remarkably, the subject matter of the only issue that was published in 1980 in Mimarlık was "energy crisis". This was a reflection of the petroleum crises of 1973 and 1979, which had huge effects both on economy and energy production. I will return to this folder under the chapter of "energy-efficiency".

[40] According to Kate Nesbitt this can be seen as a response to the Oil embargo and energy crisis of the early 1970s, in which the building activity has slowed almost to nonexistent. "The lack of work on the drawing board" resulted in an increase in academic works and publishing. Thus, architectural theory and criticism has gained additional importance, dominating the architectural field more than ever before.(Nesbitt, 1996, pp. 22-23)

the professional milieu. ("Modern Mimarlık Hareketinin Mimarlık Yayınlarında Ele Alınışı ve Yayınların Uygulamaya Etkisi," 1985, p. 37)

3.2.1 Human/ Nature Dualism

If we continue with this periodization and consider the articles published between 1980 and 1984 in *Mimarlık* according to their relations to environmental architecture, we see an increase in the usage of the term "environment". (See Appendix 2) As it is reviewed earlier, in the previous decade environment was also the catchword rather than green, ecological or sustainable (which was not yet popularized even in the western world). Yet, it was discussed mostly as an externality or a problem that needed to be fixed by human intervention. Especially in *Mimarlık,* environmental problems were discussed only through their linkages to the existing ideological orientations of the periodical. Internationalization of the environmental problems, and environmentalism in that respect, were perceived with caution. This left certain aspects of the discussion untouched, and the extent of the environmentalist rhetoric that had been growing for some time now was not totally introduced to the readers of the periodical.[41]

In the first half of the 1980s, this gap was filled to a certain extent. On the one hand, environmental problems as a subject continued to dominate the periodical, but now new concepts and vocabulary were added to the discussions. On the other hand, the philosophical and sociological dimensions of the environmentalism were reviewed through theoretical reflections of the academicians. These attempts introduced certain themes or story lines which later will be cornerstones of the arguments on environmental architecture in the Turkish periodicals, such as: the dualism between nature and culture and its origins, the difference between Western and Eastern approaches to nature, the critique of science and technology in the construction of environmental problems, as well as a critique of the opposition of technology.

In 1981, two articles appeared on the issue of environmental problems. The first was "Industrialization in Çukurova and the Environmental Problems it Created" (Çukurova'da Endüstrileşme ve Yarattığı Çevre Sorunları) written by Türker Altan, and the second article was an interview with Aydan Bulca edited under the title of "Do we

[41] Naturally, a deeply structured discussion on the question of environment goes beyond the physical dimension into social, political and dimensions.

Perceive Environmental Problems Properly?" (Çevre Sorunlarını Doğru mu Kavrıyoruz?). As we have reviewed, starting with İlhan Tekeli's article in 1973, environmental problems had already begun to be discussed within the wider framework of certain social processes and patterns. Yet, Tekeli's analysis was more about the political/economic implications of environmental problems and their globalization. Eight years later, Altan and Bulca was utilizing a different kind of rhetoric incorporating some of the basic concepts and themes of an "ecological worldview". For example, alongside the critique of industrialization and urbanization, Altan also problematized the "alienation" of humans from nature and emphasized the adverse effects of this on the "human organism" (T. Altan, 1981). According to Altan, the only way to eliminate the exhaustion and imbalance caused by industrial societies is to conserve the natural landscape for recreational activities. Another concept he familiarized his readers was "ecological balance", a term frequently used in environmental architecture. He also emphasized our responsibilities for future generations, a line of rhetoric that became popular especially after Brundtland's definition of sustainable development: "In our country, natural balance is destructed irrevocably due to increasing industrialization and urbanization. We should make provisions as of today to leave a livable country to the next generations."

Bulca, on the other hand, was talking about the contested nature of the definition of "environment" and differentiated work, life and natural environments (Bulca, 1981). Natural environment she claimed always comes to a state of "balance" and preserves its "holistic" character. And, humans- although they display diverse features- were a part of this "system". This text presented three of the important terms of environmental discourse: balance, holistic and system. The historiographical review is also typical: Arising of the environmental pollution in 19th century alongside of industrialization and urbanization, Rachel Carson's book as the initiator of environmental movement, development of systemic approaches and cybernetics, questioning of the western lifestyles. Yet, alongside these more abstract discussions Bulca also revealed the evolution of the environmental tendencies in Turkey which will be considered again in the following section.

These changes in the articles, both in the usage of the terms related with environment and their interpretations, pointed towards what Alan Marshall had defined in his book *Unity of Nature: Wholeness and Disintegration in Ecology and Science* as the fundamental partnership between environmentalism and the idea of "unity of

nature" (Marshall, 2002, p. 6). In other words, the rise of environmentalism in Western world was accompanied by the questioning of the relationship of humans with nature, in that "the environmental woes of the past century" were thought to be the result of "fragmented, mechanistic and atomistic" interpretation of natural environment (Marshall, 2002, p. 8). Here lied the main criticism of contemporary environmentalism, and it was beginning to also enter the Turkish architectural periodicals. The "ecological worldview", in return, was defined in terms of its difference towards this model. The problematic of human/nature relations, on the other hand, continued to dominate the articles on the subject of environment, which was accompanied by a search for the historical origins of this relation. According to Marhsall there were three stages to the history of origins and development of an ecological understanding: (1) Ancient philosophies of nature, (2) Cartesian philosophy and the advent of modern worldview, and (3) The new paradigm. Such a historical reading was also evident in the articles written on the subject in architectural periodicals in this time period, and two of them were significant for they built exclusively on the questioning of relation between humans and nature.

One such example which questioned the human/nature relations was written by Gülsüm Nalbantoğlu under the title of "Notes on Conceptualization of Environment and Environmental Aesthetics" (Çevrenin Kavramlaştırılması ve Çevre Estetiği Üzerine Notlar). Published in 1982, this was one of the earliest examples in which both environmental problems and the conceptualization of environment was discussed in relation to the human/nature dualism. Nalbantoğlu had tried to situate this discussion into its historical context, and considered its philosophical foundations (Nalbantoğlu, 1982). The ecological crisis, she claimed, had raised the old philosophical questions into discussion once again, this time in the form of pragmatic versus romantic approaches. The pragmatic approach was defending the unrestricted authority of humans over natural resources, whereas the romantics were positioned in the negation of technology. According to Nalbantoğlu, although they seemed to hold very diverse positions about the ecological crisis, both romantic and pragmatic approaches overlapped as they built up their arguments on the dualism between nature and humans. In that sense, they can be seen as the different faces of the same coin. Yet, the relationship between nature and humans or society is much more complex than what may appear in the first place. And,

only through the questioning of these categories can environmental aesthetics begin to enclose the richness of the experience of life into its domain.[42]

In the same issue with this review was a translation by Ufuk Yeğenoğlu and Abdi Güzer of a chapter from the book *An Introduction to Environmental Psychology* (Ittelson, 1983). In this article the topic of human/nature relations, which was evident in Nalbatoğlu's original text, was once more brought to attention. Yet, while Nalbantoğlu called for an understanding that would go beyond that of human/ nature dualism, this text was resting on the presumption that Western and Eastern approaches to nature differ and can be distinguished from one another: The West perceives nature as a material to be used and directed, whereas in East it is perceived through personal experiences. The writers, then, turned to the origins of these differing approaches to nature: First to ancient Greece, specifically to Plato's ideal in which humans and natural entities were not differentiated; and then to Christianity with which the unity between humans and nature transformed into a duality. Whereas, they claim, the East- specifically Taoism- does not distinguish between natural and supernatural. The comparison continued with the role science played within these two worldviews. Two results were important. The first was related with causality: with the advances in science, nature became a calculable entity free of teleological explanation. This project depended on observation, where nature could be properly revealed only through science. The second was related with the fragmentation of the natural world: nature was perceived as a group of separate elements that came together.[43]

---

[42] Nalbantoğlu reintroduced the need to constitute stronger theoretical discussions upon the question of environment in architecture one more time in 1983, as she reviewed Necdet Teymur's book Environmental Discourse: A Critical Analysis of 'Environmentalism' in Architecture, Planning, Design, Ecology, Social Sciences and the Media. Teymur, in this book, used discourse analysis as a method to understand, and at the same time criticize, the phenomenon of environment in current discussions in architecture. In the introduction to the book, Teymur claimed that what he was trying to do was to restate some of the very basic questions of architecture that neither academy nor the professional practice was capable of answering. In doing so, he aimed questioning the taken for granted concepts such as 'scientific approach', 'design method', or 'system theories'.42 According to Nalbantoğlu, it was this critical tone of the book that made it a valuable reference point. Already back then, Nalbantoğlu had acknowledged environment as a main heading under which many different topics and approaches were being drawn together. Rather than justifying one or the other, Teymur was maintaining a critical distance to all of them, and thus was proposing a more productive sphere for discussion. Nevertheless, Nalbantoğlu also accepted that Teymur's work stayed solely within the theoretical sphere and claimed much effort from the reader.

[43] Starting with Roger Bacon, the writers -throughout the text- listed the key scientists in the construction of the mechanistic world view from Galileo to Newton and Descartes. These discussions were accompanied by a parallel analysis of the changes taking place in art and specifically in landscape paintings and architecture. According to the article, by the eighteenth century nature was perceived as an

3.2.2 Technology Opposition

As have been reviewed in the previous chapters, contemporary environmentalism throughout the 1960s and 1970s had incorporated a critical review of the modernist conceptions of nature. The articles that have been revised in the previous section were a reflection of these discussions inherent in environmentalism. One of the important dimensions to this critique was the questioning of industrial revolution and the validity of technology. This dimension was taken up by İhsan Bilgin in 1982 in his article "Technology opposition, Ecology and Participation" (Teknoloji Muhalefeti, Ekoloji ve Katılım). Yet, rather than continuing with the environmental critique, Bilgin was criticizing the environmental movement- mostly for its interpretation of technology which was claimed to be based primarily on opposition (Bilgin, 1982). Bilgin started his argument by criticizing the historicist view of technology justified on the basis of the notion of "progress". According to Bilgin, the history of technology should be more than just a review of certain instances and products, or else it will be just an inventory of the instruments of production. Instead, it should be viewed both as a product of the social organization of production of its period, and at the same time one of the determiners of such a social organization. As stated by Bilgin, one of the most crucial ruptures in such a history took place with the transition to an industrial mode of production. As expected, there was also an opposition to the products, relations and processes related with industrial technology, which according to Bilgin can be identified into two main branches: either a return to post-industrial mode of production, or a moderation of the industrial technological standards. Another element of opposition resulted from the ideal of "growth" itself, revealing itself in opposing theories such as "small is beautiful" and "zero growth". Although these alternative approaches claimed to be in conflict with the rational of economic growth and its accompanying life-style, Bilgin saw them as being complementary. Thus, he was sceptical about these environmental approaches. He claimed that they replaced the myth of development with that of science and technology as being a priori domination mechanisms (Bilgin, 1982, p. 35). In the long run, these tendencies which oppose industrial technology -either directly or indirectly- has gained a political identity and turned into a movement.

---

object under the control of humans. Yet, this time period also saw the emergence of a romantic counter-culture that praised the untouched natural environment.

According to Bilgin, "Ecologists, Greens and Alternatives" were all part of this movement, and their defining feature was the position they take against technology. He did not differentiate between these strands of environmentalism. To him, they all proposed a similar solution to the crisis: a call to escape to the past. In other words, they did not have the ability to intervene with the problems of the society in general, and they stayed within the limits of being marginal. Thus, the argument was built upon two limited groups –the environmentalists and the public- that were at odds against one another

As will be seen in the proceeding chapters, the question of technology have continued to be an important subject of environmentalism, and in the following years it found much more reflection also in Turkish architectural periodicals. Yet, in 1982 it was a new theme and this article was one of the earliest examples in which the relationship between the question of environment and the history of science was opened to discussion. It was not only the questioning of this relationship that was significant, but Bilgin was clear about his stance as he criticized environmentalism for what he thought to be an opposition or rejection of technology. Interestingly, until then the call for a post-industrial past did not find much reflection in Turkish architectural periodicals. On the contrary, as we have seen, in the developmental discourse environmentalism was not embraced because it was thought to be in conflict with that principle. In that sense, Bilgin's critique of environmentalism appeared in *Mimarlık* before it actually entered the agenda of Turkish architecture.[44]

3.2.3 The Rise of Environmental Movement in Turkey

In respect to the World Environment Day (Dünya Çevre Günü), in 1984 an issue of *Mimarlık* considered the subject of environment. There were four articles in this folder: a discussion on the issue of environmental awareness in Turkey with several key figures from different fields, an article about Gökova Thermal Plant, another article about the implementation of the first Environment Law in Turkey and a translation

[44] Bilgin's critique was related more with the discussions taking place in the world in general, rather than with the state of Turkish environmental movement or architecture. Even then, his consideration of environmentalists as a homogenous group is highly questionable. In contemp orary environmentalism there has always been a strain of thought which questioned the role of technology in the construction of environmental problems. Yet, the solutions proposed in terms of the viability of technology vary greatly even in environmental movement.

about the concept of natural environment. In total, this issue was reflecting the changing parameters of environmental movement in Turkey in the 1980s. First of all, it displayed the strengthening of environmentalism as a social movement, and secondly, it revealed the increasing role of the government in environmental politics.

To begin with, 1980s was a threshold for the emergence and development of non-governmental organization in Turkey, and the rise of environmental movement in those years were directly related with those processes. The neoliberal reforms, although their main goal was economic transformations, also created a shift in political structures: "the neo-liberal project demanded that economic liberalization was accompanied by political liberalization, which resulted in the promotion of civil society organizations" (Aydın, 2005, p. 56). As a result, starting with the 1980s, the number of civil society organizations begun to increase in Turkey. Under these circumstances individuals and groups with environmental concerns begun to gather and search for new forms of collective action. Also of importance were the changes taking place in the economic sphere. According to Fikret Adaman and Murat Arsel two parallel processes affected environmental activism in Turkey: "First, and more prominently, Turkey opened up to large capital flows and foreign direct investment in industrial development. Second, the laws and regulations governing natural resource extraction management systems, which largely depended on such flows of investment, were amended"(Adaman & Arsel, 2013, p. 321). As a consequence environmental conflicts begun to arise in Turkey. Some of these have turned into national protests that have gained public acceptance, whereas others remained as local struggles. Nevertheless, it is possible to claim that after the 1980s, a stronger environmental movement was initiated and has gained public support through activities such as signature campaigns, protests, demonstrations and environmental festivals (Akbayır, 2010, p. 111).

These developments that I have briefly reviewed were also crucial in the construction of environmental discourse in Turkish architecture. For example, the first article published in the June of 1984 – "Interview: Environmental Awareness in Turkey" (Söyleşi: Türkiye'de Çevre Bilinci)- was notes from a meeting that gathered together a group consisting of a mayor (Mehmet Altınsoy), a retired undersecretary of environment (çevre müsteşarı) (Rafet Erim), an academician from METU (Jale Erzen), a representative of a non-governmental environmental organization (Türkiye Çevre Sorunları Vakfı) (Engin Ural) and a social anthropologist (Bozkurt Güvenç). For the first time in an architectural periodical, such diverse actors were discussing about and

sharing their opinions on issues that can be titled as environmental. This was in accordance with the increasing public concern on environmental issues and with the strengthening of the environmental movement in that period. In addition, it also coincided with the construction of environmental policies in Turkey in which both civil and governmental organizations were included.

According to İlhan Tekeli, the leader of the discussion, environmental movement in Turkey was very much influenced by the dissemination of the movement in the world rather than arising from the sensibilities of Turkish society in general (İlhan Tekeli, 1984, p. 29). Thus, the main question of the discussion was: to what degree the society shared the environmental awareness that was trying to be created and what can be done for its proliferation. Such a question rested on the assumption that public awareness on environmental issues was not sufficient enough and needed to be strengthened by some sort of an outside influence such as art, civil society organization, education or government. In that context, the discussion started with Jale Erzen as she discussed the role of art in establishing environmental awareness. According to her, art supported that objective mostly by creating communicative and democratic environments in which people would become interested or at least ask questions about the environmental problems.[45] Agreed on the fact that much more needed to be done for increasing the environmental awareness of the general public, Tekeli this time asked Engin Ural from the Environment Foundation of Turkey (Türkiye Çevre Sorunları Vakfı)[46] about the role of non-governmental organizations in that objective. According to Ural, the first aim of TÇV was to explain to society that the concept of environmental problems should be considered as a whole rather than as local or separate incidents. Such an emphasis was in line with the growing perception of the environmental crisis as being global which had its roots in the previous decade. As we have reviewed, throughout the 1970s, events such as "1972 United Nations Conference on the Human Environment" or publications such as *Limits to Growth* had all contributed to an understanding of the environmental problems as an overarching concept under which a whole array of different problems and issues were assembled. Although not stated explicitly, for all the authors of this discussion the degree of this 'western' influence seemed to be an important question.

[45] When the subject was Turkish art the argument also touched the distinction between Western-Eastern understandings of nature, which -as we saw in the previous section- was a popular topic among Turkish architectural academicians.

[46] This name then changed to "Türkiye Çevre Vakfı".

One way to search for an answer to this question was, as Tekeli did, to direct the discussion to the structure of environmental organizations in Turkey, in this case to TÇV: "As a civil society organization, from which segment of the society was the Foundation constituted?" As it turned out, it was eight individuals -"a professor from an agricultural faculty, a lawyer, two businessmen, a member of parliament, a retired bureaucrat and a top executive"- that established TÇSV, and three of them were Rotarians. The answer revealed -what probably was also Tekeli's intention- the contrast between the structure of the Turkish society and one of the most important environmental organizations of that period. Support came from Rafet Erim, a retired undersecretary of environment, as he considered this difference being understandable: how else could it be because environmental consciousness in Turkey was shared only by a very small group of people. According to Erim, although the founders of TÇSV reflected only a very small portion of Turkish society, they nevertheless have utilized all of the instruments they had and have given consistent effort in the proliferation of the environmental consciousness. And in relation to the material support of Rotary organization, Erim had a rather pragmatic answer. Environmental concern, he claimed, had become a popular or a 'fashionable' subject in international institutions which had also affected certain 'upper class' (yüksek tabaka) organizations in Turkey. Tekeli had a similar view on the influence of international institutions, and following Ural and Erim, he finalized this part of the discussion by reversing the question to that of how to benefit from this growing interest of international institutions in environmental matters in favour of Turkish society.

Another outcome of the growing international concern and the emergence of global environmental politics was the increasing role of the Turkish government in environmental politics. By then, especially in the industrialized countries environmental issues has begun to be considered as being important in their own right and "increasingly intertwined with other significant issues in world politics including economic development, international trade, North-South relations, and even international conflict and national social and political stability" (Chasek et al., 2010). Turkish government have also responded to these developments in international politics, and begun to initiate its own national policies with regard to environmental issues in Turkey. Zülküf Aydın define the route of the Turkish environmental movement since the mid-1980s as:

> Until two decades ago, environmental issues were hardly on the agenda for the Turkish state as the level of industrialization and agricultural commercialization had not created the level of environmental degradation that would endanger the conditions for capital accumulation. Nor had they generated a sufficient level of reaction from the workers, peasants and public in general to threaten the legitimacy of the state. Furthermore, there was no strong external pressure to force the state to promulgate environmental regulations that could provide the basis for environmental institutions to fight against environmental problems. The rapid advancement of environmental problems in the last two decades and increasing international pressures, however, have forced the state to take action to promulgate laws, decrees, rules and regulations for environmental protection, specifying standards for air and water quality. With the support and encouragement of international organizations, the state has introduced institutional and legal changes for environmental management. (Aydın, 2005, pp. 63-64)

One of the milestones was the 1982 Turkish Constitution, which included several articles on the protection of the environment. The most important one was Article 56 proclaiming that "everyone possesses the right to live in a healthy and balanced environment. Developing the environmental circumstances, protecting environment health and preventing environmental pollution are the duties of the state and its citizens."[47] Based on the principles stated in 1982 Turkish Constitution, in 1983 the First Environment Law was established by the Parliament.

First Environmental Law was an important event for Turkish environmental movement, and not surprisingly it became an important topic also in the architectural articles that were written around those years on the subject of this thesis. Returning to the article that was under analysis, "Interview: Environmental Awareness in Turkey", it is possible to detect a similar emphasis on the importance of the First Environment Law in providing the institutional and legislative base for environmental protection. Although all of the authors stated that it had certain insufficient properties, the First Environmental Law, nevertheless, was considered to be a very important development for Turkey in terms of environmental management. This view was shared by the following articles of this issue. For example, in "Is Gökova the Place Where the Energy Bottleneck is to be Overcome?" (Gökova , Enerji Darboğazının Aşılacağı Yer Midir?). Rafet Erim was discussing in length the implications of this law, and especially the importance of Environmental Impact Assessment (Çevresel Etki Değerlendirmesi). By

[47] "However, Article 56 is not the only article regarding environmental protection. Article 43, for example, states that the public interest should be respected in coastal zones; Article 63 indicates the duties of the state to protect all historical sites and sites of exceptional natural beauty; Articles 44, 45, and 169 give the state the responsibility of undertaking all precautions to preserve the soil and forests; Article 23 gives the state the right to regulate, and if necessary to suspend, the freedom of establishment in cases where environmental danger exists." İbrahim Özdemir, "The Development of Environmental Consciousness in Modern Turkey", in Environmentalism in the Muslim World, [Richard Foltz (ed.), 2003, p.5.

looking at the title of this article, one might expect to find a story about the environmental protests against Gökova Thermal Plant. Yet, Erim was more interested in maintaining the balance between development- environment relations and the role of the legislative system in that purpose. A similar approach was held by Fatmagül Berktay in the third article, "Environmental Law in Implementation" (Uygulamaya Geçerken Çevre Yasası). According to Berktay, government intervention in environmental issues was a necessity because without the regulations defined by laws, the market forces would not take full responsibility of the damages they give to environment. In this understanding, environment was equated with resources such as air and water, which were considered to be community property.

In overall, there were two basic premises that these discussions pointed towards in the interpretation of environmental problems in the following years. First of all, the environmental problems specific to Turkey were to take more space when compared with earlier. Secondly, the role of governments in environmental protection would be more intensely argued for resulting with a call for more policies and their better implementation. Also of importance was that, by the end of mid-1980s, the expansion on the borders of the term "environment" was settled, and as also observed by Necdet Teymur it had come to suggest a wide range of concepts such as "nature, world, cities, buildings, space, forests, air, wildlife, energy and scores of other distinct phenomena from housing to whales" (Basa, 2009; Teymur, 1982, p. 261).

3.3 Relating Environmental Problems With the Built Environment: 1985- 1993

Starting with the second half of the 1980s, the number of architectural periodicals published in Turkey had increased considerably. This was interpreted as an advance for the profession; both because the resources supporting the architects were expanding, and because it indicated that the architectural field was now mature enough to maintain those periodicals both in quantity and content. Yet, for many this optimism was questionable. In 1992, in honor of the 250th issue of *Mimarlık* a discussion was held among the publishers of Turkish architectural periodicals ("Yayıncılar Tartışıyor," 1992). In this discussion, many of the participants expressed their doubts about the current situation of those periodicals. Among them was Uğur Tanyeli, who defined the

increase in architectural publishing in Turkey as "inflation", a term also used by Murat Balamir in his speech representing *METU Journal of Faculty of Architecture*. Both these authors used inflation to indicate that the increase in the quantity of Turkish periodicals was not accompanied by a comparable increase in their quality, mostly because the field of architecture in Turkey was not advanced enough to sustain the complexity needed. For both these authors, "inflation" of the periodicals was directly related with the economic changes taking place in Turkey: from the state-led industrialization processes to a strategy of export-led growth in an open market. Thus, it was not only architectural periodicals that witnessed a rapid increase in their publications, but other genres such as actuality, news, fashion, lifestyle or pornography were all expanding in number. According to Balamir, the inflation of the architectural periodicals should be seen as part of the larger processes that affected the publishing and cultural life of Turkey in general.

Economically, architectural periodicals depended on the advertisement market more than their sales profits. According to Tanyeli, as well as Hasan Özbay, this economical aspect was very influential in determining the agenda of these periodicals. Publishers sought to expand their target audience so that they could address to a larger group of advertisers. This resulted in the emergence of another type of periodical, "non-professional architectural periodicals" specialized on decoration, textiles and furniture. These journals were mostly inclined towards home environments as a part of the modern housing culture. The professional journals on the other hand had incorporated decoration as a "popular" topic into their contents. As a result, claimed Hasan Özbay, most of the periodicals begun to resemble each other and going through the articles became a "vicious cycle". The increase in the quantity of periodicals was not accompanied by an increase in the diversification of the contents. According to Erdal Sorgucu, unlike their international counterparts architectural journals of Turkey in that period were not reflecting the plurality of the architectural profession.[48]

In this atmosphere environment had lost the attraction that it had witnessed in *Mimarlık* throughout 1979 and 1984 both in terms of the number of articles published on the issues related with environment, and also in terms of enriching the discussions on

[48] For example, they were not specialized such as being academic, design- oriented, giving details or competition periodicals. Murat Balamir was also criticizing the homogeneity inherent in Turkish architectural publishing. The solution he proposed was again specialization of the periodicals so that they could all exhibit particular identities sustaining certain aspects of the profession.

environment in several dimensions. As the dominance of theoretical literature and criticism begun to weaken so did the interest in phenomenon of environment, and after 1984 until the 1990s the subject of environment totally disappeared from *Mimarlık*. In *Yapı*, on the other hand, environment was almost totally absent throughout the 1980s as there was only one article on the subject. From 1990 and onwards, however, environmental problems found their main reflection in the Turkish architectural periodicals through *Yapı*, both in terms of the number of articles published as well as the space reserved to environmental problems in the news section.

1993 marked a significant point in Turkish architectural periodicals for this thesis, in which the concept of sustainability had entered the discourse and from which onwards was an increasing interest to the field of environmental architecture in general. Consequently, a shift was evident from the dominancy of the term environment to other concepts such as "sustainability" and "energy-efficiency" that was indicative of the transformations taking place in the discipline that will be analysed in the next chapters. The period between 1985 and 1993, then, served as a transition stage in which the interpretation of environmental problems begun to change from those rather abstract arguments on the conflict between development and environment or those theoretical discussions on the philosophical foundations of human/ nature dualism to a more practical search for solutions. Thus, there was a tendency to relate environmental problems with the built environment, and the relation of environmental degradation and the disciplines such as planning and architecture were being more explicit. The role of *Yapı* in initiating this process can be attributed, in part, to its position as an architectural periodical. Influenced by its organic relation with Building-Industry Centre (Yapı-Endüstri Merkezi), *Yapı* had always tried to combine the constructional and industrial domains to its publication. One of the apparent aims of the periodical was to coordinate and inform practice. In that respect, it can be claimed that the commitment to the act of building, to architecture's physical nature was more evident in *Yapı* than *Mimarlık*, and this tendency revealed itself in the articles in the efforts to relate environmental problems with the built environment.

One such example was the first article published in *Yapı* in 1985 on the subject: "A Practical Solution in Prevention of Marine Pollution" (Deniz Kirliliğinin Önlenmesinde Pratik Bir Çözüm). According to Hülya Ernst the extent of the human actions especially in the scientific, technologic and economic spheres had begun to affect the "natural balance" of the earth and reached a dangerous coverage. She chose to

focus on the pollution of the seas, and then jumped to the importance of Environment Law in Turkey for the protection of natural environments. As we have seen in the previous section, the first Environmental Law that was established in 1983 was a well-recognized subject in Turkey for the people interested in environmental matters. Thus, most of the authors writing around those years were reflecting on that subject in one way or another. Yet, what differed in this article from the earlier ones was that Ernst was trying to link these processes with the architectural profession and the built environment. According to Ernst, wastewater treatment systems of summerhouse developments in Turkey were contributing to the pollution of the seas and they were not ecological. Most of the houses in those sites were storing their wastewaters in cesspools (foseptik) which were then discharged into the seas. Once that link was clear, the article continued with the overview of two alternative systems established in "developing countries": package and compact wastewater treatment plants. The significance of this article, however, was not much about the introduction of these systems as it was about suggesting a very practical solution that architects could use in preventing environmental pollution. Until then, the discussion on environmental issues in architectural periodicals was shaped mostly around the concept of "environment", but its relation to the built environment or the act of building was not covered considerably.

The second article written on the subject was published five years later in 1990, and this time it was about air pollution. The practical solutions that could be applied by architects were also evident in this article. Where Ernst was proposing "compact wastewater treatment plants", Celal Okutan was analysing fuels and heating systems such as heaters and stoves. In the end, he was proposing precautionary measures as in a what-to-do list for architects and related disciplines such as mechanical engineers, as well as the government. The first part was towards short term solutions that would give a direct response, such as providing ventilation for coiler rooms or inspecting heater chimneys for compliance with standards. The second part revolved around long-term outcomes which required the collaboration of both governmental policies and the building sector in initiating substantial changes especially in heating systems- such as proposing central heating systems or systems compatible with natural gas for new residential areas.

The transformations that we have witnessed so far in this chapter had resulted in a theme that would become one of the main reference points for environmental architecture: that of the impact of buildings and their construction on the environment.

In fact, most of the claims done in the name of environmental architecture in the following years rested on this basic assumption. The third article on the subject was significant in that respect, for it was explicitly built upon that theme and it was titled "The Impact of Construction Technology on the Environment". Not surprisingly, this article was a translation of a paper presented by A Ramachandran, as the Under-Secretary General and Executive Director of United Nations Centre for Human Settlements. As I will more thoroughly analyze in the following chapters, 1990s had witnessed a transformation in the incorporation of environmental issues into the domain of architecture which was supported by and resulted in an increasing interest in international organizations and institutions. In that respect, this article was illustrative of the path the field of environmental architecture was taking in those years in the Western world and suggested what was to dominate the discourse in Turkish architectural periodicals later. According to Ramachandran the relation between construction and environment was changing from the attention given to protecting the buildings or constructions from environment to a careful assessment of their long-term ecological consequences. This was followed with a discussion on "what must be done", thus provided a route for action. The initial thrust of research, claimed Ramachandran,

> should be aimed at understanding the fundamentals of construction-ecology interaction. The research horizon can then be broadened to cover areas such as assessment of risks associated with specific building materials and products, environmental protection through development of clean technologies, etc. The outcome of such research will provide the foundation for development of product standards, legislation and formulation of environmental policy for the construction industry. (Ramachandran, 1990)

The production of standards, legislations and environmental policies would also become the main drive of the practices in the field environmental architecture in Turkey after the 2000s. This article was one of the earliest texts indicating such a shift. Yet, more important was that all these developments discussed under the title of "what must be done" was based on the theme of "the impact of buildings and their construction on the environment". To this tendency I will return again in the last section.

The other two articles published on the subject of environment in this time period, on the other hand, were less influential in directing the discourse on environmental architecture in the periodicals. The first was "Public Education Declaration for Environmental Sensitivity" (Çevre Duyarlılığı İçin Halk Eğitimi Bildirgesi) published in 1991. This was a paper prepared by the students of Ankara University Faculty of Education Sciences under the supervision of Prof. Dr. Cevat

Geray, and it presented a numeric list of how to educate the public and raise environmental consciousness. The other one, on the other hand, was about Ankara Beltway (Ankara Çevre Otoyolu) that was in the process of being constructed at the time period. Published in 1992, this article was representing the view of the Chamber of Architects of Turkey on the subject as it evaluated the effects of this construction on the water basins, on the dams, on the green spaces and historical sites of the region. Here again, environmental concerns were related and discussed through the building processes. The significance of this article was however that it posed some key distributional questions, such as "who owns and manages the environment?", and these questions although would not be very much reflected in the periodicals were to be very affective in the practices of sustainable development in Turkey in the following years.

In the following years, environmental problems continued to take part in the Turkish architectural periodicals. Yet, their dominance and significance was lost. There was mostly one or in some years no articles that dwell exclusively on the concept of environment. For example, between 2000 and 2003 in which the concept of sustainability had witnessed a boom of interest, no articles were published related with environment. For the existing articles, on the other hand, there seemed to be mainly two axis of evaluation. The first of these was the questioning of environmental problems and environmental politics of Turkey, in articles such as "Dams, Environment and Ilısu Dam" (Barajlar, Çevre ve Ilısu Barajı) (1999) or "Nature Protection in Contemporary Law Drafts" (Güncel Yasa Tasarılarında Doğa Koruma) (2011). The second axis continued with the request to direct and inform practice as in the article "Effects of Atmospheric Pollution on Damage of Building Materials" (Atmosferik Kirliliğin Yapı Malzemeleri Hasarına Etkisi) (1998). This was accompanied with a change in terminology. Especially after 2004, "global warming" and "climate change" became the key concepts of the discussion on the environment, in articles such as "Global Warming and the Dangerous Climate Changes" (Küresel Isınma ve Tehlikeli iklim Değişiklikleri) (2004), "The Possible Impacts of Climate Change in Planning and Design" (Planlama ve Tasarımda İklim Değişikliğinin Olası Etkileri) (2005), and "Economic Solutions to Climate Change" (İklim Krizine Ekonomik Çözümler) (2010).

Such a transformation was in accordance with the specific construction of environmental problems- that have been reviewed previously in the chapter "Environmentalism and Architecture"- from a compartmental approach of

environmental pollutions to a global discourse on environmental crisis. John Urry and Phil Macnahgten summarize the two preconditions that have to be developed in the construction of environment as problem. First, it is "necessary that a range of empirical phenomena came to be regarded as environmental problems rather than as simply demonstrating environmental change." So the extent of air pollution in Ankara was no more perceived simply as a change which was in a sense a natural part of urbanization. Secondly, there has to "be gathering up of a whole series of issues so that they became viewed as part of an overarching environmental crisis, in which a striking array of different problems and issues come to be regarded as part of "the environment" and subject to similar threats."(Macnaghten & Urry, 1998, p. 21) Similarly, in the periodicals under consideration domestic issues such as air and water pollution were first recognized as problems, and then quickly became part of a more inclusive discourse about environmental crisis. Since then, environmental crisis had become one of the leading themes of the discourse on environmental architecture.

3.4 A Sense of Urgency

Chapter 3 had revealed the transformation of environmental problems from isolated incidents into a global discourse on environmental crisis and the rise of environment as a central problematic of architecture. Since then, in Turkish architectural periodicals the claims about environmental degradation -intensified by the scarcity of resources and energy- had been used to warn of an approaching "environmental crisis". These claims had become diffuse and pervasive, and established a core component of the discourse on environmental architecture. For this study, there are three important points in relation with this statement. First of all, the frequency of the appearance of "global environmental problems" in the articles transcended any other issue in relation with environmentalism. In nearly all of the articles, environmental problems or environmental crisis was mentioned in one way or another. Secondly, environmental crisis acted as a common theme which cuts across differing subjects (from vernacular architecture to high-rise buildings) and approaches. Thirdly, although there were few exceptions, when considered broadly, these claims were intended to provoke awareness and urgency rather than further reflective and argumentative practice. Thus, passages which illustrated a picture of an Earth under danger continued to take place in the

articles. One such example was the dramatic tone Doğan Hasol was using in 1994 in an article written about Habitat II:

> Our climate is under threat because of the effects of rapid population growth and migration… Our water and earth are under threat… Plant and animal species are under threat… Our life sources and economical values are under threat… In short, our planet is under threat. (Hasol, 1994, p. 44)

Another common strategy was to present a list of the environmental problems:

> Excessive use of fossil fuels, greenhouse gases and global warming, the destruction of wetlands, forests and coral reefs, acid rain, desertification, reductions in biologic variety, unsanitary conditions in urban living, excessive resource consumption and waste, demonstrates the necessity of taking measures in environmental issues as soon as possible. (Ahmet Koçhan, 2003, p. 55)

Also of importance was the changing character of the environmental problems towards global threats:

> The negative environmental developments arising out of excessive consumption of the natural resources that are viewed as endless are now threatening mankind and all living creatures. Especially the negative impacts such as greenhouse effects or acid rain caused by the usage of fossil fuels that generates gaseous wastes have become global threats crossing the borders of countries. (Canan, 2003, p. 56)

The attitude maintained in this passage was typical: to express higher levels of involvement with global environmental risks such as global warming, than with local environmental problems. Yet, this is not surprising because, since the 1980s, a similar trend which prioritizes global issues over local ones has been evolving within the environmental discourse itself.[49] These problems usually transcend the limits of our sensory perceptions in which we become more and more dependent on experts for their definitions. The environmental risks seem distant and long term, and the complex relationship between our daily actions and their consequences is blurred. Thus, the social processes which render the physical world as in danger of an environmental crisis are hidden rather than being revealed.

The discourse of environmental crisis was accompanied with an emphasis on the role of buildings on environmental degradation. Many articles that have been reviewed followed a similar narrative. They often started with an illustration of "a picture of a common global environmental crisis", by listing several or more of the environmental problems the world is facing; this then was followed by an argument about the role of

[49] Phil Macnaghten and John Urry analyze studies and survey researches done in relation with environmental concern.(Macnaghten & Urry, 1998, p. 80)

building sector and architecture in creating such a crisis. In this context, energy and energy consumption stood out as the most direct link associated between architecture and environmental crisis. Here, buildings were represented as being the main contributors of energy consumption. This was exemplified with passages such as:

> The energy consumed both in the construction and the management of the houses, offices and all typed of buildings that we occupy have an important part in environmental problems witnessed. (Cengiz, 2009, p. 65)

Or,

> Buildings contribute to the accelerating extinction of non-renewable energy and material sources by causing environmental degradation, and playing important role as one of the reasons of climate change. (Sergio, 2011, p. 35)

In overall, both discourses on environmental and energy crises have created a feeling of urgency on the reader. The language used convinced us of a need for action and created a compelling case for the involvement of architects. Yet, what lacked was a detailed description about the nature of the problem. Such a detachment, in return, had resulted in the "givenness" of the environmental crisis. In other words, in Turkish architectural periodicals environmental degradation was taken as "given", but such an apprehension did not depend on a prior theoretical production (Teymur, 1982, p. 93). As a result, the discourse on environmental crisis became an unquestioned "field of reference that is itself a given" (Teymur, 1982). Thus, presenting a list of the environmental problems or declaring the role of architectural practices in environmental degradation became a sufficient reference point and justification towards any kind of engagement with the practice.

CHAPTER 4

"SUSTAINABILITY" AS A BRIDGE BETWEEN ECONOMIC CONSIDERATIONS AND ENVIRONMENTAL CONCERNS

4.1 Defining Sustainability: 1993-1996

4.1.1 Emergence of Sustainability

Starting with the 1970s, in which environment emerged as a (semi-) independent field of attention and in the following 20 years, environmental problems transformed into a global discourse of "sustainability" in the world which has ever since been very influential in the construction of the environmental politics and agenda. This global conception propelled the environment to a center stage and sustainability became an important topic for many differing disciplines- architecture included. Environmental issues begun to gain more attention in architecture especially in industrialized countries, and one of the leading parameters of such change was the regional and international conferences that served to increase the credibility of the sustainable approaches and materials in architectural culture and business. Accordingly, the first introduction of the term sustainable to the architectural periodicals in Turkey was through the influence of two international conferences. The first was the "18th World Congress of Architects" that was organized by the International Union of Architects (UIA) in 1993. With the theme "Architecture at the Crossroads: Designing for a Sustainable Future", this congress had introduced the term "sustainability" to the Turkish architectural agenda.[50]

[50] One of the earliest institutional recognitions of the term "sustainable" in architecture took place in 1993, with 18th World Congress of Architects that was organized by the International Union of Architects (UIA). The theme of that years congress was selected "Architecture at the Crossroads: Designing for a Sustainable Future", and it resulted in a statement of commitment on the behalf of architects to: "place environmental and social sustainability at the core of our practices and professional responsibilities" and to "develop and continually improve practices, procedures, products, curricula, services, and standards that will enable the implementation of sustainable design". With this declaration, the environmental responsibilities of the profession had officially entered the international agenda of architecture. The second article was an analysis of the congress, published under the title of "UIA Kongresi Üzerine Yorumlar – Değerlendirmeler" which was a summarization of the discussions taking place within the Chamber of Architects after the congress was finished. The article reflected the critical review of the

The second was the "Second United Nations Conference on Human Settlements" (Habitat II) that was held in İstanbul in 1996.[51]

Yet, the influence of both of these conferences was only partial. They have introduced the concept of "sustainability", but could not initiate a strong discussion. To state in numbers, between 1993 when the term first appeared and 2001, only six articles directly referenced sustainability in their titles. And, all of these articles were published in *Mimarlık*. As the publication organ of Chamber of Architects, *Mimarlık* seems to be more responsive to the arising interest in sustainability in international agenda of architecture. In this period, the basic terms of the discussion, such as the definition and interpretation of sustainable development, were introduced to the readers of the periodicals. But the relation of these discussions to the discipline of architecture was not explicitly explored, such as the formulization of sustainability principles for architecture, analysis of sustainable buildings, technological innovations or the applicability of these to the practice.

The Chamber of Architects of Turkey was taking this congress quite seriously, because UIA represented "the most suitable platform to establish international relationships, to defend professional and political arguments, and in the case of taking administrative duties to benefit from this authority for increasing its effectiveness in Turkey." Therefore, when the theme of that year's congress was announced as "Architecture at the Crossroads: Designing for a Sustainable Future", sustainability suddenly became an important issue in *Mimarlık* as the publication organ of the chamber. Thus, right after the congress - in the third issue of *Mimarlık* in 1993 -two articles appeared that were directly related with the congress. The first was a translation of the "Declaration of Interdependence for a Sustainable Future," that was signed by the presidents of both UIA and American Institute of Architects (AIA). This was the first time that "sustainable" as a word was used in the title of an article within the periodicals under analysis. The second article was a review of the congress, published under the

---

institutional and organizational aspects and activities of UIA. Yet, the contents or the relevance of the declaration and specifically the significance of sustainability were not even mentioned. This was partly because, in Turkey, environmental issues were still considered as irrelevant or secondary for architecture. At most, they entered the field as a reflection of the developments taking place in developed countries.

[51] This was an important international event that gathered the representatives of national and local governments, NGOs, institutions, private sector and media. And because it took place in Turkey, it had a broad impact also on the Turkish architectural periodicals. Realizing sustainable human settlements was one of the prominent objectives of the conference. Thus, this conference has emphasized the social aspects of sustainability, and initiated a critical stance about sustainable development.

title of "Remarks and Considerations on UIA Congress" (UIA Kongresi Üzerine Yorumlar – Değerlendirmeler). It was a critical review of the organizational aspects and activities of UIA. Yet, the contents or the relevance of the declaration was not even mentioned.[52] This was partly because, in Turkey, environmental issues were still considered as irrelevant or secondary for architecture. At most, they entered the field as a reflection of the developments taking place in the international agenda of architecture.

4.1.2 Introducing the Social Dimension

As have been reviewed in the previous chapters, both the agenda of environmental management and sustainable development presented a global conception. In other words, "environmental action can be seen in this sense a part of a larger process of global constitution making" (Martello & Jasanoff, 2004, p. 32). In that context, the incorporation of the concept of sustainability into Turkish architectural periodicals through the influence of international conferences and the international agenda of architecture which put ever more emphasis on sustainable practices, was no coincidence. The introduction of sustainability into Turkish architectural periodicals was more like a recognition and accommodation of the knowledge and perspectives of this global transformation than an organic advancement of the concept in the discipline. Within the periodicals that I have set out to analyze, *Mimarlık* seems to be the most responsive to this transformation taking place in international agenda, since all of the articles written on the subject were published there.

The authors who initiate such a transfer, then, become really important and in this case they were quite significant. In the following three years until 1996, only three more articles that directly worked on the concept of sustainability were published in the architectural periodicals under analysis and they were written by three important figures of Turkish architectural scene: Oktay Ekinci, Uğur Tanyeli and İlhan Tekeli. On the outset, what these three figures argued for and how they interpreted the concept of sustainability displayed dissimilarity rather than an agreement. For example, the article written by Oktay Ekinci in 1994 –"Freedom in Architecture: Sustainable Design" (Özgürlüğün Mimarcası: Sürdürülebilir Tasarim) - was an answer to the criticisms stated against Chamber of Architects for the implementation of Environmental Impact

[52] Thus, I have not included this article within the article list of *Mimarlık*.

Assessment (ÇED- Çevresel Etki Değerlendirme).[53] Even without ÇED, he claimed, architects were part of a complex system of relations which continuously limited their freedom while designing. And, at the basis of these restricting relations was not the priority given to the city, society, environment, civilization or culture but an uncontrolled "freedom to invest" which valued economic rent and robbery more than any other. As against these critiques, claimed Ekinci, sustainability was pointing towards an alternative in which, architecture was becoming "dependent" more to cultural and environmental values than to investment. According to Ekinci, the "Declaration of Interdependence for a Sustainable Future" was also arguing for this "universal dependency" to values and was putting it at the center of architectural practices.

Where Ekinci had accented the potential of sustainability as an alternative to conventional architectural practice, Tanyeli perceived it as an illusionary concept and saw environmentalism as just another instrument of economic renewal. Tanyeli, in this article titled "False Ideology of an Age of Despair or Sustainable Architecture" (Umutsuzluk Çağının Sahte İdeolojisi ya da Sürdürülebilir Mimarlık), tracked the transformation of the concept from its earlier interpretation in the *Limits to Growth* (that called for a fundamental change from this world dominated by exponential growth trends to another that aims for a return to global balance) to its "greening" as a new economic opportunity. And, he quoted from Paul Ekins of the New Economic Foundation, as he described the interest in sustainable development as a "masterpiece of business pragmatism which would only intensify unsustainability, in being still dependent on mining, logging, smelting, car and air travel, chemical production and industrial agriculture" (Beaufoy, 1993, p. 200). In that respect, Tanyeli saw the investments made in environmentally friendly buildings just as another form of this deceptive greening of the sector.

[53] As have been reviewed in Chapter 3, by the 1990s environment had already been incorporated into the periodicals under consideration as a central problematic of architecture. One of the significant issues that dominated the articles in the early years of 1990s was Environmental Impact Assessment (ÇED- Çevresel Etki Değerlendirme). Many architects saw these attempts as a limitation to their practice, and this became one of the main discussion topics of Extraordinary General Assembly of Chamber of Architects that took place in 1993.[53] In 1994, a series of texts were published in *Mimarlık* under the title of "Freedom of Design" (Tasarım Özgürlüğü) as a reflection of these discussions. The second article that incorporated sustainability as a term to define the field was part of this folder. This article- "Özgürlüğün Mimarcası: Sürdürülebilir Tasarim'"- written by Oktay Ekinci in 1994, was an answer to the criticisms stated against Chamber of Architects, as he defended ÇED for protecting the architect and architecture in its essence.

The third article written by Tekeli, on the other hand, had provided the middle ground for it both criticized the concept but also saw potential in it, whose realization would depend on the social and political struggles. This article, "Questioning the Basic Concepts of Habitat II" (Habitat II'nin Gündemini Oluşturan Temel Kavramların İrdelenmesi), was written as a response to Habitat II[54], as Tekeli was reviewing some of the basic concepts that shape the agenda of the conference. In that context, the first concept Tekeli reviewed was "sustainable settlements", and it was mainly in this part that he discussed sustainability and sustainable development. Like Ekinci and Tanyeli before him, and like many others that were to follow, Tekeli referenced to *Brundtland Report's* definition of sustainable development to further his arguments. To him, this definition represented the conciliation of the ideology of development of the 1960s with the ideology of environmentalism of the 1970s. In other words, he pointed towards the basic conflict inherent in the concept of sustainable development between environmental and economic considerations. Secondly, it implied two concurrent objectives. The first was related with the "needs" of today, which pointed towards the basic needs of the poor. And second was related with the "needs" of the future generations. According to Tekeli, in practice sustainable development has worked on the second objective whereas it overlooked the first: the spatial dimension of sustainability was ignored whereas only the temporal dimension gained functionality. The discussion on the ethical responsibilities both in terms of spatial equity as well as the temporal (as in the phrase next generations) dimension will be evaluated further in the proceeding sections. Yet, important here was the emphasis Tekeli gave to the social dimension of sustainability to further the effectiveness of the concept.

Relating this discussion with human settlements, Tekeli questioned the consistency of the concept of sustainable settlements in an unsustainable world: Is it possible to talk about the sustainability of human settlements regardless of the social level in which they function? And, if not so what parameters should architects consider in relating human settlements to the social system so that they function as sustainable? This, according to Tekeli was the critical point that needs clarification.

[54] The second influential conference in the introduction of sustainability into the Turkish context was Habitat II that had taken place in İstanbul in 1996. According to Zeynep Durmuş Arsan, Habitat II was an important turning point for the concept of sustainability, which "activated the introduction of notions of sustainable development into the architectural agenda of Turkey," and it resulted in "an increase in the number of non-governmental organizations (NGOs) studying sustainable issues, and an increase in academic research in the universities into related topics."(Durmuş Arsan, 2008, p. 174)

Behind these apparent diversities in the positions of the authors in relation to sustainability, however, rested a much more uniform ground which needs further clarification. As have been reviewed in Chapter 2, right from its inception, sustainable development was assumed incorporate three dimensions: economy, society and environment. And, it was in this contested terrain of the relative relationship between these three pillars that the interpretations of sustainability were mostly constructed. Yet, in the popularization of the concept and its rise as a policy discourse, these three domains were not given equal attention. It was mainly the collaboration of economic development and environmental protection that determined the agenda of sustainable development, and the social dimension remained as the least explored. In that context, the introduction of sustainability into Turkish architectural periodicals displayed a differing character as all the three articles, although they had differing views, were built around ideas on its social potential. On the other hand, and just like the introduction of environmentalism in the previous decade, environmental considerations were being treated as secondary and did not take much place in the discussions. This was partly because, although by 1993, environmental movements such as Gökova and Aliağa Thermal Plant and Antinuclear resistance had been initiated in Turkey, environmental problems were still considered as isolated incidents and insignificant upon those more pressing problems such as poverty and urban transformations. Yet, this time unlike the discussions on environment in the 1970s, the emphasis given to the conflict between the developed and developing had waned and was replaced with the tension between the social and economic dimensions of sustainable development.

This critical approach was enhanced in 1996 as Habitat II was approaching and numerous articles and reviews were published about the conference. In many of these, however, sustainability did not stood out as a significant subject, but remained as a secondary reference in discussing the then more demanding issues such as the social responsibilities of the architects or the problems of urbanization in Turkey. One exception was the review presented by Chamber of Architects of Turkey (TMMOB) about the agenda of Habitat II. Resembling the global and local discussion inherent in the construction of sustainable development, TMMOB was claiming that the new world order was strengthening the local initiatives on the one hand, but implementing the colonialist summit decisions which affect all the societies by destroying participation and public opposition. Thus, sustainable development was perceived to be “the

ideological attacks of international capital movements which tend to forget justice, peace, and labor destroying the boundaries of the social law states (Kurulu, 1996).

4.1.3 A Route for Action

In spite of the criticisms put forward against Habitat II, especially in *Mimarlık*, the conference resulted in "an increase in the number of non-governmental organizations studying sustainable issues and an increase in academic research in the universities" (Arsan, 2003, p. 174). One of the developments was the increasing interest in solar energy, and four solar houses were built between 1993 and 1996. With the mid 1990s, there was also an increase in the number and diversity of the architectural practices which can be categorized under environmental architecture. For example, in 1996 the first eco-village was initiated by a group of young people from universities in Hasandede, Kırıkkale (Arsan, 2003, p. 177).[55] In the same year, one of the first private solar houses in Turkey, "Kemal Demiröz House", was designed by Fikret Okutucu. In 1998 Victor Ananias from Buğday Association for Supporting Ecological Living used traditional building techniques to build small scale examples of environmentally-sensitive architecture: "Karakaya House" and "Sazlam".

These developments, however, were rather new and far from suggesting a broad-based transition in the profession. Thus, they did not find much reflection in the architectural periodicals under analysis.[56] Although the Turkish practices in the field of environmental architecture did not find much reflection within the periodicals, the mid-1990s nevertheless had witnessed a shift from that outer notion of sustainable development into architectural profession's conventional borders. In other words, alongside the constitution of sustainability as a concept in architectural discourse were the investigations on the application of the principles of sustainability to the practice of architecture.

[55] This project was close to what had been defined in Understanding Sustainable Architecture as the "natural image"- with an emphasis on ecological restoration and sensitivity to ecosystems, and the utilization of mud-brick for construction. It had also contained features of the "cultural image", as it tri ed to build cooperation with local peasants and farmers.

[56] One of the exceptions was the article on "Erciyes University Solar House" (Erciyes Üniversitesi Güneş Evi) that was published in 1996 in *Yapı*, as a descriptive review of the history and the features of this solar house.

The folder published in *Mimarlık* in 1996 was significant because, although it was titled as "Environmental Architecture and Planning", it was one of the first issues in which the concept of sustainability was opened to question. The article written by Semih Eryıldız in this folder was especially important for it framed the already existing discussions on environmental architecture once more around the term sustainability, rather than environment. Eryıldız, in this article titled "A Sustainable Introduction to Sustainability Discussions" (Sürdürülebilirlik Tartışmalarına Sürdürülebilir Bir Giriş), started his discussion with one of the most common line of narratives inherent in the discourses of environmental architecture: the extent of the environmental degradation, the need for sustainable practices and the role of architects in such an undertaking. To this narrative, I will return in the proceeding sections, especially on the discussion of the discourse of responsibilities of architects and architecture. Yet, for this article, the significant point is the introduction of the questions of "what" and "how" alongside those earlier critiques of sustainability which were reviewed in the previous section. Acknowledging the importance of sustainability for the survival of the planet, Eryıldız posed three questions: Can architects, as the coordinators and artists of the building processes, contribute to sustainability? What can they do? And, how can they do it?

With these questions Eryıldız was able to shift the discussion from that "outer" notion of sustainable development into architectural profession's conventional borders. This shift was a reflection of an enhanced engagement of sustainability with architecture and its diffusion to the practice. As we have seen in the previous chapter, until the 1990s it was mostly theory-as-guide that defined the terms of the discussion in Turkish environmental architecture. In other words, in the absence of a route for action, the discussion on this rather foreign concept "sustainability" stayed within its own boundaries and did not diffuse into architecture. But as the effects of sustainability as a principle became more visible in the international examples of architecture, the questions of "what" and "how" have gained more assent also in the discourse of Turkish architecture. Especially after the 2000s, sustainability has risen as an important approach and principle that informed the methods of the practice. Thus, "the direction of action" for architects in achieving environmental objectives has appeared ever more in the articles under analysis. Accordingly, the discussion on sustainability has expanded from those generalized commentaries on sustainable development to include those addressing architecture.

For the architects writing on environmental architecture, there was a consensus on the need to establish a more sustainable profession, and now the practical terms of this transition were to be settled. Yet, there was not a single answer to these questions. The answers given to the questions of "what to do" and "how to do it" created a terrain of contradictory approaches and methods that ranged from prescriptions for actions such as design principles, to a search for the potentialities of materials, to suggestions for a transformation of our living patterns.

Returning to the article written by Eryıldız, three domains of consideration was suggested for architects in contributing to sustainability: First; the materials and energy used in the process of building production; second, the light and heat used in the managing of the building; third, is the world of production-consumption generated by the relations of eating, living and transportation that are the outcomes of spatial organizations (Eryıldız, 1996). Although, different formulizations have been proposed in the following years, this answer exemplified the basic concerns that were to shape the field of environmental architecture: the importance given to energy and resource issues, the rise of energy -efficiency as a leading theme in architecture, and the need to go beyond the pragmatics of building and establishing a philosophy. In all these three domains, there was a need to define a "true" and "incontestable" definition of sustainability (Guy & Farmer, 2001, p. 140) which would clearly outline the design strategies and their applications in architecture. Thus, lists, categories and systematizations of "sustainable architecture", in the form of criteria or plans of action begun to appear ever more in the articles.

4.2 Becoming Mainstream: 2001-2008

The period between 1996 and 2001 had witnessed a break in the usage of the term "sustainability" in the periodicals. This did not mean that the concept did not take any place within the articles. It was uttered within the texts, but could not be transformed into a theme directing the discussions or was not used as word defining the field as a whole. Starting with 2001 this begun to change and the concept of "sustainability" had witnessed a boost of interest which lasted until 2003. Accordingly, the contradictions between the economic and social dimensions of sustainability were lost and it was mostly along the lines of the application of the principles of

sustainability to the practice of architecture that the discussions were constructed. There was an increase in the scope of the issues covered under this title such as social housing, building materials or natural ventilation in high-rise buildings. Thus, the field was increasingly identified with sustainability, and "sustainable architecture" had become a commonly agreed term for its portrayal, which can also be followed from the titles of the articles published in this period. This rise of interest was followed with two years of silence on the concept in 2004 and 2005, and later, a two year of intense dissemination of the concept in Turkish architectural periodicals.

Interestingly, though, *Mimarlık* which had dominated the articles on the subject in the previous section did not take any part in this transformation, whereas the other three periodicals all responded to its changing interpretations. For example, both *Mimarist* and *Arredamento Mimarlık* had published a folder under the title of "Sustainability and Architecture" (Sürdürülebilirlik ve Mimari) with one year intervals. In both periodicals, there was an attempt to cover a wide range of issues from buildings to the scale of the urban. Thus, the discussion on sustainability covered only a part of the issues that can be deduced from these folders which will continue to be analyzed in the following chapters. In this section, however, the emphasis is on the construction of an understanding of what a "sustainable building" should consist of, as well as building of its image. In that context, both periodicals presented a similar approach with *Yapı* in terms of the model they suggested for Turkish architecture.

4.2.1 "West" as an Example

In answering the questions of "what" and "how" in the field of environmental architecture, Turkish architectural periodicals had turned to international examples. In that context, translations, as well as the exemplification of built examples from the world played crucial role in the construction of the discourse around sustainability and its implementations in architecture. For example, for the periodical *Yapı*, one of the earliest appearances of sustainability took place in 1997 and it was a translation of an article written by the director of The Finnish Building Information Institute titled "Environmental Declaration of Building Products". This article differed from the earlier ones published in *Mimarlık* in that sustainability was discussed in relation with the construction of buildings with the notion of "sustainable construction" and around

issues such as Life Cycle Analysis or how to incorporate ecological criteria to design guidelines. These were subjects which would become more popular in the Turkish architectural periodicals in the second half of 2000s. One year later, in 1998, *Yapı* published another translation, this time of Richard Rogers- a well-known architect and a representative of high-tech architecture. This was a one page review of his lectures edited under *Cities for a Small Planet*, in which sustainability was used in defining an ideal model for cities and as a holistic approach to urban design. In 2002, the presentation given by German Prime minister Gerbard Schröder in the Berlin Congress of the International Union of Architects was translated. These three articles, in terms of their focus of subjects were rather disconnected, but they were effective in rendering the increasing interest and the widening scope of practice in the international agenda of architecture.[57] Moreover, these figures represented the three main domains defining the field: the market in the first, the architectural culture in the second, and the government in the third article. As it will be more clearly put forward in the following chapter, it was the collaboration of these three spheres that increasingly defined the field of environmental architecture after the second half of the 2000s.

For the period between 2001 and 2003, the main mode that these international influences had entered the articles was through the review of built works. The effects of this mode of engagement were diffuse and effective because it was directly related with the products of the architectural practice. In the end, "the primary symbolic capital within the field is reserved for constructed works of architecture" (Owen & Dovey, 2008, p. 11). The increasing interest in the examples –and especially Western ones- reflected the shifting symbolic ground of the field, and in that respect increased the visibility and credibility of environmental architecture in Turkish architectural periodicals. There were two main types of examples: first of all the works of star architects and later European examples. These two domains represented what Mark Jarzombek had detected in 1999 as "two different strands of accommodation: one comes from the direction of domestic architecture, and the other from the direction of the corporate" (Jarzombek, 1999, p. 33). The first was represented with design-build

[57] In that context it was not surprising that the first appearance of sustainability in *Arredamento Mimarlık* was in 2000 with an article written about the European Architecture Students Assembly (EASA) that was to take place in 2001 in Turkey. The initial theme, influenced by the immense effects of Marmara earthquake that happened in 1999, was earthquake. But, it was abandoned in favor of a more "inclusive" concept, that of "sustainability"- that was considered to better reflect the diversity and complexity of the assembly. Such a shift in focus reflected the changing conditions of the term in the world, as well as its overriding influence in Turkish architecture.

projects, “green” housing projects, “self-sufficient” houses, “solar” houses, and “Eco villages”, whereas the second represented “the emergence of a billion-dolar industry in green-equipment and green technology” (Jarzombek, 1999, p. 33). In each case, however, the adaptation of the practice implied in these examples into the specific context of Turkish architectural profession was left unquestioned. The subjects were discussed as universal solutions to definite problems. Especially the first articles on the sustainability were very generalistic, more like a list of names then an interpretation of sustainability in architecture. For example, the first article that appeared in *Yapı* under the title of “sustainable architecture” was a collection of some of the most popular architects of the early 2000s, such as Renzo Piano, Norman Foster, Nicholas Grimshaw, Richard Rogers, Jean Nouvel, William Alsop (Özgen & Eşsiz, 2001). The article, titled “The Link between Sustainable Architecture and High-Tech: Eco-Tech” (Sürdürülebilir Mimarlık ve İleri Teknoloji İlişkisi: Eco-Tech), was about the relation between “sustainable architecture” and high-tech, which was titled by the writers as eco-tech. Yet, the writers left the line between high and eco rather blurry, and for most of the examples the environmental parameters that made them significant were not stated. Instead, it was the names and architectural examples that stood forward, in a way informing Turkish architects about the changing orientations of the international agenda of architecture.

In the following years, the handling of the subjects reviewed -especially their technical aspects- had become more established. For example, in 2003 the article “Towards a Sustainable Architecture: Ecoparc Project and Necuatel Federal Statistics Office Building, Switzerland” (Sürdürülebilir Bir Mimarlığa Doğru: Ecoparc Projesi ve Neuchatel Federal İstatistik Bürosu Binası, İsviçre) focused on a single example, analyzing in a nine page review both the process, the principles and the methods in achieving sustainability in this building. This can be viewed as an attempt to better engage with the field of environmental architecture, as well as an answer to the questions of how to apply sustainability principles into architecture. A few months later, Canan published another article, again with an example from Switzerland- Lyss Forest Rangers School. Yet, this time the focus was exclusively directed to the use of timber as a construction material of environmental architecture.

As the review so far reveals, starting with the 2000s, there was a widening of scope in terms of the issues and subjects discussed under the label of sustainability from photovoltaic panels to building materials to urban regeneration. Yet, it was not possible

to detect a similar broadening in the attitudes of the writers in their interpretation of sustainability, firstly because of the type of the examples they have chosen to support their arguments. Norman Foster and Ken Yeang were two of the architects that stood forward in the articles under consideration. Foster was known for his "high-tech demonstration that the notion of sustainability, even at a corporate scale, could encompass energy efficiency or eco- friendliness" (Mallgrave & Goodman, 2011, p. 219). Yeang, on the other hand, placed more emphasis on the passive strategies and argued for a symbiotic relation between natural and built environments. Nevertheless, he also worked at the corporate scale and in many ways incorporated a high-tech vocabulary. In that sense, both architects reflected the "technocist supremacy" that dominated the field of environmental architecture (Guy & Farmer, 2001, p. 140). According to Guy and Farmer, the rhetoric of "The Ecotechnic Logic" of environmental architecture, tended to "be overwhelmingly quantitative, success is expressed in the numerical reduction of building energy consumption, material-embodied energy, waste and resource-use reduction, and in concepts such as life-cycle flexibility and cost-benefit analysis" (Guy & Farmer, 2001, p. 141). Accordingly, in the periodicals under consideration such a discourse-based on numeric justification and the criteria of performance- begun to find more reflection, not only under the title of sustainability but covering the whole range of practices involved with environmental architecture. Against this background, it is possible to claim that, within the periodicals under analysis a certain understanding of sustainability dominated, one that was based on the criteria of performance. This in return created a field of reference according to which the success of a sustainable building was being decided.

Also of importance was the geographical specificity of the examples in representing sustainability. Other than the works of specific star architects, it was mainly the European model that dominated the Turkish architectural periodicals. Under a closer look, these examples presented more diversity in terms of the strategies and the values they suggested when compared with the works of "star" architects. They, nevertheless, continued to reflect the social and economic conditions of the architectural profession in their countries, which in many ways contradicted with the local realities of Turkish practice. The adaptation of the knowledge implied in these examples into the economic and social system of Turkey, however, was left unquestioned. Practices of sustainability from other parts of the world, on the other hand, were totally disregarded.

Table 1. Review of the "sustainable" examples chosen to support the texts between 2001 and 2003.

2002 YAPI	**Ahmet Koçhan/ "Ecological Design for a Sustainable Future" ("Sürdürülebilir Gelecek İçin Ekolojik Tasarım").** This time the field of environmental architecture was analyzed under three headings: retrofitting, environmentally-sensitive design and intelligent buildings. In each case, the concept was briefly reviewed, and not surprisingly, then supported with architectural examples. The name that stood forward was Norman Foster, who was echoed in all three categories with three different buildings: German Parliament, Albert Camus Lycee, and Commerzbank Headquarters. Some of the other names and buildings mentioned were: Herzog &De Meuron, Jourda& Perraudin, Grimshaw &Partners. Only one example from Turkey was mentioned and it was under the heading of retrofitting: Feshane in İstanbul.
2002 MIMARIST	**Emre Ayaz / "Yapılarda Sürdürülebilirlik Kriterlerinin Uygulanabilirliği."** Emre Ayaz after grouping the criteria for sustainability under three headings (ecology, comfort, feasibility) was supporting his argument with four examples: Commerzbank and German Parliament by Norman Foster, zero energy house in Switzerland, and Daimler-benz Headquarters by Richard Rogers.
2002 MIMARIST	**Gül Köksal, Deniz İncedayı, Ahmet tercan /"Sürdürülebilir Mimarlık Örnekleri."** The article continued with the second tendency of introducing European examples. In this article, three projects from Germany, and one house of Glenn Marcus Murcutt from Avustralya was analyzed.
2003 YAPI	**Ahmet Koçhan/ "Doğal Çevreyle Kurulan Anlamsal Bağ: Sürdürülebilir Toplu Konut Tasarımı".** Koçhan, this time focused on sustainable social housing. Here again, he chose to elaborate his discussions with examples. Yet, this time, rather than the commercial or the corporate, it was the house and its settlement that were under analysis. With this shift, the process of exemplification was enlarged from that of "star architects" to include more specific examples of successful architecture. However, the western influence still continued. The examples he chose were mostly European such as: Atelier 5 from Germany, Jürgen Horneman and Peter Vetsch from Switzerland, Bill Duster from England, Baumschlager & Eberle from Austria, Kempe & Thill from Holland. There was only one example from USA, STITT Energy Systems, and one example by Hamzah and Yeang from Malaysia.
2003 YAPI	**Aydan Özgen and Ayşin Sev / "Yüksek Binalarda Sürdürülebilirlik ve Doğal Havalandırma."** The second article written by Özgen, this time with Ayşin Sev, was suggesting a similar shift. As have been reviewed, in her first article, Özgen was presenting a jumble of names and projects, but her interpretation of the environmental in architecture was not well illustrated. This article, written two years later in 2003, echoed similar names, but presented a more thorough review of the architectural products. The subject was natural ventilation in high-rise buildings as a strategy for sustainable architecture, and it was examined through the buildings of Ken Yeang, Norman Foster's Commerzbank Head Office, and Stadttor Building by Petzinka, Pink and Partners.

(cont. on next page)

Table 1. (cont.)

2003 ARREDAMENTO MİMARLIK	Türkan Göksal/ "'Mimaride Sürdürülebilirlik – Teknoloji İlişkisi: Güneş pili Uygulamaları". The article written by Türkan Göksal focused on a specific subject, that of the integration of photovoltaics into architecture and supported this analysis with an examination of the examples. The main building Göksal referred to was Mont-Cenis Academy by Jourda & Perraudin, and that was strengthened by additional examples from Europe such as: Solar-Fabrik Building by Rolf& Hoz, Ökastation Building by Möhre& Partners, Schlierberg Solar Houses by Rolf Disch and Stawag Building by Georg Feinhals.
2003 ARREDAMENTO MİMARLIK	Seda Tönük/ "'Sürdürülebilir Mimarlık Bağlamında 'Akıllı Binalar'". Seda Tönük, on the other hand, wrote an article about intelligent buildings (akıllı binalar) in the same folder, which she supported first of all with three –by then well-known- examples of environmental architecture: Commerzbank Headquarters by Norman Foster, as well as his Chesa Futura Apartment, and Menara Mesiniaga by Hamzah& Yeang. After these international architects were mentioned, she continued with mostly European examples from Norway, Germany, Switzerland and one from Japan.
2003 ARREDAMENTO MİMARLIK	İpek Sönmez /"'Sürdürülebilir Kentleşme için Karar Verme Süreçlerine Halkın Katılımı". This article introduced a new subject under the title of sustainability that of "sustainable cities". Here again, however, the support for the discussion came from European examples. After presenting European Awareness Scenario Workshop (EASW) and Global Action plan (GAP) as two approaches in maintaining community participation in sustainable urban regeneration, İpek Özbek Sönmez reviewed five different projects from Europe under the coordinate of the Institute for the Urban Environment.

4.2.2 Global Influences and Local Realities

In Turkish architectural practice, on the other hand, this period was witnessing a small- but increasing- interest in environmental issues. Zeynep Durmuş Arsan illustrated these developments in her thesis *A Critical View of Sustainable Architecture in Turkey: Proposal for the Municipality of Seyrek.* In this period, eco-villages such as Foça Ecological Village (2000) and Ankara- Sun Village (2001) were being formed, private houses built with traditional building techniques or with local materials such as Karakaya House (1998), Erol Toprak House (2002), and Ahmet Kizen House (2002) were being built. The private sector was also begininning to take interest- such was the case with Tepekent Experimental Ecological Village Design (1999) that advertised green design. The colloboration of Clean Energy Foundation with the sponsors from private sector and Hacettepe University resulted in Solar House and Science park in the UN Tent City in 2000.(Arsan, 2003, p. 190) Ecotourism was becoming a popular concept which claimed to put an emphasis on the ecological, social and cultural values

of the region with examples such as Naturland Eco Park (1998), "Living earth" Project (2000), Durudeniz Holliday Village (2001) and Club Natura Oliva Hotel (2002).

These cases, however, did not find much reflection in the periodicals. Rather, this period was dominated with an interpretation of environmental architecture in Turkey as being "weak", which had formed a contrasting portrayal against the proliferation of the Western examples. For example, according to Semih Eryıldız:

> In our country, energy efficienct construction and project examples are still very few so that they can be covered in a single article…Yet, apart from the difficulty and slowness in creating the necessary will and demand, the indifference and ignorance within the architectural environment is important.(S. Eryıldız, 2003, p. 90)

Demet Irklı Eryıldız took the argument one step further by questioning the validity of the works labelled under sustainability in Turkey:

> In Turkey the situation is miserable. Is it possible to catch up with the era, by adding sustainable to the titles of some articles or by winning a first prize by adapting a wood structure designed by a colleague who wasted his life on ecological architecture?(D. I. Eryıldız, 2003, p. 75)

As can be followed, the architectural products of this period begun to display a diversity that ranged from small scale experimental projects to commercial settlements. Yet, rather than reflecting the diversity of the field or the complex problems inherent in the practice, articles dwelling on Turkish examples re-established the already existing binary oppositions in Turkish architectural discourse between West and East, Developed and Developing, First World and Third World (Yücel, 2007, p. 205)- and to those they have added "technocentric versus ecocentric" or "mainstream or radical" approaches. Susannah Hagan in her book *Taking Shape* was distinguishing two distinct groups in the emergence of environmental architecture in terms of taking vernacular buildings as a model: "those who are pursuing an anti-industrial, pro-craft vernacular revival, and those who see it as a source of valuable principles and tried and tested techniques of passive environmental design" (Hagan, 2001, p. 103). In the earliest representation of the "sustainable" practices in Turkey, a similar tendency could be detected.

Not surprisingly, then, one of the first articles analyzing a non-Western example was about vernacular architecture and traditional settlements: Derya Oktay's article "From the Traditions of the Regional Architecture of Northern Cyprus to Contemporary and Sensitive Environments: Planning and Design in the Context of Sustainability" (Kuzey Kıbrıs'ta Yöresel Mimarinin Geleneklerinden Çağdaş ve Duyarlı Çevrelere Sürdürülebilirlik Bağlamında Planlama ve Tasarım) (Oktay, 2002). This article was

published in 2002 in *Mimarist*, in the folder titled "Sustainability and Architecture". The first part of the article was typical in that Oktay was reflecting on the concept of sustainability, and presented a brief and universal history of "ecological or environmentally sensitive" architecture. Here, Oktay acknowledged the difference between the Northern World and the developing countries in terms of the awareness and sensitivity given to environmental architecture:

> Although the approaches to ecological and environmentally-sensitive design in the building scale are generally better understood when compared with the urban/regional scale, and although there have been great improvements in the world (especially in northern European countries and North America in recent years) in this field, in the vast majority of the Architectural activities taking place in the cities of the developing world, this type of consciousness and sensitivity cannot be found. (Oktay, 2002)

The distinction between the "developed and developing" was then transformed in the second section into an opposition between the "traditional and modern", exemplified in the comparison between the traditional settlements of Northern Cyprus with that of cities. Here, the cities were characterized with the notion of urban sprawl (çarpık kentleşme), which resulted in "the encircling of the cities with scattered and unqualified settlements, the damage given to the urban fabric in the city centers, the disappearance of the historical, socio-cultural and natural values, and as a result of these, the loss of urban identity and the decrease in the quality of life". The review of the traditional settlements, on the other hand, was presented as an alternative to all these negative features that shaped the modern urban life. Obviously, such an argument was not new and had already existed in Turkish architectural discourse. The novelty, however, came with the insertion of sustainability into this representation. Oktay proposed an analysis of the physical, social, and climatic features of these settlements, but their connections with the discourse of sustainability was left unanalyzed and open. In the overall, what this article implied was more like a variation of an already existing opposition between the social and physical values of the vernacular as against urban life, than a systematic analysis of the sustainability principles inherent in traditional settlements and their adaptation to contemporary practice. Thus, it resulted in an association of the vernacular with being "sustainable" and the cities of North Cyprus with "non-sustainable".

Addressing the vernacular as an alternative model for achieving sustainability in architecture was not limited to periodicals. A similar tendency could also be observed in

the conferences organized around the issue of environmental architecture in Turkey.[58] This tendency was also evident within the international agenda of architecture, as observed by Ahmadreza Foruzanmehr and Marcel Vellinga, in their article "Vernacular Architecture: Questions of Comfort and Practicability". According to the authors, starting with the 2000s, there had been a growing interest in the sustainability of vernacular architecture (Foruzanmehr & Vellinga, 2011, p. 274).

The second article which worked at the local level was published in 2003 in *Arredamento Mimarlık* as a part of the folder "Sustainability and Architecture". In this article titled "Ecoarchitecture Buildings and projects" (Ekomimarlık Yapı ve Projeleri), Semih Eryıldız -as one of the leading writers on the subject in the architectural periodicals under analysis- reviewed his recent buildings and projects of "environmentally sensitive architecture". Eryıldız reviewed six projects- four built and two remained as proposals. More striking, however, was the contrast between these and the earlier foreign examples presented in the periodicals. First of all, these were very small-scale projects: two very small houses (one of them being 44.8 m2), a group of summer houses built underground, and a cell station. For the built projects, Eryıldız was referencing to "small is beautiful", emphasizing the vernacular building techniques and promoting the usage of natural materials such as straw bale. Some features of the text were in line with the passive solar principles of the earlier examples, but the justification that came with the numeric accounts of energy-efficiency was lacking in this article. So, against the "technocist supremacy" that we mentioned earlier, in this interpretation of sustainability the question of technology was disregarded to a large extent. The real contrast, however, revealed itself in the chosen images of the built projects. There were three images of the built works: one of an adobe house built in Hasandede, two of Durudeniz underground houses. Hasandede house was presented with a very close-up shot of a, what seems to be a not yet finished, wall and eave of roof. The image, however, said nothing about the spatial or the environmental qualities of the building, but remained as a depiction of an adobe wall. The first image of Durudeniz underground houses, on the other hand, revealed more of the frontal façade.

[58] For example, in "International Ecological Building Design and Materials Seminar" organized in 2005 by the Chamber of Architects of Turkey, two of the seven presentations were related with vernacular architecture: the first being about adobe, the second about traditional Şam houses. In "Ecologic Architecture and Planning Symposium" organized in 2007; within the thirty-six papers published in the proceeding book seven of them fell under the subject of vernacular. For the following "International Ecological Architecture and Planning Symposium" held in 2011, the proportion has decreased, nevertheless ten articles out of seventy-six were related with sustainability in vernacular architecture.

But, its accompanying image was basically about the soil covering the roof and the parapet wall. In overall, the architectural quality of these photos was very weak, and even for the features that were typically associated with the vernacular, let alone environmental, they remained too raw.

The images accompanying these examples also revealed a tendency towards low-tech, experimental architecture. Yet, these images rather than becoming a part of a certain place or "genius loci" stood as distinct examples of experimental architecture. The language Eryıldız used, however, changed considerably when presenting the unbuilt projects. For example, in the "Eco House" project designed for an international competition, the emphasis given to vernacular building techniques or the rhetoric of "small is beautiful" was lost to a great extent. The use of natural materials was still important, but it was brick, wood and volcanic stone that replaced adobe and straw bale. Moreover, Eryıldız was promoting steel and glass and the technological innovations which made them more efficient as part of the ecological architecture. In contrast to the earlier absence of technology, here Eryıldız was supporting the adaptation of computer aided techniques of energy-efficiency in creating "harmonious, comfortable, qualified, aesthetic and healthy buildings" (S. Eryıldız, 2003, p. 88). Thus, there was a difference in the language and articulation of the built and unbuilt examples. For example, the methods and techniques proposed by Eryıldız in achieving "ecoarchitecture" in the unbuilt projects were quite different from that of the built examples, especially in terms of technological integration. The indifference towards the contemporary technological innovations inherent in the built projects, then, may not be solely the result of the choice of the architect but is also related with the transfer of technology.

This article, then, pointed towards a possible disparity between the intentions of the architect and the technological capabilities of the profession. In the end, the transfer of technology required not only the importation of knowledge, but involved complex processes such as the training of skills, analysis of changing costs of production and transportation as well as the organization of the phases of construction specific to each context. In the absence of such an analysis for Turkey, however, the discussions of locality resonated solely along the lines of technology versus ecology distinction as in the case of technocentric versus ecocentric approaches. It was not that these were totally irrelevant issues in examining the status of environmental architecture in Turkey, but remained incomplete when the more intricate questions that were raised with the implementation of technology into specific contexts were disregarded. In overall, this

period resulted in the popularization and the dissemination of the term, which on the one hand proposed complex question for the profession, as well as a terrain of confusion.

I follow William Mark Adams as he claims in his book *Green Development: Environment and Sustainability in a Developing World* that there are no easy solutions but only hard decisions to the question of sustainability which is "contingent on endlessly repeated dilemmas in different places and at different times" (Adams, 2009, p. 363). Thus, both the absence of non-Western examples of sustainable practices in Turkish architectural practices, and the representations of Turkish environmental architecture as low-tech or vernacular buildings reflect only a portion of the complexity of the discourse. The review we have done so far had revealed that local conditions and forms of local knowledge were largely ignored in Turkish architectural periodicals. The articles trying to bridge that gap, on the other hand, have the risk of presenting an over-romantic view of local knowledge. Quoting again from Adams:

> …what gives a strategy its alternative, indigenous orientation is not its content (i.e. that it uses indigenous technologies) but rather its goal (i.e. that it aims to increase local control of social change)"[59] (p. 88; emphasis in the original). The importance of indigenous knowledge therefore lies less in the technical superiority of existing over new ideas (although this may hold true) than in issues of ownership of ideas and control of change. (Adams, 2009, pp. 364-365)

The years 2006 and 2007, on the other hand, had witnessed a limited but increasing coverage of Turkish architectural practices in the periodicals. On the one hand, the distinctions that had defined the previous examples on Turkish architecture - such as the comparison between modern versus traditional buildings- had continued to appear. For example, the article "Sustainable Flat Design" studied traditional and modern flat types in Ankara, and in return presented an apartment type that made use of natural resources. Here, traditional houses were represented as being "responsive to local climatic conditions, topography, physical texture, the environment and ecology, using locally obtainable natural materials." In modern flats, however, "very little use" was "made of solar and wind energy for heating and cooling". Yet, these distinctions no more resulted in a call for a return, but the "knowledge" gathered had developed into a prototype for a "Sustainable Flat in Ankara". In that respect, this article represented the

[59] Bebbington, A. J. (1996) 'Movements, modernisations and markets: indigenous organisations and agrarian strategies in Ecuador', pp. 86–109 in R. Peet and M. Watts (eds), Liberation Ecologies: environment, development, social movements, Routledge, London (1st edn).

transformations taking place in the field of environmental architecture towards standardization with an emphasis on the issues of energy-efficiency. Consequently, the article ended with a list of principles that led to a 40% reduction of the energy consumption. Similarly, the second article "Sustainable Home Satisfaction"[60] (Sürdürülebilir Konut Memnuniyeti) had related total quality management systems with that of environmental management systems. And, the authors claimed that they were both useful tools in enhancing "customer satisfaction". This was a move towards more and better standardization and was in accordance with the rise of rating systems in the following years as the main determiner of sustainability in architecture, as well as with the growth of the "green building industry" in Turkey which enhanced the discussions on the market value of green buildings.

The growth of the green industry had also led to an increase in the number of examples covered in the periodicals. The first issue of Ecology in *Yapı: Solid Steps in Ecological Architecture* that was published in Yapı in 2007 was important in that context, as it presented three specific examples from Turkey. Interestingly though these reviews revealed rather diverse inclinations: one straw- bale house built under the coordination of Buğday Ekolojik Yaşam Derneği, EKOyapı designed by HAS Architectural firm for İTÜ, and a summer house designed by Nevzat Sayın in Mazı. All these practices were rather different in their approaches, as well as the discussions considered under their reviews. For example, in "İstanbul Cumhuriyetköy Saman Balyası Evi" it was the building material, in EKOYapı it was the adaptation of the design process to the principles of LEED certificate systems, and in "House in Mazı" it was the small interventions and additions that did not affect the overall architectural quality of the building but enhanced its energy efficiency, that stood forward. In overall, these examples suggested the expansion of the practices of environmental architecture as well as pointing towards the challenge of categorizing the complex and plural nature of sustainability in architecture.

This challenge was taken up in 2008 by Zeynep Durmuş Arsan in her article "Sustainable Architecture in Turkey" (Türkiye'de Sürdürülebilir Mimari) in *Mimarlık*.(Durmuş Arsan, 2008) After acknowledging the limited content and number of buildings in Turkey that could be categorized under this title, Arsan presented a survey of the built architectural examples. These were categorized under six headings:

[60] Original translation.

eco-villages, private houses, buildings for earthquake regions, public buildings and experimental solar houses.[61] In overall, this article was more comprehensive and inclusionary in terms of covering a wide range of examples from Turkey. Yet, it also displayed continuity with the previous ones for its favoring of locality –such as traditional building techniques and local materials- and the social inclusiveness of the projects. The comparison between traditional and modern, however, had transformed into what may be loosely interpreted as a distinction between "mainstream" attitudes to sustainability and more radical approaches. The claims for locality in the Turkish architectural periodicals- at least at the level of discourse- were mostly associated with the ecological and social pillars of triple-bottom line.[62] In return, they were contrasted with those projects which directly reflected the economic logic of globalization such as gated communities in the periphery of Istanbul. According to Arsan, in these buildings sustainability was mainly used as a tool to increase their commercial value. However, she claimed, "luxurious, secure and "ecological" settlements which depended on excessive resource consumption contradicted the discourse of sustainability." Here, sustainability was considered to be something more than "those "energy-efficient", "ecologic" or "intelligent" buildings which rely on high technology, produce their own energy, consume less energy and utilize passive systems" (Durmuş Arsan, 2008). In fact, sustainability after 2008 begun to be differentiated from those practices and was

[61] The first group two groups mostly referenced vernacular architecture as a source of inspiration and basis for design. The interpretation of these examples by Arsan was rather positive revealed in phrases such as: "in these houses, there was a conscious reference to local craftsmanship, to technical and tectonic structure and to local materials such as stone, adobe and brick" or "In Erol Toprak House an architectural approach is applied that is both harmonious with Kayaköy's traditional fabric and sensitive to ecological life." Building with traditional techniques, using local materials and respecting the community were the salient features of these buildings as interpreted by the author. Secondly the use of timber was emphasized. Serhat Akbay House was relevant because the timber components were processed locally and thus, the project supported the economic sustainability of the region. Similarly, Green Valley Housing Cooperative was also underlined because of its social underpinnings- the clients' preferences were researched before the design and they were reflected in house types. Thirdly, a very brief review of passive solar designs was presented, and they were supported with a cost-benefit analysis: "an increase of 11.6% in the budget for the construction has caused the decline of 86% on heating costs." The tone of the article, however, changed considerably when discussing the new housing developments on the periphery of Istanbul. According to Arsan, in these buildings sustainability was mainly used as a tool to increase their commercial value. However, she claimed, "luxurious, secure and "ecological" settlements which depended on excessive resource consumption contradict with the discourse of sustainability."

[62] It also revealed that there has been an increase both in the number and variety of the projects built in Turkey since late 1990s. Yet, claimed Arsan, when compared with the overall building stock they remained insignificant. Similarly, Semih Erkaslan, in the last paragraph of his article pointed towards the fewness of sustainable practices in Turkey. This was due to the reluctance of the market as well as the indifference and ignorance of the architectural platform in Turkey.(S. Eryıldız, 2003)

increasingly associated with the social dimension. The diversity in terms of the representation of the Turkish built examples, on the other hand was quickly lost in the following years, as the Turkish examples covered were mostly chosen from buildings which got a building certificate.

4.2.3 The Contested Nature

The question of how to apply sustainability into architecture created a terrain of contradictory approaches and methods that ranged from prescriptions for actions such as design principles, to a search for the potentialities of materials, or to suggestions for a transformation of our living patterns. In that context, sustainability became like all-purpose cement uniting differing approaches and practices under its title. Resembling the discussions on sustainable development, this was perceived both as strength and a weakness. In other words, the contradiction inherent in the concept of sustainability was also evident in its adoption in architecture. It was conceived as a strength, because it created a common language between differing actors involved in architecture from practicing architects, to businessman or academicians. In other words, sustainability had become a bridge reconciling the economic concerns and environmental considerations. Thus, it was understandable that the dissemination of the term "sustainable" went in parallel to the transformation of the field of environmental architecture from its radical positions into a mainstream movement.

In that context, one of the strategies used was the incorporation of a certain definition of sustainability into the articles, which was conceptualized with reference to several key conferences. The definition of sustainability in these studies was mostly associated with the definition of sustainable development and accompanied by a linear historiographical review, mostly mentioning two significant conferences: "1987 United Nations World Commission on Environment and Development Conference" (also referred as Brundtland Conference or Report) and "1992 United Nations Conference on Environment and Development" (also referred as Earth Summit or Rio Conference). There are also some authors who reference a more detailed historiography, such as Deniz İncedayı who points out Limits to Growth (1972), Kyoto Summit (1997), and "Johannesburg World Summit on Sustainable Development" (2002), as important markers.(İncedayı, 2004) Nevertheless, in the architectural periodicals under

consideration “Brundtland and Rio” stand out as the hallmarks in the evolution of the notion of sustainable development, and uttered in nearly all of the articles that explicitly work on the concept of “sustainability”.

The most evident influence of such a historical interpretation revealed itself in the definitions of sustainability and sustainable development. The definition of sustainable development as it is given in ‘Brundtland Commission Report’ known as *Our Common Future* “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (World Commission on & Development, 1987, p. 43), has been the most popular and stated version, both in the world and in the architectural periodicals reviewed for this thesis. In fact, for the articles under analysis within the last twenty years, it has become the most pervasive definition used in describing, not only sustainable development, but sustainability and in some cases sustainable architecture. In that sense, it is one of the leading notions in the constitution of environmental discourse in architecture.

But, how can a single definition be shared by such diverse subjects and approaches in architecture? In answering this question, two points need emphasis. First of all, the success of Brundtland’s definition lied in its vagueness. Especially, the discourse on limits and needs inherent in this text were left open and it failed “to address directly the difficult questions concerned with levels of growth, what kind of needs should be satisfied, and how available resources should be distributed” (Fischer & Hajer, 1999, p. 10). In lack of such an analysis on the principal questions, sustainability and sustainable development have become vague assumptions that could be utilized by any means or approaches. Thus, a consensus on the desirability of something called sustainable development has emerged, but as a guide it was open to interpretation.

A similar mechanism was also evident in Turkish architectural periodicals. Many authors have incorporated elements from Brundtland Report’s definition, and created an “intertextual chain”. Thus, phrases such as:

> Sustainability covers futuristic approaches, which fulfills the needs of both the current and future generations as it provides a fair utilization of the environment and resources between them. Common action of the individuals of a society is an important factor in success. (Ahmet Koçhan, 2002, p. 46)

Or,

> In parallel with these facts, in most of the developed Western countries, sustainability positions itself as a key-concept determining the approach of government to urban planning system, and as a worldview aiming at fulfilling the economic, environmental and social needs without destroying the life conditions of posterity. (Oktay, 2007)

became commonplace and popular. Thus, the nearly exact definition of sustainable development and sustainability begun to be shared by quite detached subjects of environmental architecture: that of urban design (Oktay, 2001), sustainable materials (Esin, 2006) and natural ventilation (Ayşin Sev, 2003). Yet, very few articles were published on the critical interpretation of this definition, questioning the needs of the present and future in terms of the built environment. In most cases, this definition was taken as a given, and it was assumed to imply shared values and common interests for architecture.

Yet, in time, this dissemination began to be perceived also as a weakness, because the vagueness inherent in the term sustainable landed itself to a variety of approaches and to almost any objectives. As Susannah Hagan claimed, it is "the vagueness and ambiguity of the word 'sustainable'" that "makes the term 'sustainable architecture' equally vague and ambiguous" (Hagan, 2001). In fact, this "interpretative flexibility of sustainability"(Guy, 2005, p. 468) had begun to be perceived as one of the key characteristic of "sustainable architecture". There were two specific ways that this contested nature revealed itself in the articles under consideration: first, in the fixation of the contested nature -mostly as a problem- and secondly, presenting a confusion of concepts and ideas in the text itself.

By the mid-2000, both the vagueness of the term sustainability and the contested nature of "sustainable architecture" had become highly discussed topic of environmental architecture. The introduction to the folder of "Sustainability and Architecture" published in *Arredamento Mimarlık* in 2003, was detecting a similar diversity inherent the problematic of sustainability:

> If, on one side, there locates the attempt of a "return to nature" oriented to producing the Architectural product by the simplest technological processes; on the other side, there is the technologism aiming at designing in a manner to react to environmental conditions in the most effective and least harmful way. On one side, there is the defense of naturalism, and on the other side, re-functionalism of the technology in order to contribute to sustainability. For the former one, we may talk about the fear of high technology; while for the latter one, we may mention the belief of that technology can cure the destructed nature.

Echoing the distinction on the "technocentric versus ecocentric" approaches, this statement however was not furthered as to form a conclusive judgment. Rather it stayed as a descriptive assessment of the field of environmental architecture, stating that it was

far from being homogeneous. The choice of the image accompanying the introductory text, on the other hand, was more interesting and revealed the critical tone of the editors about the vagueness of the values and strategies involved in the field of environmental architecture better. It was an image of a roly-poly (hacı yatmaz), a toy which rights itself when it is pushed over, resembling the critique that sustainability can mean anything and lend itself to any purposes.

The first article of the file- "Ecological Architecture in the Folder of "Sustainability and Architecture"- written by Demet Irklı Eryıldız was both emphasizing this contested nature, as well as presenting a jungle of issues echoing a similar confusion. Eryıldız, in proposing a historical review of environmental architecture, was referencing to Vitruvius, Marks, "limits to growth", ecocentric versus technocentric approaches, eco-socialism and Murray Bookchin, Buckminister Fuller, Arne Naess, and 1993 UIA Conference. These diverse references were summed up with a review of 2002 UIA Berlin conference and the questions posed after. Yet, the architects mentioned in the text were Norman Foster, Ken Yeang and Thomas Herzog who did not fit easily with the theoretical background put forward earlier. Against this background, the article ended with a discussion of the condition of environmental architecture in Turkey. According to Eryıldız, a paradigm shift was taking place in the discipline of architecture yet Turkey was far from responding to these changing priorities.

Throughout the 2000s, the attempts to understand the contested nature of environmental architecture continued to take place in the architectural periodicals. Two months later, again in *Arredamento Mimarlık*, a translation of an article written by Mark Jarzombek and titled "Between Fuzzy Systems and Wicked Problems" was published. Originally issued in architectural journal *Blueprints* in 2003, this article was explicitly questioning the contested nature of environmental architecture:

> In the last five years or so the word Sustainability has come into vogue as a way to put disparate realities into a single rubric. The most immediate reason for the success of the term is that it has allowed advocates to avoid the stigma of left-wing environmental politics. To fill in the gap, various interpretations of the notion of Sustainability have come forward, each with its own implication for the discipline of architecture. (Jarzombek, 2003, p. 6)

Jarzombek was proposing three models: noble manager model, the ethical model and eco-determinist model. The noble manager model was related with issues such as efficiency, governance and management. "That is, various nations and cultures would be

promoted and enforced by officials with technical expertise and significant power" and "schools would be expected to shift toward the scientific edge of the discipline, given that corporate and government funding would go primarily in that direction." The second model, on the other hand, put emphasis on individual moral life. Thus, sustainability was not "something new to be worked over by teams of bureaucrats and lawyers, but rather an essential responsibility of the individual". Jarzombek illustrated the eco-determinist model with the works of William Mc Donough and Michael Braungar, especially their influential book *Cradle to Cradle* (2002). Here, "the old-fashioned social ecology" was repackaged "into a non-threatening vision for green future", for example when they contrasted "the current industrial production with the life of a friendly leaf-cutter ants who live in an organized way and are obedient and ecological resourceful" (Jarzombek, 2003, p. 9). Jarzombek called for a better understanding of these three ideological claims before building an architectural foundation on them, so that new alternatives for architecture could develop.

4.2.4 In Search for Standards

The second half of the 2000s witnessed a strengthening of the field of environmental architecture, as well as the establishment of a green building industry in Turkey. One of the important motivators of such a transformation were the changes taking place in Turkey's politics towards environment and energy that was closely related with the country's Accession Partnership with European Union. Also of importance were the changes taking place in the economic sphere and their reflections on the built environment, such as widening of construction industry, the rising share of the global capital and major urban renovations. The concept of sustainability, on the other hand, served as a middle ground in these changes between environmental concerns and the idea of development conceived as business as usual.[63] This understanding was also revealed in the articles. For example, in 2006 İlkay Koman

[63] In the article "The Concept of Sustainable Development: its Origins and Ambivalence" Carl Mitcham claims that the inflation of the concept of sustainability had two different although not mutually exclusive kinds of results: "(1) It can dilute the concept, subtly transforming it in the process. (2) It can insinuate its core principles into new areas."(Mitcham, 1995, p. 323) The first one corresponds to the "contested nature" of the concept so that it has become a vague representation. The second one, on the other hand, revealed itself in the inclination to more management since the origins of the concept lied in economics and management.

claimed that the "sustainable construction" which hold the aim of "to support basic needs without destroying the natural environment, to ensure economic development and continuity" was a neceesity for a developing country like Turkey.

Thus, sustainability as a term begun to connote a wide range of issues, practices and approaches, and the number of articles published in relation with environmental issues had increased significantly, whether they were labeled green, ecological or sustainable. These developments will be evaluated more thoroughly in the following chapter. In this chapter, however, the emphasis will be more on the interpretations of sustainability by the authors. In that respect, 2006 and 2007 were significant years, first of all because the number of articles published under the title of sustainability had increased significantly and also because, sustainability had stood forward as the main definer of the field. Thus, "sustainable architecture" was accompanied by labels such as "sustainable housing", "sustainable package design", "sustainable healthy interior design", "sustainable flat design"[64], "sustainable school design" and "sustainable technology". In other words, just like the critiques of its contested nature had begun to claim, it transformed into a heading under which differing trends could be covered.

Behind those apparent variations, however, the main axis of the subjects remained to be shaped by a review of what it meant to be "sustainable" in architecture. Defining the basic principles, methods and techniques continued to be the main strategy of the articles in this period. In other words, as against its contested nature there was a search for a kind of established knowledge upon which to act in practice. The contradictions assumed to be inherent in the concept of sustainability between "society, economy and environment", which had governed its introduction into the periodicals were mostly disregarded. In that respect, informing the practice through general and abstract principles was one of the mostly applied methods. For example, the article "Choosing Appropriate Materials for Sustainable Building Development" was written as "to provide guide to the choice of appropriate materials when designing sustainable buildings". To that end, principles as how to evaluate the ecological characteristics of building materials were discussed under headings such as: energy-efficiency, water-efficiency, recycling, reuse, from renewable sources, locality, durability and thermal performance. Quantification of the discourse was another feature defining the tendency of the field in this period. For example, the article "A Model for Measuring the Level of

[64] Original translation.

Sustainability in Historic Urban Quarters" was identifying "the indicators of sustainability necessary for "sustainable urban rejuvenation" in historical urban areas, and a model for measuring the level of sustainability in these areas." The aim of the article "Solar Hot Water Systems as a Design Element in the Context of Sustainability", on the other hand, was to provide "the basic rules that has to be considered for applications of systems on buildings" and "an approach for designing of solar hot water system" was submitted "by analyzing solar hot water systems in the context of sustainable design". It is possible to add to these examples. However, they should also be considered as part of the larger transformations taking place the field of environmental architecture in Turkey which will be more thoroughly analyzed in the following chapter.

Table 2. List of the articles published between 2006 and 2007 under the title of "sustainable".

2006 YAPI	"Sürdürülebilir Yapılaşma İçin Uygun Malzeme Seçimi"
2006 YAPI	"Sürdürülebilir (Yeşil) Ambalaj Tasarımı"
2006 YAPI	"Sürdürülebilir Sağlıklı İç Mekan Tasarımı."
2006 YAPI	"Tarihi Kentsel alanlarda Sürdürülebilirlik Düzeyinin Ölçülmesi İçin Bir Model Önerisi"
2006 MİMARİST	"Afet Sonrası Acil Yardım Aşamasında Barınma: Sürdürülebilirlik-Sistem Yaklaşımı."
2007 YAPI	"Sürdürülebilir Mimariye Bir Örnek: Hypergreen"
2007 YAPI	"Sürdürülebilir Apartman Tasarımı."
2007 YAPI	"Sürdürülebilir Konut Memnuniyeti."
2007 YAPI	"Mimarlık ve Sürdürülebilirlik"
2007 YAPI	"Sürdürülebilir Teknolojiler"
2007 YAPI	"Çelikle Sürdürülebilir Yapılaşma"
2007 YAPI	"Sürdürülebilir Kentsel Planlama"
2007 MİMARİST	"Sürdürülebilirlik Bağlamında Güneş Enerjili Su Isıtma Sistemlerinin Tasarım Öğesi Olarak Değerlendirilmesi."
2007 MİMARLIK	"Sürdürülebilirlik, Yaşanabilirlik ve Kentsel Yaşam Kalitesi: Kavramdan Uygulamaya"
2007 ARREDAMENTO MİMARLIK	"Uzungöl yerleşmesi ve Sürdürülebilir Turizm"

4.3 Arguing For the "Social": 2008-2012

Starting with 2008, the significance of "sustainability" in terms of defining the field as a whole had waned and was replaced with an increasing usage of both "green" and "ecological". In its place, the concept of sustainability had begun to be handled in two different modes. The first was related with the institutionalization of environmental policies and this was in most part perceived in *Mimarlık*. The second was a search for the integration of the "social" into the practice of "sustainable architecture".

The first group of articles was mostly the reviews of the European Forum for Architectural Policies (EFAP) to which The Chamber of Architects was a member.[65] For example, in 2007, it was a meeting organized by EFAP under the theme of "Baukultur for a Sustainable Urban Development"; in 2009, it was the Bordeaux assembly of EFAP titled by Tağmat as "Towards a Durable, Sustainable and Interesting Architecture"; and in 2010, it was the Madrid meeting with a theme of "Sustainability and Integrated Urban Regeneration", that was under analysis. In 2011, Tağmat wrote a review about an exhibition organized by Architects' Council of Europe (ACE) under the theme of "Sustainable Architecture in Europe". According to her, the aim of this exhibition was to accentuate the role of architecture in sustainable development to the citizens -and especially to the members of the parliament- participating in the event.

Both the reviews on EFAP and ACE were representing the institutionalization of environmental policies in the European building sector, and in that respect were assumed to present a model for the Turkish case. According to Luciana Melchert, one of the aspects that "distinguishes developed and developing countries is the current legislative framework applied to the construction industry, as in developing countries it frequently has a limited environmental content", as in the case of norms and standards (Melchert, 2007, p. 900). The same can be claimed for Turkey which lacked an underlying and institutionalized background for environmental management and architecture. In that context, the portrayal of the European example, with its framework for a more sustainable building policy, was presenting a way to bridge that gap. Not surprisingly, this discourse found its main response in the publication of Chamber of Architects, *Mimarlık*, in which the legislative framework was mostly problematized. (Table 3)

[65] Tuğçe Selin Tağmat stood as the author informing about these meetings.

One article, though, was an exception. The article written by Güven Birkan in 2010 was a more like criticism than an appreciation of the institutionalization of the term sustainability in European architecture. Reviewing the document "The Declaration and Politics of ACE on Architecture and Sustainability" ("Mimarlık ve Sürdürülebilirlik Hakkında ACE Bildirge ve Politikası"), published by Architects' Council of Europe, Birkan questioned the generalizations inherent in this text in the interpretation of sustainability in architecture. To him, this text other than an emphasis on the energy-efficiency of buildings, practically said nothing to architects in relation with the basic problems of building process or urbanization.

> The issues of "design" was already lost after the first half of the document, as it has turned into a text that provided information on the energy policies of EU. And, it ended with a commitment to contribute to the recommendations that were adopted by EU, even for areas that were directly related with ACE. EU recommendations, on the other hand, consisted of the promotion of renewable energy sources and energy efficiency. What remains for ACE's area of interest ,then, is the "energy-efficiency of buildings".(Birkan, 2010)

According to Gürkan, ACE's responsibilities were not limited with such an understanding of "sustainability" that was directly associated with energy efficiency, but should incorporate a more inclusive agenda. Implicit in such an analysis was a critique of the paradigm of "ecological modernization" that had been dominating the European environmental policies for some time now. This discourse implied more and better management of the environment in overcoming the environmental crisis and was based on objective analysis and a scientific approach. Simon Guy and Graham Farmer define this understanding as the assumption "that existing institutions can internalize and respond to ecological concerns and what is required is an integrative approach in which science, technology, and management take account of the environmental impacts of development."(Guy & Farmer, 2001, p. 142) As the review so far revealed, this had been the overarching approach in European institutions of architecture that were represented in *Mimarlık*.

Table 3. List of the articles reflecting on international assemblies, conferences and meetings in Mimarlık between 2007 and 2012.

2007 MİMARLIK	"Yapı Kültürü ve Sürdürülebilir Kentsel Gelişim: Avrupa Mimarlık Politikası Forumu Hamburg Toplantısından Notlar."
2008 MİMARLIK	"Avrupa Mimarlık Politikaları Forumu Slovenya'da Gerçekleştirildi : İklim Değiişimine Yönelik Politikalarda Minarlık."
2009 MİMARLIK	"Avrupa Mimarlık Politikaları Forumu Bordo'da Toplandı: Dayanıklı, Sürdürülebilir ve İlgi Uyandırıcı Bir Mimarlığa Doğru..."
2010 MİMARLIK	"Pazarlanan Yeni Kavramların Ardında Pazarlananlar: ACE'nin Sürdürülebilirlik Belgesinin Anımsattıkları"
2010 MİMARLIK	"Avrupa Mimarlık Politikaları Forumu Madrid'de Toplandı: Sürdürülebilirlik ve Bütüncül Kentsel Dönüşüm"
2011 MİMARLIK	"ACE 20. Yıl Sergisi: Avrupa'da Sürdürülebilir Mimarlık!"

The argument put forward by Gürkan had pointed towards the second mode that sustainability was interpreted in the periodicals after 2008. As against the emphasis given to energy efficiency and performance in the integration of the concept of sustainability into the practice of architecture that dominated the discourse on environmental architecture after 2007, sustainability begun to be increasingly denote a search for some form of integration of the "social" dimension. As have been reviewed earlier, the integration of the sustainability into Turkish architectural periodicals between 1993 and 1995 had already displayed such an inclination. This tendency, however, was lost in the popularization of the concept in the following years. But, there were exceptions.

One such example, was the article written by Deniz İncedayı on behalf Turkey in the Balkan Architecture Conference (under the theme of Architecture and Sustainable Developments in Balkans) organized by the Chamber of Architects of Turkey and the Architects' Union of Bulgaria in Sofia. In this article published in 2004, İncedayı claimed that the concept of "sustainability" was not a mere thematic concept; "its coverage should be redefined because its quality changes in line with the social developments and cultural processes". (İncedayı, 2004)In these terms, what needed was to replace the approach based on individual interest or the individualistic design

mentality with “public interest and socialist design ideology”. Another article which emphasized the social dimension of environmental architecture was published in 2006. This article, “Is the Concept of Sustainability Sustainable?” (Sürdürülebilirlik Kavramı Sürdürülebilir mi?), was written by Derya Ekim in *Arredemento Mimarlık*. Here, sustainability was claimed to be a “Western” production, which was used as an “ideological devices of illusion” (ideolojik yanılsama aracı). The popularization of the concept owed much to the process of globalization, which according to Ekim meant for the “poorer” countries a reliance on the economic help of outer sources. In that context, the transfer of technology was on the monopoly of developed countries which could be competed only “by reducing the fees, giving up environmental protection, constituting low environmental standards and privatization of the public enterprises managing natural resources” (Ekim, 2006).

This suggestion provided hints as to analyzing the contrast between the presented examples of environmental architecture in the articles and the non-existence of any suggestion to the Turkish model. Yet, the possibility for an indication on the engagement of all these previously mentioned methods, techniques and ideas to the context of Turkey was totally lost when Ekim moved to the second section on “sustainability and the architectural practice”. Ekim was talking about revisiting the “social responsibility” of architects, and the need for a paradigmatic change in our ideas and value systems. Yet, the rest of the article was supported with the works of architects that ranged from Renzo Piano, Thomas Herzog, Hamzah & Yeang, Nicholas Grimshaw, Future Systems, Norman Foster among others, which contradicted with the criticism she proposed in the beginning of the article.

As can be followed, this article echoed the similar critiques against sustainable development that dominated the discourse earlier in the 1970s in *Mimarlık*. And, although, it had lost its significance in the following years, the call for the “social” continued to be associated with the distinction between “developed and developing” or “North and South”. Lacking, however, was a situated analysis of how that social dimension was to be justified in Turkish building practices. The expansion of the green building industry alongside the neoliberal urban policies and the developments in building industry had intensified this rupture. Thus, arguing for social dimension of sustainability had taken a turn after 2007 and became the main axis of the discourse on sustainability in Turkish periodicals. This have resulted in a conception of the field more towards the weak end of the spectrum of “weak versus strong sustainability”-

which can be described "as a focus on eco-efficiency and managing business risk within the existing system" (Lombardi, Porter, Barber, & Rogers, 2010, p. 278).[66] Consequently, the articles emphasizing and questioning the contested nature of sustainability in architecture, begun to take ever more space in the architectural periodicals under consideration.

Here, there was a call for a "stronger" understanding of sustainability, which could mean both "reform (fundamental reform is necessary, but without a full rupture of existing social structures) or transformation (the roots of the problems are the very economic and power structure of society, and thus a radical transformation is needed)" (Lombardi et al., 2010, p. 277). Without incorporating the social aspects of sustainability in architecture, it was claimed to remain as business-as-usual, and what needed was a radical change not only in the profession but society as a whole. Not surprisingly, though, in the architectural periodicals under analysis this request came mostly from academic architects, and they were also mostly reflected in *Mimarlık* and *Mimarist* as the publication organs of Chamber of Architecture.

One of the significant issues in that respect was the folder of "How Far Can We Sustain Sustainable Architecture?" (Sürdürülebilir Mimarlık Düşüncesi Ne Kadar Sürdürülebilir?) published in 2008 in Mimarlık. Ayşen Ciravoğlu, as the editor of the folder and based on her doctoral thesis written on the subject, was calling for a widening of scope in understanding sustainability to include the production of buildings, urbanization processes and a consideration of the human beings.[67] Unless done so, she claimed, sustainability would continue to be constrained within old comprehensions and cannot initiate the transformations that it claims to have started. Albeit the differences in the issues covered and their interpretations, in overall, sustainability in this folder came to suggest something greater than mere efficiency, management or technological innovation. Accordingly, Ciravoğlu in the introduction to the folder was claiming that

---

[66] A related comparison put forward was between weak versus strong sustainability: "As with the three independent dimensions point of view, weak sustainability is associated with reliance on technological fixes with little change required to personal values or lifestyle choices." In contrast, strong sustainability "would include a fundamental reassessment of values resulting in revamping behaviors."(Lombardi et al., 2010, p. 277)

[67] This folder was edited by Ayşen Ciravoğlu who had written a doctoral thesis on the subject back in 2006, which was co-advised by Mark Jarzombek as the second assistant. Additionally, one of the members of the thesis jury was Deniz İncedayı. As we have reviewed, these two figures had already been influential in the construction of the discourse which searched for alternatives to the mainstream practice of environmental architecture.

> Instead of presenting a survey on the adventures of built environment in ecological activities, the file tries to put forward more detailed analysis that evaluate social realities with critical perspectives and search for possible alternatives. You will find articles that examine the interaction between the idea of sustainability and architecture and its reflection on the field of practice, built environment and on political dynamics. (Ciravoğlu, 2008)

The second article Ciravoğlu wrote, "Sustainable Architecture: Between Old Comprehensions and New Approaches" (Sürdürülebilir Mimarlık: Eskimiş Kavrayışlarla Yeni Söylemler Arasında) resonated along similar lines especially with reference to Arturo Escobar and his book *Encountering Development, The Making and Unmaking of the Third World- e*mphasizing the vagueness of sustainability based on the reconciliation of economic determinants with environmental considerations. Thus, she claimed the real questions of "what to sustain?", "for whom to sustain?" and "for how long?" were not being answered.

In each case, arguing for the social in sustainability had resulted in a discussion on the "social responsibilities" of architecture. For Ciravoğlu, sustainability in architecture came to suggest a "sovereign purpose" in this "dynamic and chaotic" environment, in other words architects once more had taken upon the responsibility of saving the world. Yet, she claimed the intention of modelling a legitimate and socially responsible agenda had resulted in a formal trend of eco-architecture. Thus, "eco" had become a label that could be applied to buildings like a trademark. This text was a call for enlarging the discussions in the field from mere energy-efficiency to the "legitimacy of the building production processes" and our interpretations of sustainability in that contexts. In fact, a "real" change can only take place through the transformation of the society's unsustainable practices.[68]

[68] The second article was a translation, once more from Mark Jarzombek, of an article published in Tresholds in 1999 and it was titled "Molecules, Money and Design: The Question of Sustainability's Role in Architectural Academe". Here again, sustainability was represented as a bridge between environmental concerns and economic considerations- in Jarzombek words "a link between molecular cosmos and commercial universe".[68] Within this terrain of contentions, sustainability in architecture resulted in "three different political environments: (1) that of "green architecture" which is an extension of grass roots politics; (2) that of corporate-technical, which is an extension and reform of the political economy of capital; and (3) that of a middle range architectural practice which is now beginning to include in it purview critique, and revision, of academe."(Jarzombek, 1999, p. 35) Jarzombek questioned the implications that these developments would have on the architectural education, for example would it result with "a separation of the technical aspects of architecture from its intellectual aspects" or "an escalation in the rhetoric between champions of "real world" pragmatism and those of avant-gardism". To these questions, the article did not give any definitive answers, but identified their significance and called for a deliberate examination: "This means that many of us will have to make some gut- wrenching decisions about what is the function and purpose of academe."(Jarzombek, 1999, p. 38) In fact, in the following years the incorporation of environmental issues and integration of sustainability as an approach into architectural education had become a widely discussed topic. Not surprisingly, one of the most situated critiques of sustainability in Turkish architecture were formulized under this theme.

The folder published in *Mimarist* in 2009 with the title "Architecture and Environment" (Mimarlık ve Çevre) had taken this challenge one step further which called for a reconsideration of the values, responsibilities and theoretical underpinnings associated with environmental architecture in general. In this folder there was an article again from Ciravoğlu, an interview with İlhan Tekeli, an "opinion" from Bülend Tuna as the chairman of the Chamber of Architects of Turkey, a translation of Pauline Madge who was one of the first critiques to consider the historical background of the environmental concepts in design, an article providing an overview of the environmental strategies of Turkish government by Çelen Birkan as an architect who had worked in "The State Planning Organization" (Devlet Planlama teşkilatı-DPT), a call for a normalization of the environmental practices in Turkey by Emine Seda Kayım, a collection of building examples but this time from diverse parts of the world and a translation of an article on climate change by Anil Laul.

As can be followed from this summary, this folder provided a richer outlook on the interface between environmental discourse and the field of architecture. Ciravoğlu and Madge had provided the historical interpretations of that interface. And, although they were based mostly on the Western experience and sources, they nevertheless provided a more deliberate review than the earlier articles on the subject. The articles written by Tuna and Birkan had provided hints as to the course of that discourse had taken in Turkey. Especially, the review provided by Birkan was illustrating the relation between environmental protection, management and architecture in Turkey. Tekeli, who had written on the subject since early 1970s, on the other hand was building up the theoretical bases and also providing insights for Turkish practice. There was also an article on the representation of Turkish built examples on the subject written by Kayım, which tried to go beyond those binary distinctions shaping the field that I have also argued for earlier. And lastly, Laul – instead of taking it as a given- had presented a skeptical outlook on the discourse on "climate change" and tried to relate it with urban development issues. What continued to lack, however, was a study that could shed some light on the complex processes an architect has to face in practice, such as in the implementation of a wide range of techniques or technologies in particular conditions. In that context, the "critical" interpretation of sustainability came to suggest a distancing from those pragmatic issues, and staying within the boundaries of being "critical".

4.4 "Responsibility", "Necessity" And "Obligation"

The discourse on environmental crisis that have created a sense of urgency, accompanied by the discourse on sustainability which implied shared values and interests, has resulted in an emphasis on the "responsibility" of architects to humanity and in some cases future generations. This emphasis on the role of design professions in the creation of environmental problems and therefor their solutions, in fact, has been a common theme in the discourse of environmental architecture which can be traced in many of the books on the subject. Already in 1971, Victor Papanek, a leading figure of ethical stance in design, has called designers a "dangerous breed" with high social and moral responsibilities:

> There are professions more harmful than industrial design, but only a very few . . . by creating whole new species of permanent garbage to clutter up the landscape, and by choosing materials and processes that pollute the air we breathe, designers have become a dangerous breed . . . In this age of mass production when everything must be planned and designed, design has become the most powerful tool with which man shapes his tools and environments (and, by extension, society and himself). This demands high social and moral responsibility from the designer. (Papanek, 1997, p. IX)

Written in early 1970s, this passage was influenced by the survivalist discourse dominating the period in which Earth was perceived as something vulnerable and in need of saving. Papanek's interpretation also withheld a critical stance indicative of the properties of this period towards business imperatives and conventional design practice. In its dissemination in the popular discourse of Turkish architectural periodicals, it has partially lost this critical approach. But what remained constant was the emphasis given to the "social and moral responsibilities" of the architects and designers as individuals.

For the articles under consideration, there were three basic aspects of this discourse. The first was related with the role that architects and the building sector has on environmental degradation, and thus in its prevention. This discourse also implied that with appropriate design measures architects could prevent most, if not all, of the environmental impacts caused by human actions. As such, architecture, and the building processes in general, were transformed from being a part of the problem to being a "solution". Similarly, in most of the articles under consideration this discourse acted as a point of reference in the actions taken towards a more "sustainable future". Yet, as have been put forward what that future implied was open to interpretation, and there were rather diverse and at times contrasting suggestions. Uniting these diverse

suggestions was their representation as an obligation through words such as "responsibility", "necessity", "mission" and "görev". Just like the discourse on environmental crisis, then, this discourse acted as an unquestioned "field of reference that is itself a given". And, it was only in that context that the "the reason for supporting photovoltaic panels in green buildings" could be related, almost in a natural manner, with climate change, the role of buildings in that process and the role of building sector in its solution. In the article, Moltay stated that

> Approximately 40% of greenhouse gasses responsible for the global climatic change is sourced from buildings and activities made in them. Highness of this ratio points out that building sector should take on an inevitable task in the attempts restricting climate change. Solution can be achieved by undertaking the sustainability concept as the main goal in all building construction processes. (Moltay, 2010)

Secondly, and relatedly, architects and related professions were assigned a "unique" and "important" role in that process. At its most extreme, architecture as a discipline was qualified as the "most important instrument" initiating change towards future. For example, Çelik Erengezgin was defining the building processes as the "most important instrument towards peace":

> I suppose it is now better understood why they should be inclined to the buildings producing energy as far as possible rather than consuming it countlessly. Only by this way, it is clearly apparent that they can positively affect world peace and ecological organism, namely, the **'fate'** of humanity, in one sense. It may be claimed that 'none of the professions has such **strong peace-weapon'**. (Çelik Erengezgin, 2001, p. 85)

For Ahmet Koçhan, on the other hand, the "mission" taken was about "to be or not":

> On the other hand, without nature, man cannot exist. In other words, the celerity of destructing natural environment equals, at the same time, to the celerity of closing to our own end. Ecological and sustainable approaches have the intention of balancing today and in the future all those social, economic and environmental aspects of our actions. Beyond earning success, the mission undertaken is existence or non-existence. (Ahmet Koçhan, 2003, p. 55)

Thirdly, arguing for the importance of the discipline in achieving a more "sustainable future" have resulted in a reclamation of the discipline's status as an essential component or even a "leading" role in the construction of future. This was, in a way, perceived as a possibility for the restoration of the credibility of the discipline and positioning architecture at the core of culture. However, what these claims disregarded was that shaping the future suggested quite different perspectives for different actors. In Turkish architectural periodicals this was mostly represented as two seemingly

contrasting routes for architecture: it could mean adjusting architecture to the changing social and economic landscape, and it could also be perceived as a claim of resistance or even a form of social reform. For example, already back in 1990 in a translation from Ramachandran it was claimed that performing construction activities in a more "harmonious" manner with nature were to affect the "future" of construction processes. "The success" he claimed lay in "the harmony between construction and nature"(Ramachandran, 1990). With future, however, what was implied was not so much the future of humanity, but the future of the discipline. Similarly, success denoted the competitive capacity of the discipline among others rather than environmental considerations. In the same way, in 2002 Ahmet Koçhan claimed that "the studies in ecological and sustainable architecture are a candidate for becoming the science of the century"(Ahmet Koçhan, 2002, p. 53). This belief in positivistic change and the link formed between the responsibilities of the architects and pragmatic solutions will be evaluated further in the following chapter. The emphasis here will be on the second axis, assigning "social" and "ethical" responsibilities and roles to architects and architecture towards future.

As can be followed throughout this chapter, right from its inception the discourse on sustainability in Turkish architectural periodicals was accompanied with a discussion on its social dimension. Starting with Oktay Ekinci's article "Özgürlüğün Mimarcası: Sürdürülebilir Tasarim'" in 1994 this tendency has rendered the call for sustainability almost homogenous to that of "social architecture". In that context, Ekinci was defining sustainable architecture as "dependent" on "cultural and environmental" values rather than on a "freedom" to invest in a liberal economy (Ekinci, 1994). Yet, how exactly "sustainability" as a concept was to transform the practice into a more culturally and environmentally sensitive direction was not questioned.

In the following years, sustainability has come to be interpreted as a more complex and contested discourse. In that context, only a certain interpretation of sustainability was assumed to withhold the potential to transform society. For example, according to Deniz İncedayı for the concept of sustainability to become a "real solution proposal" it had to be questioned within the broader framework of the social processes and practices and integrated into the idea of basic human rights and freedom. Unless done so, he claimed, it would continue to be reproduced as "an instrument of the existing system". Yet, İncedayı also acknowledged that once its critical potential was

uncovered, sustainability could also be perceived as "the main purpose" of the discipline in the production of environment (İncedayı, 2004).

One of the related strategies in that respect was to differentiate those practices which served the status quo from those others calling for change in the discipline. For some authors, it was the technocentric approaches that needed to be distinguished. For example, according to Çelik Erengezgin, Eco-tech architecture was only a superficial intervention but not an internalized environmental practice:

> Buildings appearing in the form of a not-shaved skyscraper, greenery scattered among the stories, and the gigantic structures of which air-conditioning and ventilating systems are thought to be solved by placing a greenhouse to the bottom and a big chimney to the top should be questioned… It is neither scientific nor emotional, at all, to ignore the destruction of nature by the concretion caused by the car parks effused from the layouts of the buildings in small parcels, and by the traffic density which has to reach the crowds. (Çelik Erengezgin, 2003, p. 98)

For others, it was the uncritical dependence on market forces that weakened the meaning of the concept. For example, Bülend Tuna in 2009 as the chairman of the Chamber of Architects of Turkey was claiming that the "discourse on sustainable environment" (sürdürülebilir çevre söylemi) was to a large extent applied as a "marketing strategy" and in that context it was seriously exhausted from its contents. Çelen Birkan, on the other hand, analysed the subject from the point of environmental protection and management history of Turkey. For example, Çelen observed that in the Turkey's 9th Development Plan all the strategies and aims related with environmental issues were collected under "Increasing the Rekabet Gücü". In that respect, they were part of the "global marketing strategies", rather than reflecting a sincere concern for environment. Similarly, Anil Laul was defining this tendency as a "formulization which fused the big capital with that of fashion".

Uniting these rather diverse subjects and approaches was the positioning of a "stronger" understanding of sustainability and in more general terms environmental architecture as against the elements of dominant models of architectural production. These critiques, I believe withheld in themselves a valid argument. Yet, like most aspects of the discourse on environmental architecture they were also based on crucial assumptions, in this case about mainstream architectural practice. Thus, for the most part, they stayed as generalized and abstract discussions, but how the social and ethical dimensions were to be implemented into specific contexts of practice were not that much illuminated. Graham Farmer and Simon Guy identify this condition as a general feature of the field which led to an over-simplified universe of choice for architects:

> to work with the market or outside of it, to adopt a 'light' or 'dark' green environmental strategy, to employ high-technology or low-impact technologies, to intensify the urban experience or return to rural settings. Such stark choices are not easily reconciled with a complex building design project – which often involves a multitude of actors, with differing commitments and motivations, thousands of decisions, and a wide range of techniques or technologies employed in differing contexts and settings. As a consequence, environmental ethicists have rarely been able to provide useful practical advice for designers, e.g. by shedding light on practical directions for action over controversial challenges such as environmental design and planning.(G. Farmer & Guy, 2010, p. 369)

In that context, arguing for the social dimension of environmental practices came to be regarded as something close to what Paul Jones and Kenton Card have defined as "social architecture" in their article "Constructing ''Social Architecture'': The Politics of Representing Practice": "a description of those practices that seek to challenge the dominant professional model of capital-intensive, client-dependent architectural production"(Jones & Card, 2011). Jones and Card continue with the "necessity of guarding against the use of the category as a kind of a ''black box'' into which disparate types of practice are placed never to be interrogated further"(Jones & Card, 2011, p. 229).

Considering the articles under consideration, a similar judgment, I believe, can also be claimed for in this thesis. As a result, the discourse on environmental architecture presents an outlook that is made up of clusters that hardly touch one another. So, where the articles analyzing those more practical issues mostly disregard the social questions implied in the changes taking place in the field, the articles arguing for the social dimension seldom refer to subjects that fall under the domain of practice. Thus, they stay mostly as ahistorical, abstracted and generalized discussions. This in accordance with what William M. Taylor and Michael P. Levine detect in their book *Prospects for an Ethics of Architecture* that:

> Reading architectural theory one finds ethical necessities grounded by abstractions that presuppose the facts of life. One finds alleged universal and timeless conditions extracted from competing philosophies of nature. These necessities commonly invoke existential concerns and support differing views of the invariability of human identity, its transcendental and essential make-up or, conversely, its social construction.(Taylor & Levine, 2011, p. 2)

Lacking in the Turkish architectural periodicals, I believe, is a systematic and deliberate analysis on the relationality of processes and things and the ways in which they contribute to existing interactions and understandings (Jones & Card, 2011). In such a gap, the challenge of showing "how" technologies, shared understandings and knowledges are assembled and maintained could not be undertaken. As a result, the binary distinctions that have been reviewed between "mainstream and social

architecture" or "technocentric and ethical understandings" or "global and local practices" continue to stay as representations. In return, these representations legitimizes themselves as a priori categories and in so doing prevent any potential for their interactions.

CHAPTER 5

ENERGY-EFFICIENCY, "GREEN" PRACTICE AND ESTABLISHING A MARKET

The rise of environment as a central problematic of architecture and the establishment of sustainability as a key concept, both in the world and in Turkey, were accompanied by an accelerated rate of development of technology in improving the energy efficiency of the buildings. One of the factors initiating such a change was the increasing awareness on the role of building processes in environmental crisis. The effects of this enhanced recognition, however, would probably have been limited if it were not the economic parameters that supported an interest in energy matters. Petroleum crisis of the 1970s have played an important role in the initiation of the issues related with energy-efficiency both in the world and in Turkey. One of the effects this condition was the publication of an issue in *Mimarlık* totally reserved to the issue of energy crisis in 1980. The drive to the folder of "Energy Crisis" published in *Mimarlık* in 1980, however, immediately disappeared, and in the following thirteen years, the issues of energy and energy-efficiency in relation to environmental architecture found little reflection in Turkish architectural periodicals. This did not mean that the issues of natural lightning and passive solar systems were totally absent from the periodical until the mid-1990s. However, they were less in number and also were not discussed in relation to the rising environmental problematic.[69]

In the previous chapters, we have observed the widening of the subject matter covered under the titles of environment and sustainable in Turkish architectural periodicals. This transition was accompanied by an increasing interest in issues related with energy-efficiency and performance. As such, regardless of the label chosen by

[69] For example, as early as 1965 the issue of orientation (yönlendirme) and its effects on the solar gain of buildings were discussed in the periodical in an article titled "Orientation and Solar Control in Classrooms" (Sınıfların Yönlendirilmesi ve Sınıflarda Güneş Kontrolü). According to Lütfi Zeren the two main criteria of climatic effectiveness were siting and building form, aspects which would continue to appear in the discourse on energy-efficiency in the following years. Yet, the responsibilities of the architect towards the environment or the energy shortages were not considered to be an influence in that practice. Rather, it was the "deathly effects on the microbes" and the "psychological benefits" that Zeren defined as the aims of climatic control in that article. (Zeren, 1965, p. 11)

authors, discussing buildings through a broader set of efficiency parameters begun to dominate the field of environmental architecture. This chapter attempts to understand this tendency and its implications for architecture.

5.1 Early Positionings: 1993-2006

5.1.1 The Blurry Line between Architecture and Engineering

1993 marked the point in which the researches done in solar energy had witnessed an upturn in Turkey. As have been reviewed earlier, the second half of the 1970s was rather active in terms of the researches done in solar energy, but it was followed by a period of discontinuity until the mid-1990s. The important projects breaking that silence in that respect were:

1993- Ankara Municipality Solar House, Ankara;

1993- Hacettepe University Solar House, Ankara;

1996- TUBITAK National Observatory Guest-House

1996- Erciyes University Solar House, Kayseri.(Durmuş Arsan, 2008; Gündoğan, 2012, p. 9)

Consequently, in 1995, a regenerated interest in solar energy appeared in the articles. The first of these articles was written by Çetin Göksu in 1995 as a summary of his book, *Sun and City* (*Güneş ve Kent*), published in 1991 in *Mimarlık*. Göksu was focusing on the city, because he saw urbanization as one of the main characteristics of our period: “Resolving the energy problem in the cities indicates resolving the energy problem of civilization.” To that end, the most important factors in the utilization of solar energy were related with the “location and the macro form” of the cities. In planning, the relation between the city and sun was transformed into certain concepts by Göksu, such as macro-mass (makro-kütle), city atmosphere (kent atmosferi), city greenhouse (kent serası) and city morphology (kent morfolojisi). Although, this article was in principle revolving around the issue of renewable energies, it was much more perceptive of the environmental factors than the earlier examples we have covered in the previous section on energy efficiency. Here, the emphasis was more on energy, and efficiency was introduced as a principle rather than an aim when necessary. And, Göksu

was searching for a more "holistic" approach as he applied the language of system theory to his analysis:

> To plan the cities in terms of solar energy, it is necessary to approach them with a new conceptual framework like a passive system. This conceptual framework is possible with an understanding and planning of the unity of the city structure according to this purpose. We need to approach this new city as an "Energy Phenomenon". In fact, "the living organism of the city" can exist only with energy, and the physical structure city is in a constant energy exchange with the environment. In other words, the city is a nested "Energy System".(Göksu, 1995, p. 49)

For Göksu solar energy was not only perceived as a material resource but as the foundation of life to which the "emotional and the cognitive structure" of human beings depended. This approach, however, was illustrative of a small part of the discourse on energy. It was, in the following years, furthered especially by Çelik Erengezgin in his writings in *Yapı*. The other two related articles on solar energy published in the mid-1990s, however, presented a rather different approach emphasizing mainly the technical aspects of energy savings.

The second article was titled "Erciyes University Solar House" (Erciyes Üniversitesi Güneş Evi), and it was published one year later in 1996 in *Yapı*. It was a descriptive review of the history and the features of this solar house. The longest part of the articles was reserved to the technical characteristics, defined in phrases such as:

> The solar house has a 96 m2 floor area and it is composed of two floors with a 120m2 usage area…the building contains a total of 146 m2 sun collectors generating hot air, of which 34 m2 is placed on the vertical walls and the rest 112 m2 is placed on the roof with a 45 degree slope including 19m2 volumetric and 112 m2 planar collectors.(Altuntop, 1996, p. 43)

or

> For that reason, most of sun collectors were composed of cooper plates painted with matt black and were covered on the top with fine-porous wire meshes in matrix type to increase the efficiency. In order to reduce the heat losses, the bottom and side parts of the collectors were insulated with glass wool, and in order to minimize the heat loss by radiation thin aluminum sheets were placed between the insulation and the absorbing sheet.

It was mainly the characteristics of the materials chosen or the architectural details applied that was being transmitted in this article, as a kind of practical knowledge as well as a scientific one. Given the lack of examples built in Turkey, and the fewness of their representation in the periodicals, this article was rather significant among the others. Yet, this implication was not indicated in the article, as it stayed more like a practical guide to those who in the future wanted to apply a similar model. The

objectives or the conditions initiating such a unique example, however, were totally absent from the review.[70]

This interest in solar energy continued to shape the discourse on energy-efficiency especially until the second half of the 2000s. The issues that dominated the articles were mainly passive and active solar systems, and their integration in the building processes. One such example was the article written by Zerrin Yılmaz who had been writing on the subject since 1980[71] and Nur Demirbilek. The article was titled as "Climate Conscious Building Design", which -rather than introducing a new subject or an approach- presented an organized outlook on the rather dispersed contents of the discourse we have reviewed so far. To begin with, Yılmaz and Demirbilek were defining "a building has optimum performance from climatic comfort and energy conservation point of view" as:

> one which meets the thermal requirements of its occupants by consuming minimum amount of energy while outside climatic conditions vary throughout the day and throughout the seasons. The thermal performance of a building is the function of its properties the optimum values of which must be determined during the design stage by the designers in order to provide thermal comfort and energy conservation and in return to decrease the environmental pollution.(Demirbilek & Yılmaz, 1996, p. 48)[72]

There were two important points that this definition suggested. First was related with the main objectives directing such studies, which could be summarized as "to achieve thermal comfort with minimum energy consumption". The decrease in the environmental pollution was seen as a positive gain, but not as a guiding goal of the discussions. Second important point was the accent given to the design stage in providing thermal comfort and energy conservation. As we have seen, such an emphasis had already existed in the articles published earlier. This time, however, they were more organized, and more importantly was supported with the numerical evidences deduced from researches. According to Yılmaz and Demirbilek, the most important design parameters for buildings affecting thermal comfort and energy conservation were:

---

[70] Yet, nowhere in this article was the mentioning of energy crisis, environmental degradation or a suggestion of such perception as being influential in the constitution of this model. In fact, even for the articles studying energy-efficiency, the exclusion of any judgments was striking.

[71] "Ministry of Energy and Natural Resources' Code on the Economization and Reduction of Air Pollution in Heating and Steam Plants"/ 1980, "The Effects of the Size of Façade Elements on Climatic Control and Energy Efficiency"/ 1989

[72] Translation is from the "English Summary" part of *Mimarlık*.

> The distance between buildings: which may cause shading and wind obstructing effects of neighboring buildings,
> The spatial organization of the buildings: (the siting and the orientation of the spaces in the building according to the plan type),
> The size and the form of spaces,
> The thermo physical characteristics of the building envelope. (Demirbilek & Yılmaz, 1996, p. 36)

All these four strategies were easier to follow by architects as they fell into the domain that is still considered to be under their responsibilities. Siting, orientation, massing and configuration are regarded as design decisions, whereas calculations required in structures, heat transfer or illumination are normally considered to be engineering.(LaVine, 2001) More interestingly, though, these principles when listed in these generalistic terms could very well be deduced from other domains of architecture, such as vernacular architecture. Thus, these four strategies did not solely belong to the discourse on energy-efficiency, but kept recurring through differing approaches and time periods, either separately or together. What differed this article from such others, however, was related more with the language used -especially with the reliance on literal measurements and numeric facts in justifying arguments- rather than the contents of the principles put forward. For example, the importance of the distance between building blocks in reducing energy consumption was rationalized with an analysis on the impact of shading of neighboring buildings on the heating loads, with phrases such as:

> Analysing four identical building blocks built with traditional building techniques, and without any precautions, in two of the blocks the initial heating load of 22.5 GJ is reduced to 16.5 GJ in the lack of shading; and for the other two that are shadowing each other the heating load is approximately 17Gj and 18GJ. This implies that for the buildings without shading the heat energy saving is 27%, whereas for the others this ratio decreases to 24% and 20%.

This passage was illustrative of the course the discussions on energy efficiency were to take in the following years, one that was based on calculations and measurements. Accompanying such discourse was the increasing use of graphics. In the following years, discussing the performance of buildings and sometimes their greenness with numerical expressions, measurements and graphical data numbers would become a common mechanism of the articles that can be categorized under energy-efficient approaches.

Another example taking on the issue of solar energy was published in 1997 in *Arredamento Mimarlık* under the title of “Solar Energy in Architecture and Photovoltaic Cells” (Mimarlıkta Güneş Enerjisi ve Fotovoltaik Modüller). Here, Türkan Göksal was

presenting an organized summary of these subjects: the definition of passive and active systems of solar energy, the potentials and the advantages of using photovoltaic cells in the buildings and their applications as façade elements.[73][74]

The following articles in the 2000s maintained the interest in these topics, yet their interpretations suggested a widening of scope, as well as a better understanding of their relations with the practice. Until 1993 the link between energy issues and environmental degradation were rarely indicated in the architectural periodicals under analysis. In fact, even a methodological analysis of energy crisis was not presented. Mehmet Okutan's article "Energy Problem and Buildings" that was published in *Arredamento Mimarlık* in 2000 was significant in that respect, for it tried to relate in one article the themes such as: "the global energy problem", "Turkey's energy problem", "environmental impacts", "energy conservation in buildings", "TS825", "new mechanical systems", "new materials", and "new approaches".(Okutan, 2000) These were some of the titles of the sections introduced in the text, and they presented the wide range of issues Okutan covered in this five page article. What these rather detached parts implied in the end, however, was illustrative rather than being critical of the course of the practice of energy-efficiency were to take in Turkey in the preceding years: the need for better regulations (especially with the influence of Accession Partnership with European Union), the belief in the positive impacts of the technological innovations both in mechanical systems and insulation materials, and the need for interdisciplinary collaboration, especially between the mechanical engineer and the architect. Interestingly, Okutan was himself a mechanical engineer.

Accordingly, a few months later *Arredamento Mimarlık* defined the theme of the Technology/Material section as "Energy-Efficient Design: Architecture and Energy Conservation". The reason for such a selection was outlined as:

---

[73] "There are two categories of solar energy: passive and active. Passive solar energy is put into practice as a design strategy to accomplish direct or indirect space heating, daylighting, etc. Active solar energy is implemented through technical installations such as solar collectors and photovoltaic _PV_ panels. There are two basic types of solar collectors: flat bed collectors and vacuum tube collectors. PV is an advanced technology and practical solution for the sustainable supply of energy in buildings. PV cells convert light into electrical energy. Electricity is produced when photons or particles of light are absorbed by semiconductors."(Ali, 2008, p. 117)

[74] These arguments were then supported with an example: Julich Research Center built in Germany. The analysis of the international examples was once again a tool in the construction of the terminology and applicability of the technology.

> The increase in ecocide and the acceleration in the concerns about environmental protection as its result have prohibited the independence of architecture from all these issues. For this reason, it has recently become crucial, in most of the countries, to economize the energy performances of the buildings.

Two points were significant in this passage: stating environmental degradation as being the main motivator of energy-efficient practices, and the categorization of the issue under the section of technology and materials.[75] The first one indicated that the discourse on environmental crisis had diffused into the field and became a shared reference point for the articles. The second, on the other hand, had pointed towards the interpretation of environmental architectural practices through a technological frame.

This interest in energy-efficiency that was initiated in *Arredamento Mimarlık* continued in the following years in *Yapı*, especially through the articles written by İbrahim Çakmus. For example, in 2001 and 2002 Çakmanus wrote two articles which were titled as "Passive Heating and Cooling of Buildings by means of Solar Energy" (Binaların Güneş Enerjisi ile Pasif ısıtılması ve Soğutulması) and "Feasibility Criteria for Passive and Low Energy Cooling Systems" (Pasif ve Düşük Enerjili Soğutma Sistemlerinin Uygulanabilirlik Ölçütleri). As a mechanical engineer, Çakmanus claimed that the need to conserve energy could be realized with the collaboration of the architect with the mechanical engineer. In that partnership, architect was responsible from the siting and orientation of the buildings, as well as the choice of the materials. Mechanical engineer, on the other hand, was involved with the calculations of the gained and stored energy. (Çakmanus & Böke, 2001, p. 83) Thus, as this was an article prepared for architects, Çakmanus reviewed subjects such as direct and indirect heat gains in passive systems, and cooling strategies such as natural ventilation or solar chimneys. The discussions were supplemented by section drawings revealing the basic principles of

[75] There were two articles in this folder, the first being "The Application of Transparency and Transparent Insulation in Energy Saving Facades" (Enerji Korunumlu Cephelerde Saydamlık ve Saydam Yalıtım Uygulaması). In this article, Türkan Göksal continued with her previous study published in 1997 with similar issues of passive and active systems and widened her scope to include the features and the principles for application of transparent insulation materials. This can be seen as an introduction to the double skin glazed façade systems that would become more popular in the following years. The second article, however, can be seen as an exception because rather than presenting information or an idea, it proposed a project for an "energy-conscious" housing unit in Ankara. Titled as "Energy-Conscious Housing Design" (Enerji Bilinçli Konut Tasarımı) Can Elmas was claiming to take the necessary lessons existing in traditional Anatolian architecture and incorporating those with the contemporary technology and knowledge. As such, the first two sections on "passive heating and cooling" in which Elmas identified the basic principles of the design did not contain the utilization of technology very much, but it was mainly the calculation of their performances that referenced technological intervention.

these strategies, a common tool used in discussing passive solar techniques and also a medium architects were more familiar with. This distinction between the "architectural and mechanical" was in accordance with the inclination of the field, which presented a critical review of the separation of architects from the issues of environmental management.

Yet, in spite of the distinction Çakmanus stated here, the succession of the articles he wrote in *Yapı* also suggested an attempt to bridge this gap, at least to introduce a wider range of subjects for architecture. For example, the second article Çakmanus wrote in 2002 was towards a less examined subject, that of "air-conditioning by means of passive and low energy cooling systems, night-time convector cooling, radiant cooling, direct and indirect cooling, and the use of soil as a cooling source."(Çakmanus, 2002, p. 92)[76] It was the positioning of walls and openings, their sizes and the materials that altered the effectiveness of passive systems in ventilation. Here again, the emphasis was more towards the –what Reyner Banham called- "structural solutions" rather than "power operated solutions". Banham identified this distinction back in 1969 in his influential book *Architecture of the Well-Tempered Environment*. This was one of the earliest studies on the increasing reliance of architecture on mechanical systems, and more importantly, presented a critical review of the separation of architects from the issues of environmental management. In this book, Banham has differentiated two modes of environmental control in architecture- between structural type and those of which campfire is an archetype:

> Let the difference be expressed in a form of parable, in which a savage tribe (of the sort that exists only in parables) arrives at an evening camp site and finds it well supplied with fallen timber. Two basic methods of exploiting the environmental potential of that timber exists: either it may be used to construct a wind-break or a rain-shed- the structural solution- or it may be used to build a fire- the power operated solution.(Banham, 1969; Mclennan, 2004a, pp. 18-19)

According to Banham for most of architectural history, theory and teaching "structure" was considered to be sufficient for environmental management. However, such an approach neglected the "the history of the mechanization of environmental management"(Banham, 1969, p. 16) which holds a unique place in understanding efficiency in architecture. Environmental services were considered to be marginal or secondary in the tradition of architecture. This had led to "another culture" consisting of

[76] The sections drawings were replaced by graphs.

plumbers and engineers, and this was a problematic separation of architecture from technology which since then had begun to be incorporated into architecture.[77]

Within the past forty-five years, the scientific edge of the discipline has developed into a well-established practice, and the issues related with energy-efficiency have played an important part in that process. Thus, the discourse on environmental architecture sought for ways to integrate those design strategies such as shape and orientation of buildings, solar design principles and the use of natural lightning -which are considered to be the related with the fundamentals of the discipline of architecture- with that of efficiency that is related with the utilization of lightning systems, thermally efficient building shells, heating and cooling systems and their equipment and appliances. The status of these practices for architecture, however, is still contentious.[78]

One year later in 2003, Çakmanus wrote another article in *Yapı* and this time formulized his ideas on the relationship between the architectural and mechanical explicitly under the section of "The Importance of Interdisciplinary Collaboration". This article was titled "The Need for Energy-Effective Building Design". Here, the distinction Çakmanus stated earlier between the responsibilities of the architect and the mechanical engineer had transformed into an inseparable collaboration shaped by the unity of the optimization of the process of design and construction.

> It is clear that in a setting in which all the components and systems of the building, rather than working in isolation and independently from each other, operate and define the performance interacting with each other, the traditional design process falls short of optimization. That is because, the design and optimization of the systems (for example static, climatic systems) independently of the others founding the building is not sufficient for the optimization of the building as a whole.

This interpretation of the building process and the emphasis Çakmanus placed on "optimization" pointed towards the course of the energy-efficiency practices were to take in the following years. Accordingly, the last article Çakmanus wrote has moved away from passive techniques to solar energy technologies as they were applied to the

[77] However, claimed Banham, in modern buildings environmental management relied on the consumption of power as much as or maybe even more, on the conservative and selective structures. Here, Banham distinguished the "pre-technological" societies, "since they are usually short of combustibles or other sources of usable power." For this reason, they "relied on construction of massive buildings to fulfill their environmental needs."(Banham, 1969, p. 19)

[78] The analysis of the architectural periodicals covered in this thesis reveal that both aspects are part of the discourse of environmental architecture. Yet, the historical or theoretical analysis of the technological appliances are largely absent, whereas they are mostly treated as objective and value-free studies contributing to the trend in the reduction of the energy consumption of built environment

existing building block in European countries. Published in 2004, this article was titled "Using Solar Energy in Building Renovation: Results and Experiences of Some International Projects" and analyzed fourteen selected projects to which solar technologies were integrated. According to Çakmanus three techniques stood forward: integrated solar collectors, glazed balconies and solar walls. Yet, what distinguished this article from the earlier ones was the emphasis given to the economic dimensions. For example, the first and foremost important outcome of this study Çakmanus put forward was related with the first investment costs of these projects, and his main suggestions were towards their reduction. Additionally, there was a section titled "Economy" under which a new approach to calculating solar energy costs of buildings was presented. Çakmanus claimed that "the cost efficiency of the solar energy system implemented in renovation projects can be calculated according to "equivalent energy costs""(Çakmanus, 2004, p. 90) This was an attempt to relate the costs of solar energy systems in terms of investment and management with that of energy savings, so that the economic benefits of these systems would be more open. The technological developments related to energy efficiency in buildings, were accompanied by those analysis on the economic dimension of environmental buildings. For practicing architects, as well as for owners and developers, the main question with regard to building sustainably was probably "the economic cost" of such production.[79]

5.1.2 European Union, Environmental Governance and "Us versus Them"

The increasing interest in energy-efficiency in the first half of 2000 was accompanied by the adoption of a comparison of the Turkish condition to that of the others, suggesting mainly Europe and USA. As we have already seen in the previous sections, the need for better regulations had been indicated in the articles as early as 1980.[80]

[79] These discussions were complemented by yet another discussion on photovoltaic cells. Müjde Altın presented them "among the latest products of technology". Rather than presenting the principles, the article mostly revolved around the features of Rome Children's Museum to which Altın visited in the last day of the conference "Photovoltaic in Europe: from technology to Energy solutions". "Tarih İçinde Teknolojiyi Yaşamak: Enerji Üretiminde Fotovoltaik Hücreler" Altın , Müjde. Yapı (256) 3.2003, 88-91.

[80] For example, in the ending passage of the article written by Eşher Berköz and Zerrin Yilmaz in Energy Crisis folder: It is now clear that in order to propose a serious solution to this problem, after preparing the

Later in 1994, “the insulation of buildings” which was one of the main topics of regulations in relation to energy-efficiency was discussed by two articles: First by Korhan Işıkel in his article “A New Energy Source: Decreasing Air Pollution with Thermal Insulation” (Yeni Bir enerji Kaynağı: Isı İzolasyonu Yoluyla Hava Kirliliğinin Azaltılması). This article was published in 1994 in *Yapı*. And, second by Mehmet Külahçı andKazu, İbrahim Yaşar in “The Role of Building Envelope on Natural Climatization” (Bina Kabuğunun Doğal İklimlendirmedeki Rolü) published in *Mimarlık*.

The common point of these two articles was the emphasis given to insulation in increasing energy-efficiency. In 1985, the standard “TS 825 - Conservation Rules of Heat Effects for Buildings” that we have mentioned earlier was revised in terms of decreasing the U values of the building envelope. Yet, this regulation was in many ways insufficient and the design and installation of the systems were not well mastered by architects and contractors in those early years.(Edis & Türkeri, 2012) In that respect, improvements and regulations surfaced as being necessary. For Işıkel, it was the comparison of the thickness of the insulations used between European countries and Turkey that revealed the need for modification. Külahçı and Tuğal, on the other hand, had operated a computer program measuring and comparing insulated and uninsulated buildings in terms of the heat loss in different climatic regions. The results were then presented as a graph, which revealed the effects of insulation on the outer walls on heat gain. Thus, both these articles resulted in a need for better regulations. Accordingly, one more revision came in 1998, after which TS 825 to become a compulsory standard.(Kalaycıoğlu, 2010, p. 66)

With the 2000s, the need for better regulations- and later accompanied by the need for rating standards- begun to be more explicitly stated in the architectural periodicals under analysis. This tendency was in accordance with the changes taking place in the environmental governance in Turkey, which were intertwined with the European integration processes.(İzci, 2005, p. 87) “After signing the Customs Union Agreement in 1995, Turkey was officially recognized as a candidate for full membership in 1999. Finally in 2005, negotiations were started for the full membership.

necessary researches, new regulations should be issued by the collaboration of administrators, designers, and practitioners which take into consideration the problems and inefficiencies of the existing regulation.[80](Berköz & Yılmaz, 1980, p. 21)

Today Turkey has twinning projects in the adaptation program of European Union."[81] (Kalaycıoğlu, 2010, p. 65) Environment was one of the priority areas of the Accession Partnership which meant the adoption of the EU's "environmental standards and regulations at a feasible pace for integration."(İzci, 2005, p. 92) In relation to the energy-efficiency of buildings, this influence was reflected in the legislative measures taken by Turkish government. For example, in 2000 "Heat Insulation Regulation" was legally adopted which set the rules for all buildings to reduce heat loss, to provide energy saving and to determine application guideline.(Erlalelitepe et al., 2011, p. 1750) Accordingly, in Turkey's 8th Development Plan, "the provision of environmental quality and building healthy communities in urban areas have been given high priority, and clean water, air and sustainable urban life are considered key elements of quality of life to be sought after." (Wong & Yuen, 2011, p. 245) This quest was supplemented with a series of related regulations, laws and building codes, some of them being: Renewable Energy Sources Law (2005), Energy Efficiency Law (2007), and The Regulation on Building Energy Performance (2008).

Mehmet Okutan writing in 2000 was one of the first to point towards these changes, as he claimed that European Union accession period would accelerate the adaptation of energy-efficient technologies in Turkey: "In this adaptation process, it is in our benefit to make the best of the good points of our sector so that we can strengthen our place in the future of Europe."[82](Okutan, 2000, p. 117) Thus, the expected influence of European Union in the formation of the regulations and standards were both seen as a positive contribution and an opportunity for Turkey. The following articles, on the other hand, were more pessimistic about the condition of Turkey in that respect. For example, according to İbrahim Çakmanus energy-efficient practices which have found "hundreds and thousands of applications in the developed countries", which "provide significant amount of energy savings", and which "reduce the effects of fossil fuel consumption on environmental pollution", were not being adopted in Turkey (Çakmanus & Böke, 2001). There were several reasons Çakmanus had detected, economical ones being the most evident. Turkey's per capita income was very low when compared with the developed world, thus the amount of energy saving costs remained insignificant for Turkish

[81] "Following the program, in 2007, Turkey has published a new law about energy efficiency and under the obligation of this law the studies about energy certification have begun."

[82] "Bu adaptasyon sürecinde, sektörümüzün avantajlı olduğu noktaları iyi değerlendirerek geleceğin Avrupası'ndaki yerini sağlamlaştımasında fayda bulunuyor."

households. In other words, the initial investment costs were trying to be reduced whenever it was possible and energy-efficiency measures were adding to that cost. A similar point was also suggested for the municipalities, in which the long term gains were being ignored for economic reasons. According to Çakmanus there were two important solutions: informing architects, engineers and other involved in this field on the subject, and, assembling of regulations and specifications and encouraging those involved to comply with them (Çakmanus & Böke, 2001, p. 88).

In 2004, Çakmanus had detected another cause: the lack of financial incentives from the government. In Europe, on the other hand, he detected the situation was very different: "In many European countries the government offers incentives for solar energy use, which is why the share of solar energy in the total is steadily rising."(Çakmanus, 2004, p. 94) Similarly, in 2006, Yusuf Yılmaz was also differentiating European countries, especially the Northern ones, in terms of the energy-efficiency practices. In this article, "Energy Efficiency Studies in Buildings" (Konutlarda Enerji Verimliliği Çalışmaları ve Önemi), Yıldız was emphasizing the role of standards and regulations with reference to the building directive 2002/91/EC of the European Parliament. As a result, the energy savings and the decrease in greenhouse emissions were stated as numerical facts. Against this background, the energy-efficiency practices in Turkey stood out as being insufficient:

> Turkey has not been able to adapt to the changing understandings and developments in energy conservation technologies in the world, has not been able to constitute energy standards and implement the building inspections effectively.[83]

To put it as a numerical fact, the annual average heat energy needed in housing in Turkey was 200-250 kw-hour/$m^{2,}$ whereas in Germany it was 80 kw-hour/ m^2. This time however, rather than insisting on the need for more regulations, Yıldız claimed for better implementation and inspection of the projects.

[83] "Türkiye dünyadaki enerji korunumu teknolojilerindeki hızlı gelişmeye ve nalayışa ayak uyduramamış, konutlarda enerji standartlarını oluşturamamaış ve yapı dnetim mekanizmalarını etkili biçimde uygulamaya geçirememiştir."

5.2 Establishing a Green Building Practice: 2007-2012

5.2.1 Green Building Industry in Turkey

2007 marked a significant point in terms of the development of energy-efficient practices in Turkey, and a shift of focus in Turkish architectural periodicals. First of all, it was the year in which the Energy Efficiency Law was constituted. Based on this law, one year later TS825 was revised and "Turkish Building Energy Performance Code" (2008) was established. On the other hand, with Prime Ministry Circular No. 2008/2, "the "National Energy Efficiency Movement" was started, and year 2008 was announced as "Energy Efficiency Year" with the participation of public, private and non-governmental organizations for ensuring efficient use of energy, and particularly electricity energy, at every point, and preventing its waste."(Resources, 2009) To that end, Ministry of Energy and Natural Resources gave the priority to the replacement of incandescent bulbs used for lighting purposes with compact fluorescent lamps which are up to 5 times more energy-efficient. According to the report published by Ministry, public institutions were chosen because they should set an example for society regarding energy efficiency. "Therefore, we adopt the idea that energy efficiency campaigns toward public opinion should first be implemented within public institutions."(Resources, 2009)

Against this background, starting with the 2009s energy-efficiency issues -especially those related with regulations and assessment systems- begun to take ever more space in the periodicals under consideration. Especially important were the discussion on the "The Regulation on Building Energy Performance", which as Table 6 reveals were covered considerably in the periodicals.

These developments were accompanied by the growth of the "green building industry" in Turkey and search for its place in the mainstream building industry. Thus, it was not only the environmental performance of buildings, but all the production and service sectors related with building industry, as well as material suppliers begun to be involved in the discussions in the periodicals. For example, in the introductory text to *Ecology in Yapı: Solid Steps in Ecological Architecture* (Yapı'da Ekoloji: Ekolojik Mimarlıkta Somut Adımlar) which begun to be published as an addition to *Yapı* in 2007, the editors -based upon the opinions of academicians that they have contemplated- claimed that ecological design and building was not a subject that could be realized solely with designers or architects, but necessitates the cooperation of many related

disciplines. As follows, there was an emphasis on interdisciplinarity, in which "ecological design" was increasingly defined as a relation of differing disciplines and the organization of their mutual makings.

Table 4. Articles directly related with "The Regulation on Building Energy Performance".

YAPI 2009	"Binalarda Enerji Performansı Yönetmeliği/Yeni Zorunluluklar" Bozkurt, Züleyha. Yapı (305) (327) 2.2009, 30-31.
YAPI 2009	"Enerji Duyarlı Mimarlık , Binalarda Enerji Verimliliği Paneli: 2017'ye Kadar Her Bina için "Enerji Kimlik Belgesi" Oluşturuluyor." Tuna, Rüksan. 2009/347
MİMARLIK 2010	"Enerji Performansı Yönetmeliği Neler Getiriyor." Röportaj. Tuna, Bülend. Mimarlık 2010/352, 71-73.
YAPI 2011	"Binalar, Kanunlar ve Güneş Enerjisi" Uğurel, Ateş. Eko-Dünya. Yapı (352) 3.2011, 33.
YAPI 2011	"Binalarda Enerji Performansı ve Enerji Kimlik Belgesi" Söyleşi: Bayram, Murat . Yapı (353-EK) 4.2011, 30-31.
YAPI 2011	"EKB Uygulamada Nasıl İşliyor" Söyleşi: Bekler, Seval. Yapı (353-EK) 4.2011, 32-36.
MİMARLIK 2011	"Güncel Yasa Tasarılarında Doğa Koruma" Ciravoğlu, Ayşen. Mimarlık 2011/357
MİMARLIK 2011	"Türkiye'de "Binalarda Enerji Performans Yönetmeliği" Süreci ve Hesaplama Yöntemi" Ertuğrul, İlker. Yöntem Temizer, Seda. 2011/361

There were also several other points that this introduction suggested as illustrative of the direction the field of environmental architecture were to take in Turkey, such as in this passage:

> However, works that have been conducted by the volunteers for many years in the theoretical sphere—and less in practical domain— should now be passed into legislations; ecological design criteria and parameters should be applied in design of cities, regions, and buildings; the buildings constructed by these principles should be used and managed by considering the same decisions; and professionals, executives, and even users should be educated accordingly.

As can be followed, this was a call for directing the field from "theoretical" dominancy to practice. Also of importance was the role of regulations (and later in the

text “certificate systems” were also mentioned) as they were increasingly recognized as an important element of these practices. And, last of all, there was a demand for more education that was assumed to increase the “awareness” of all the parties involved in these processes in Turkey.

In overall, this text pointed towards the development of the field of environmental architecture into “green buildings”, which acclaimed the imperative of “practice”. These changes can be interpreted in several ways. First of all, they can be seen as attempts in bridging the gap between the knowledge produced since then on energy-efficiency and environmental architecture in general, and the lack of their implementation in the practice of Turkish architecture. As we have reviewed earlier, this condition was also reflected in Turkish architectural periodicals with very few examples from Turkey. Against this background, the objective of supporting the intensification of the green building practices in Turkey was frequently stated in the editorials of *Ecology in Yapı*. Thus, the emphasis on practice can be seen as a positive contribution to the field in which the universal interpretations of the issues discussed could be reexamined against local realities.

Yet, as we have put forward earlier, in this thesis neither the production of knowledge nor its implementations in practice are taken as value-free or purely objective processes. Consequently, the issues discussed and the contexts upon which they are illuminated are quite crucial and may come to suggest many differing perspectives. Secondly, then, the route suggested with *Ecology in Yapı* can also point towards an uncritical pragmatism: “A version that is underpinned by an instrumental ‘what works’ logic is too often associated with an unprincipled, market-oriented practicalism in which practitioners are ‘generally concerned only with the immediate consequences of their actions’”.(G. Farmer & Guy, 2010, p. 370) In that respect, the subjects covered in the first issue of *Ecology in Yapı* published in 2007 can be explanatory. First of all, this issue put an emphasis on **“renewable energies”** and strategies, and published two articles directly reviewing the subject.[84] The second subject covered was **“life cycle analysis”** that became an important element of the

[84] The articles “Renewable Energy” written by Tanay Sıdkı Uyar and “Sarıgerme Manifestosu” written by Baha Kuban (in which the Sarıgerme Sun Energy Atelier that was organized back in 2001 and the outcomes of this atelier were presented) were the two examples of that subject. Renewable energies were also mentioned in the article titled “Energy Management”, but this article mostly dwelled on the energy management of high rise buildings and incorporated other subjects such as life-cycle analysis as well.

discourse on energy-efficiency in the second half of the 2000s. As one of the key steps in developing life cycle analysis, the concept of **"embodied energy"** also kept occurring within the articles, although not reviewed as a detached subject. The third subject that stood out in this issue of *Ecology in Yapı* was the **"building certificate systems"** and their implementations in Turkey.[85] Also related with "life cycle analysis" was the subject of **"building materials"**. Yet, rather than natural materials like wood or adobe this time it was a review of the potentials of steel as a sustainable material. The fifth subject was the specification of **"energy efficient equipment and technologies"** under which diverse issues such as thermal insulation and sustainable technologies were discussed.[86] *Ecology in Yapı,* although less in volume*,* also covered those more conventional subjects of environmental architecture, **"green urbanism"** and **"passive systems",** with one article for each**.**

Apart from these articles, in which certain concepts, techniques or procedures were reviewed and put forward as organized knowledge on a specific subject, there were two articles proposing ideas or a perspective on the overall state of environmental architecture. The first was a translation of an architecture written by Norman Foster and it was titled as "Architecture and Sustainability". Here, Foster was reviewing his interpretation of sustainability, its effects on his architecture and some of his buildings. As we have reviewed in the previous chapter on sustainability, Foster had already become a symbolic figure in the Turkish architectural periodicals- mostly representing technocentric tendencies. Although in this thesis, the dichotomy between technocentric and ecocentric approaches is considered with a certain criticality, the choice of Foster to represent the field cannot be taken apart from this symbolic strength. In that respect, this article supported the general direction of the discussions towards energy-efficiency that is associated with technological dominancy as the main axis of environmental architecture. The second article, on the other hand, presented which on the surface looked as a rather diverse perspective, but did not have the potency to counterbalance

[85] The article written on the subject was "LEED Türkiye'de Uygulanabilir mi?" by Duygu Erten. As we will continue to see, this subject would take ever more space in the following issues and become one of the main themes of the discourse on energy-efficiency. Thus, it will be further evaluated in the following sections.

[86] The article titled (Isı Yalıtımı ve Yapılarda Ekoloji) by Ertuğrul Şen was one such example that argued for better insulation regulations and their implementations in the built environment in Turkey. "Sustainable Technologies" (Sürdürülebilir Teknolojiler) written by Caner Demir was illustrative in that aspect in which two examples –one from Holland and one from Germany- were reviewed in terms of incorporating active strategies, biomass heating and ecological materials.

the inclination of the articles we have so far reviewed. This was a one page article written by And Akman and it was titled “Why Ecology in Buildings?” (Neden “Yapıda Ekoloji”?). Akman problematized the alienation of humans from nature, and called for a reconsideration of the relationship between “humans- buildings-nature” along “ecological” principles. Here, the relationship of buildings with their environment was defined as a dynamic system, a “micro ecosystem” that was under the responsibility of humans. Today, he claimed, the built environment was not in harmony with the ecosystem and did not support the bodily and psychologically well-being of human beings. The emphasis on health resulted in the suggestion of a solution towards the better collaboration of architects with doctors, kimyager, biologists, engineers and manufacturers of building materials. Yet, clues towards on how this was to happen were not stated. In overall, this article too did not presented a methodological and scientific basis upon which to better understand the recent changes taking place in the discipline.

5.2.2 Making Economic Sense

Based on the review we have so far put forward, it is possible to claim that the first issue of *Ecology in Yapı* came to suggest a route for practicing environmental architecture in Turkey that can be characterized with a bias towards greater resource efficiency and performance mostly by concentrating on materials and energy. In the following years *Ecology in Yapı: Solid Steps in Ecological Architecture* continued to play a central role in Turkish architectural periodicals in terms of building up the discourse on energy-efficiency. The second issue was published two years later in 2009, which then had been published regularly. In these issues, the “news” section was important as it related with a wide range of issues of green buildings -both national and international- and it presented a comprehensive review of the events and conferences that were to take place in Turkey. In that respect, these additions displayed an important point of communication to those architects interested in the subject. Also of importance, was the broadening of the geographical specificity of the examples published. As we have reviewed previously, until recently, Turkish architectural periodicals, in terms of environmental architecture, were dominated with Western examples from US and Europe, as non-Western instances were totally disregarded. This trend continued to

direct the discussions, but now China, Japan and India were also added to that list with the news section of "Ecology in Yapı: Solid Steps in Ecological Architecture".

There were also advertisements and presentations of new materials and technologies. In overall, "Ecology in Yapı" reflected the widening, or at least the attempts, of the green building sector in Turkey, and with a closer inspection it also revealed the willingness of the international market to interact with that industry. This was in accordance with the changes taking place in the fields of architecture and urban planning in the 2000s, in which the government, private sector and international investors have supported each other in creating a "good business environment". Thus, in terms of environmental architecture, it was claimed to be a transition period for Turkey as: "Government policy is becoming more aligned with Turkey's energy deficit and external pressures further encourage environmentally responsible development. Also, international investors and non-profits are importing an environmentally conscious ethos to some of Turkey's high-profile developments."(Korkmaz, Erten, & Syal, 2009) This was a rather positive interpretation of the state of environmental architecture in Turkey; nevertheless it was also relevant in emphasizing the "external pressures" encouraging the building industry. Thus, the private sector and especially international investors became one of the main drivers of green practice in Turkey.

For example, if we take the "Products" section of the 2009 "Ecology in Yapı: Solid Steps in Ecological Architecture", the products introduced were:

- INTEGRA electric roof windows by VELUX- (a global company operating in more than forty countries)
- YTONG multiport thermal insulation sheet- (YTONG is part of Xella Group with 100 factories in 20 countries and sales and marketing organizations in 30 countries)
- Solar Energy Products imported from Germany by Derin Marin
- BASF Neopor insulation material- (BASF is the world's leading chemical company. In 2013, BASF posted sales of €74.0 billion and income before special items of approximately €7.2 billion)
- MARSHALL thermal insulation system - (Turkish company working under the rubric of AkzoNobel as a leading global paints and coatings company and a

major producer of specialty chemicals which has its headquarters in Netherlands.)

- HIZMARK lightning system [87] (Turkish company established in 2004)

Another section from "Ecology in Yapı" was titled as "From Firms" (Firmalardan) which displayed a similar tendency. A page from that section can be illustrative, with three firms introducing their new projects: REDEVCO Turkey, Zorlu Energy Grubu and Varyap.

The basic premise of these additions to *Yapı*, although they aimed at a widening of scope and a more holistic approach, was that green buildings made economic sense and it was through this economic dimension that these practices were to become more widespread in Turkey. Thus, news such as:

> "It came forward that Green Building market has immunity against economic crisis." ("News," 2009)
>
> "The use of the lamps with LED system instead of the filament lamps in traffic signalization, have provided electrical savings up to 1,5 million dollars, in a year." ("News," 2009)

or statements such as:

> "The issue of 'green retrofitting', that is the renovation of the existing building-stock by making it energy efficient and environmentally-friendly, will constitute one of the most important businesses of real estate sector in future." (Sur, 2010, p. 24)
>
> "According to Pike Research Company, whose center is in USA Colorado, the size of the Market formed by great green renovations in USA is 2,1 million dollars in a year, and until 2013, this Market will grow for approximately 6 billion dollars per year." (S. Altan, 2010, p. 24)

regularly appeared within the articles.

5.2.3 Building Rating Systems

As we have already discussed earlier, 1990s witnessed an increasing interest in environmental architecture especially in developed countries and this shift was accompanied by the development of rating systems to evaluate the project's commitment to green objectives. These systems covered both new and existing

[87] For example, in 2011, three of the firms mentioned above were presented under "From Firms" section.

buildings. They were basically the outcome of an assessment with "a grade (Platinum, Gold, or Excellent, Very good, or 4star, 3-star, etc) defined within the assessment method, and based on either the sum of points or credits obtained, or on a more complex calculation incorporating weighting factors."(BURNETT et al., 2005, p. 1)[88]

For the architectural periodicals under analysis, 2007 marked a point from which onwards the interest in building assessment systems was accelerated. One of the important markers was the establishment of Turkish Green Building Association (Çevre Dostu Binalar Derneği- ÇEDBİK) in 2007 with the intentions to be a Green Building Council. Since then the Association had been organizing educational programs, developed pilot projects with Government and universities and conducted lobbying activities with purpose of increasing public awareness and encouragement of building industry. Yet, the most ambitious project the Association had undertaken was the development of a national building assessment system with the claim of being specific to the climatic, economic, social and technological context of Turkey. (Erten, 2010) Consequently, one of the earliest articles on the implementation of these certificate systems in Turkey was written by Duygu Erten as the vice president of ÇEDBİK under the title of "LEED Türkiye'de Uygulanabilir mi?". Erten started her discussion with an introduction and review of LEED and then remarked on the difficulties and necessities in the implementation of this system to Turkey. In the following years, this interpretation continued to be the main axis of the articles on building assessment systems: as a general evaluation of the systems and their implementations in Turkey. In most of the articles, these two were considered together, mainly with the aim of understanding how to best adapt these systems into Turkish building industry.

[88] The first green rating system to be established was UK based and it was titled as BREEAM (Building Research Establishment Assessment Method). It was basically a "straightforward scoring system" which calculated the environmental qualifications of buildings according to a range of measures, such as: management, health and wellbeing, energy, transport, water, materials, land use, and pollution.[88] Since then BREEAM "has become one of the most comprehensive and widely recognized measures of a building's environmental performance", and it is mainly applied in UK and Europe. The second rating system came eight years later in 1998, and it was launched by U.S. Green Building Council (USGBC) under the title of LEED (Leadership in Energy and Environmental Design). Today, LEED is considered as the most acknowledged rating system in the world with five categories of measures: sustainable sites, water efficiency, energy and atmosphere, materials and recourses, and indoor environmental quality. In time, the global standards proved to be insufficient due to regional differences and many more systems were joined from different parts of the world, such as: CASBEE (Japan), Green Star (Australia), Ecoprofile (Norway), PromisE (Finland), Green Mark for Buildings (Singapore), HK-BEAM and CEPAS (Hong Kong), SBAT (South Africa), Environmental Status (Sweden).

Approaching 2010, rating systems had become an influential subject of the field of environmental architecture. For example, the main axis of the appendix *Ecology in Yapı* (Yapı'da Ekoloji) of 2010 were green certificate systems, questioning: can the practice of eco-friendly building practices be considered apart from the green certificate systems today?[89] To that end, the periodical was analyzing four examples, three from Turkey and one from USA. The first two were shopping malls built in Ankara and Erzurum in 2009 by REDEVCO, Dutch-based retail developer who's 7.2 billion Euros worth portfolio was mainly capitalized in European countries.(Dooyeweert, 2010, p. 38) As a part of their international policy, BREEAM was utilized in the design and construction of these buildings, and thus they became the first two buildings having a BREEAM certificate in Turkey. According to Patrick Van Dooyeweert there were two main goals of implementing green certificate systems: social responsibility and the future value of estate investments. The first goal was not furthered, yet on the second one Dooyewert was suggesting the changing dynamics of the Turkish building sector with a belief that "buildings with green certificates would have higher investment value than the conventional systems also in Turkey in the future."(Dooyeweert, 2010, p. 42) Thus, these two examples suggested the close ties the recent development of the green building sector had with international investment.

In *Yapı'da Ekoloji* there were interviews with the companies as well as architects who have worked in the realization of the buildings in Turkey with certificates. One of the common points shared by many of these interviewers was that the green building sector was in its infancy in Turkey, thus had many inadequacies that must be overcome. In the case of rating systems this was revealed in the difficulties faced in the adaptation of these global standards to the regional differences of Turkey. The regional differences, however, suggested many different topics not only related with climate but with all aspects of the building process from issues of water or energy, to the availability of raw materials, economic conditions or legal framework. And, all of the reviews evoked different aspects of that adaptation process. For Caner Demir from Ecofys- a Turkish company consulting REDEVCO- the availability of green materials was the most difficult subject they had faced in Turkey due to the insufficiency of this sector. Yet, in the following part of the interview the legal framework, and the culture and way of conducting business also stood as being significant. For example, according to the

[89] Çevre dostu bina pratiği bugün yeşil sertifika sistemlerinden ne kadar ayrı düşünülebilir?

feasibility studies done initially, geothermal energy turned out to be an appropriate resource for both of these locations. Yet, the legal structure did not allow opening wells and therefor another technology was utilized for these projects. Similarly, the criterion for flood risks was also problematic because of the uncertainty about the responsibilities of the legal institutions: "Yönetmeliklerle bu konular belirli bir kurumu adres gösterirken farklı bir kurumun bu konularda sorumluluğunun olduğunu gördük."

5.3 Quantifying the Discourse

As have been reviewed in the previous chapters, the "role" of building processes in environmental degradation had been a consistent theme in the discourse on environmental architecture. For the articles working on the axis of energy-efficiency the same can be claimed. What differed, however, was the association of environmental crisis with that of energy crisis. One of the earliest examples in that respect was written by Eşher Berköz and Zerrin Yılmaz in 1980 in the folder of "Energy Crisis". Here, they claimed that:

> Today, the developments in technology have resulted in an increased energy consumption whereas the shortages in energy resources and the air pollution caused by excessive energy consumption that creates a dangerous situation for human health, have resulted in the necessity of taking precautions in order to ensure economy in energy consumption. (Berköz & Yılmaz, 1980)

As can be followed, here, environmental effects of building processes were considered in terms of energy consumption. Although, there was recognition of the environmental problems -in this case as air pollution- the interpretation of the problem as one of energy consumption have led to formulization of the solutions as the "minimization" of that consumption. This would continue to be the main reference point for the articles working on energy-efficiency issues. Environmental considerations, on the other hand, remained somewhat secondary. In other words, the decrease in environmental degradation was seen as appositive gain, but not as a guiding principle.[90]

[90] This silence was broken in 1993, with the article titled as "The Role of Building Envelope on Natural Climatization" (Bina Kabuğunun Doğal İklimlendirmedeki Rolü), written by Mehmet Tuğal and İbrahim Yaşar Kazu. Here, environmental problems were mentioned, but were confined within the contents of introduction, to generalized phrases such as: "Both the limits observed in energy sources and the increasing importance of the problem of air pollution witnessed in human settlements led to advances in solar energy in the heating of structures." (Tuğal & Kazu, 1993, p. 69) This was an additive approach, in which the environmental aspects shaping the environmental discourse could be inserted to an already

After the long break in the issues related with energy-efficiency in the periodicals, one of the first articles illustrating the formulization of the problem was written in 1994 by İbrahim Yaşar Kazu and Mehmet Külahçı, as they stated the reasons for the recent interest in the issue of energy as:

> Permanently increasing energy prices due to the inadequacy of fuel consumption in compensating the fuel deficiency of world;
> The quantity of contaminants left to the environment at the end of the heating processes, and the corresponding air pollution; and
> Minimization of the cost of the precautions for air pollution. (Külahçı & Kazu, 1994)

The hierarchy presented in this passage was significant for it illustrated the relative importance given to these parameters. If we replace air pollution present in this passage with that of environmental crisis in general, it is possible to observe that it was first of all the increase in the price of fossil fuels that led to the popularization of the concept. It was, then, followed with an increasing awareness on the severe effects of the construction and managements of buildings on the environment. The third item, in return, emphasized the economic costs of the measures taken against environmental deterioration. Thus, environmental problems were approached from an economic point of view rather than with an intrinsic value attributed to nature. Naturally, there were exceptions to this conception, but in overall this priority given to economic aspects had continue to dominate the articles written on energy-efficiency in Turkish architectural periodicals.[91] Formulization of the problem as such in return had resulted in an emphasis on the "minimization of energy consumption" as the main objective of the studies that was assumed to justify a whole range of solutions from the utilization of higher insulation standards, to the usage of photovoltaics or implementation of mechanical appliances. In accordance, the discourses on energy crisis and environmental crisis had begun to be used interchangeably and together. For example,

existing discussion whenever necessary. Thus, rather than a driving force, environmental objectives were being treated as secondary.

[91] The incorporation of the discourse on energy crisis and environmental degradation into the discussion on energy-efficiency continued with Korhan Işıkel's article "A New Energy Source: Decreasing Air Pollution with Thermal Insulation" (Yeni Bir enerji Kaynağı: Isı İzolasyonu Yoluyla Hava Kirliliğinin Azaltılması). This article was also published in 1994 in *Yapı*. Işıkel first of all tried to state Turkey's energy condition: it depended on the importation of energy resources, energy consumption was mostly based on the usage of fossil fuels (%77), and the building practices were the main sector of energy consumption (%41). He, then, related these findings with the rise of environmental problems. Referring to climate change, he claimed that: "according to environmentalist the global warming stand out as the biggest and the only real threat to humankind."(Işıkel, 1994, p. 44) The rest of the article was built upon these statements which became the reason and the justification for the utilization of higher insulation standards.

for Türkan Göksal writing in 1997, it was the rise of environmental pollution and energy costs that initiated the researches and technologies for reducing energy consumption.

> The increasing environmental pollution and the quick rise of energy costs have resulted in the reduction of the energy consumed in comfort and production, and in particular, in the increasing importance given to researches in the development of new energy production technologies. It is well-known fact that the value of energy is growing every day.[92](Göksal, 1997)

Another related strategy was representing the role of buildings in energy consumption with numerical values. In that context, phrases emphasizing the percentages were utilized, such as:

> In our country, the energy used for the heating of houses is nearly 40% of the total energy consumed, which is a very high rate.(Tuğal & Kazu, 1993, p. 71)

Or,

> According to data from 1992, the share of the housing sector in energy consumption is 41%, and as can be seen from here, housing – in other words the heating energy costs- are the most important energy expense of Turkish agenda.

Or,

> For example, according to the data in 2003, in our country, 30% of the total final energy consumption in 64 million TEP belongs to the building sector with its 19,5 million TEP energy consumption. By these data, it appears that energy efficient buildings are needed for a sustainable environment. Within a holistic perspective in the design of energy efficient buildings, decisions for recycling by energy/source consumption can be taken only by regarding the Life Cycle Approach (LCA). (Özçuhadar, 2007)

Representing the role of buildings in energy consumption with statistical data have rendered them as being "facts" and strengthened its usage in Turkish architectural periodicals. In fact, representing with numeric facts became one of the main mechanisms of the discourse on energy-efficiency. In that context, representing the environmental costs or performance gains with literal measurements and numeric facts became the norm of the articles. It was possible to observe this tendency as early as 1981 in the article "Quantifying Passive Solar Heating" (Güneşle Edilgen Isitmada Ölçülendirme). This article was proposing some "numerical knowledge" on the climatic control of buildings, especially about "direct gain" and "thermal storage wall" as two

[92] "Çevre kirliliğinin giderek artması ve enerji maliyetlerinin hızlı biçimde yükselmesi, konfor ve üretim amaçlı kullanımlarda tüketilen enerjinin azaltılması, özellikle de yeni enerji üretim teknolojilerinin geliştirilmesi yönündeki araştırmaların giderek önem kazanmasına neden olmuştur. Enerjinin her geçen gün değer kazanmakta olduğu bilinen bir gerçektir."

applications of passive systems.(Yener & Demirbilek, 1981, p. 20)[93] Another such example was published in 1989 in *Yapı,* as it studied the effects of façade elements (cephe elemanları) on the thermal comfort and energy efficiency of buildings. In this article Zerrin Yılmaz introduced two important subjects involved in the discourse on energy efficiency: the relationship of energy-efficiency with thermal comfort, and the role of building envelope in serving both these ends.(Yılmaz, 1989) [94] Obviously, thermal comfort had always been an important goal of architecture and many articles on the subject were written previously. Yet significant here was the focus on the "optimization" of the parameters that affected the interior climate.(Yılmaz, 1989) In that context, Yılmaz chose to focus on gas concrete, and analyzed a multi-floored apartment in İstanbul in terms of the effects the size of this material has on thermal comfort. The findings were then translated into tables, graphics and numerical expressions- tools which would increasingly continue to be the basic method of communication for the articles that dwell on the subject of energy-efficiency in the following years.[95]

The subjects chosen and the implementation of computer as a tool in the analysis of energy consumption and gains have intensified this strategy. And, in the end, the discourse began to be dominated by the demonstration of "matters of fact" as "the hallmark output of the scientific method and a pivotally defining feature of contemporary industrial society" (Healy, 2005, p. 240). Drawing on Bruno Latour's *We Have Never Been Modern*, Stephen Healy emphasizes the separation of the material

[93] As have been reviewed earlier, throughout the 1970s energy crisis initiated solar energy investments and innovative technologies. Thus by the 1980s, "a menu of passive heating and cooling strategies and the requisite mathematical algorithms to predict their performance were available to architects" (Hicks, 2012, p. 23). This article was one of the earliest examples of such a direction in which the passive solar strategies were being represented as numerical data.

[94] In fact, in the following years the main focus of building environmental assessment methods would be "indoor environmental quality (IEQ), expressed in terms of thermal comfort, indoor air quality (IAQ), ventilation, lighting quality, acoustics and noise, and provisions to ensure hygiene (such as prevention of bioaerosols), thereby addressing most health issues."(BURNETT et al., 2005, p. 1)

[95] The next article on the subject was published four years later, and it marked the beginning from which onwards was only an increasing interest. Similar to the international influence that initiated an interest in sustainability, the first article published in 1993 in *Yapı* was a translation from the periodical *Architectural Review,* and it was a review of a house in Cornwall with "variable skin". The articles that have been reviewed so far in this chapter revolved around passive systems or basic appliances, but the more sophisticated interactions of the discipline with technology were absent. "An Example to Energy Conservation from England: Cornwall Variable Skin House" was one such example which introduced a computer-controlled lamella system which regulated the ventilation and inner climate. Accordingly, the first sentence of this article was suggesting the function of technology in this discourse, for it defined energy conservation as, first and foremost, a subject of the advancing architectural technology. The question of technological innovations and computerization would become more evident in the following decades, but for the 1990s it was an early introduction not followed by successive articles.

"content" from the human "context" which has elevated the "matters of fact" to their universal status:

> The instrumental utility of 'matters of fact' has bolstered their authority to the degree that they are now customarily regarded as objectively mirroring the world. It is this pragmatic verification of the 'modern constitution' that underpins the unparalleled cultural power and authority of the discursive strategy of 'appealing to the facts', pivotal to the destructive logic outlined by Latour, Beck and others. (Healy, 2005)

As such "matters of fact" are granted autonomy from the human involvement in their production and became "things in themselves". Bruno Latour has proposed the concept of "circulating reference" in illuminating that process, which first of all abstracted the particulars of place and circumstances into standardized, universal and commonly mathematized understandings through a series of transformations(Healy, 2005). What is disregarded, however, is that these methods of simplification and standardization inevitably involve "matters of judgment and choice, affecting such things as priority setting and interpretation" (Healy, 2005) On the contrary, the presentation of the "matters of fact" usually conceal the practices that intermesh socio-cultural and material matters. Thus, these findings which are the results of a specific context that Özçuhadar had stated go through a sequence of transformations in demonstrating that new sustainable technologies and methods of standardization work, and it is mainly through them that the validness of a product can be detected. In that context he claimed that:

> In order to be able to know that how environmental is an idea or a product, it needs to be quantifiable, and thus, be comparable. In this way, it can be possible for the producer, user, and designer of that product to know what they are buying, selling, and producing, and to explain by referring. (Özçuhadar, 2007)

Thus, rather than "the practical success and apparent universal validity of science" it is "the global rubric they provide that makes the contemporary industrial world possible". The dissemination of the issues related with rating systems in Turkish architectural periodicals, in that context, cannot be solely explained as a rising interest or the implementation of a new tool into practice. Instead, it should be seen as part of the attempts in the alteration of the field to accommodate the refined and standardized versions of what it means to be "environmental" which is considered to be established enough for further application. In return, this global rubric both enables and constrains the practical choices available, which can be followed from the dominancy of the issues covered such as "life-cycle analysis", "embodied energy" and "building assessment

systems”- concepts closely related with the standardization and quantification of environmental practices. This argument becomes even more complicated when considered that architectural practice does not solely belong to the realm of science but extend into the realm of action, and in that context, draws heavily on applied research and tacit knowledge. Thus, architects always encounter with choices that are far from being scientific, but include a variety of social and economic parameters.

CHAPTER 6

CONCLUSION

I have started this thesis by asking "what is it that unites this vast variety of discourses that can be found in the field of environmental architecture", so that we can distinguish those approaches that are titled under "environmental", "sustainable", "energy-efficient", "green" or "ecological" from others. It was clear that there was an environmental turn in architecture, but the place occupied by that turn was hardly fixed and remained to be evaluated. In that context, I have first of all started with a description of the "wider picture" like a bird's eye view, so that I could have a sense of the structure and the organization of that discourse. This was in a way necessary, for there were not many analyses that covered the course of the field in Turkey as a whole. Such an attempt has resulted in a review of the last five decades of environmental discourse in Turkish architectural periodicals illustrating how certain concepts and themes arise at specific time periods and the transformations of the subjects covered under these titles. Yet, these establish only a part of the discursive character of environmental architecture. Underneath these rather descriptive considerations, however, was a search for understanding the "problematic" of the discourse- "a complex whole which is neither reducible to its elements nor to some essence of which its parts are different expressions" (Teymur, 1982). As put forward in the introduction, following Necdet Teymur, I have identified this problematic as that of a "Human-Environment" problematic with variants such as subject-object, real-thought or nature-culture.

The most evident outcome of such an analysis was that the discourse on environmental architecture in Turkish architectural periodicals presented an ahistorical and generalized outlook. To begin with there was "confusion" on the specificity of the objects of the discourse. Thus, in most cases, it was unclear whether one talked about a real, physical issue or an ideal, discursive object. Within the same text, environment could refer to an empirical object open to observation, to an ideal essence referring to values such as "unity" or "holism" or to a resource of material and energy. In other words, "environmental realism", "environmental idealism" and "environmental instrumentalism" were all at play. In all cases, however, the discussions were seldom

situated in their historic contexts. The absence of such analysis is important in two respects. It is essential, first of all, in understanding and explaining the nature of the discourse, and secondly, in making explicit the dialectical relations between the discourse and other social elements. Here, I echo Norman Fairclough in that Critical Discourse Analysis aims "systematically explore often opaque relationships of casuality and determination between (a) discursive practices, events, and texts, and (b) wider social and cultural structures, relations and processes" (Fairclough, 1995, p. 132). Thus, I claim that this ahistoricity and generality is central in identifying the structure of the discourse on environmental architecture in Turkey, as well as its relations with the dominant social forces. In this conclusion section I aim to review this claim, first by a consideration of the taken-for-granted assumptions shaping the discourse, and secondly by an analysis of its relations to non-discursive formations.

6.1 The "Givenness" of the Discourse

The analysis put forward in the earlier chapters uncovered the centrality of taken-for-granted assumptions and givenness of the terms and definitions in the construction of the discourse on environmental architecture in Turkey. This was analyzed, first of all, in the reduction of the concept of environment to that of "environmental problems" as one the most prevailing themes shaping the discourse. In most of the articles, the discussion started with the portrayal of a global environmental crisis in which several of the environmental problems -such as climate change, global warming, biodiversity, or destruction of ozone layer- were listed. These problems transcended the limits of our sensory perceptions in which we became more and more dependent for their definitions on experts. The environmental risks seemed distant and long term, and the complex relationship between our daily actions and their consequences was blurred. Thus, the social processes which render the physical world as in danger of an environmental crisis were hidden. Interestingly, even the scientific researches rendering these problems as facts were not referenced. Thus, the discourse on environmental crisis, upon which all the other claims of the discourse on environmental architecture was based, was itself a pre-given and not a scientific object. Lacking however, was a consideration of the specific environmental conflicts from Turkey. Even when they have found reflection in the periodicals they stayed as isolated reviews -

mostly descriptive- and no consideration of their links with the processes and practices of architectural production were presented.

The same was valid for the adoption of the "sustainability" concept. The dominancy of the definition of sustainability proposed by Brundtland Report was significant, yet the critical questions suggested by the discourse on "needs" and "future" were seldom referred by architects. Sustainability posed the question of "whether, or how, environmental costs are passed on from one group of people to another, both within societies and between them" (Redclift, 2005). In the context of architecture, the needs also refer to distribution of resources and our consumption patterns. Leaving aside these questions, in the Turkish architectural periodicals the Brundtland definition was taken almost as a certainty which solidified the justification for any type of action taken in the name of building a sustainable future. Thus, it was the abstract notion of an "architect" -almost in a universal and timeless manner- that was "responsible" from caring for or saving a similarly abstract "environment". As sustainability had turned into a mainstream concept, its critique had also found space in the periodicals. Yet, I claim, the structure of the discourse had stayed the same in that it was again the abstract notion of an "architect" or the discipline or architecture, this time responsible from implementing a loosely defined social or ethical dimension. Thus, a critical analysis which examined the material changes taking place in the physical environment, architectural culture or building processes in Turkey was very rarely presented.

The third dominant theme, energy-efficiency was similarly based on taken-for-granted assumptions, "the scarcity of energy resources" being the main. This is not to say that there were no real shortages to energy or resources. Yet, energy crisis is not only related with "natural" limits, but also with human activities. In the lack of an analysis on the human choices leading to energy consumption, the discourse has reduced the problem to that of minimizing energy consumption. The same hold true for the discourse on the role of architecture in energy consumption and thus environmental degradation. Given the limited involvement of the architects in the total construction activities, the percentages presented in the articles –which were very seldom referenced to scientific researches- misinterpreted and overstated the influence of architects in altering these industry-wide statistics (Moe, 2007, p. 25). Thus, the discourse was once again built on the responsibility of an unspecified subject, this time as that of building in a less energy and resource consuming way. The actual context with a consideration of

the larger dynamics of energy end resource consumption in the construction industry in Turkey, on the other hand, was rarely analyzed in the articles.

Taken as a whole, although it was possible to witness a transformation of environmental considerations in Turkish architectural discourse from that of radical reflection to legitimate concerns, this "legitimation" was based on the unquestioned givenness of the objects and statements of the discourse. As a result the discourse had operated within "an unquestioned *field of reference that is itself a given*" (Teymur, 1982, p. 94). This field had established the basis for both ethical responsibilities and a route for action for architects. Yet, as it stayed within the borders of ahistorical and abstract interpretations, the discourse on environmental architecture could not provide the critical tools to present a deeper knowledge with regard to the conflicts between the natural environment and our building practices.

This is not to say that the ethical framework suggested by the environmental turn in architecture is pointless. On the contrary, I believe, the main potential in refocusing the questions of architecture in new and effective ways lies in this terrain. However, it needs reconsideration. As Chapter 2 analyses in more depth, contemporary environmental movement has always withheld an ethical indication which rested on the critique of the technological capacities developed in the first half of the twentieth century, and on the anxieties about the consequences of the modern way of life in the post-war period. This was based on our changing interpretations of the "Human-Environment" relations in which humanity or society was portrayed as the cause of the degradation of nature through its actions, and nature reflected this condition back upon itself. Thus, the rise of contemporary environmentalism withheld an understanding of "sovereignty of nature", in that nature decided the "limits" of human intervention, and not the other way around. Yet, in the 1980s the alignment of the environmental concerns with economic considerations through "sustainable development" has transformed the portrayal of the current state from that of a catastrophic imagery of the 1960s and 1970s to a one which we could prevent with strategic intervention. This has reinterpreted the problem to that of the choice of a "sovereign subject".

Today, in the field of architecture, environmental problems and crisis have become the structuring theme as the source of an authoritative obligation- but one that is based on a vague moment of consent. So, there seems to be a general agreement among architects that we need to build in less environmentally-destructive ways. To put it in another way, the problem is formulized as one of "raising awareness" or "intentionality"

of architects. This assumes that by "consciously deciding on a course of action one can design better"(Feng & Feenberg, 2008). This, as have been argued in Chapter 5, was based on an understanding of technology as a neutral medium to human ends. Thus, the role of architecture was emphasized as that of minimizing energy consumption and the nature of design as being primarily technical. Quantification of the language used and the emphasis given to standards were the main discursive shifts to that end.

In that context, I claim that the dominancy of the technological and regulatory solutions in the discourse on environmental architecture in Turkish architectural periodicals, especially in the second half of the 2000s, is closely related with the construction of the problematic of the discourse itself. I claim that environmental discourse in architecture has created a speculative basis of legitimacy which in return reduced the concept of responsibility to that of the intentionality of the architect removing it from its social and economic context. Returning to the discussion I have put forward earlier, the "confusion" regarding the objects of the discourse is one of the mechanisms in depoliticizing the claims that the environmental turn may suggest. In return, as I claim in Chapter 5, the centrality of the process of "justification" in the construction of the discourse on environmental architecture in Turkey succeeded more in justifying the mechanisms submitting to authority rather than assigning the notion of responsibility to practicing architects. Thus, claiming the extent of the environmental degradation became the reference point for a wide range of differing approaches and practices.

Here again, the "modern constitution" was at work in isolating the material "content" from human "context" and granting "matters of fact" their "universal" status (Healy, 2005). Distancing itself from the critical interpretation of the actual context, the discourse on environmental architecture positioned itself as a rational, well-intentioned route of action committed to well-being of future generations. Consequently, the discourse on environmental architecture in Turkish architectural periodicals increasingly emphasized its practical relevance above and over the initial critiques inherent environmentalism. As such, the problem has turned into that of providing practical green solutions in search for some kind of a middle ground between economic considerations and environmental concerns.

There were also accounts which argued against the hegemonic dimension of the language of pragmatism. Yet, as have been reviewed in Chapter 4, the discourse on the "ethical" and "social" responsibilities had displayed a similar structure in that it

presented a reductionist approach that stayed as ahistorical and placeless statements with no involvement of the practice. Thus, the notion of the social was also conceived as a pre-given context in which everything was situated. This has resulted with an intensification of the tension between idealism and praxis inherent in the green debate, between "technocentric vs ecocentric", "reformist vs radicals", "weak vs strong", or "mainstream vs social". Such dualisms simplified things conceptually but gave little guidance as to understand the actuality of practice. More importantly, it strengthened the unseen borders cutting through the different aspects of issues analyzed and concealed from view their alternative orders. Thus, if one needed to detect the causes of the crisis that we face today, s/he could condemn the "other", whether it was modern architecture, industrialization or urbanization.[96] If one needed to render the extent of that crisis s/he could use percentages and numerical values, even without referencing to the scientific research which led to their formation. If one was reviewing the application of a specific technological appliance in the minimization of energy consumption, then, there was no need to making explicit the socio-cultural processes that made it possible. If one wanted to criticize the market-oriented practices s/he could argue for the incorporation of the "social", but not necessarily get involved with the "realities" of the practice.

What I claim instead is the creation of new categories that may better reflect the ever-changing configurations of our building practices. One way to do so is to move ahead from those universal formulas presented in the periodicals, whether in the form of rating systems, the principles guiding practice or a call for ethical underpinnings, and complement them with locally and contextually dependent analyses. The second would be for Turkish architects to take more active role, both in theory and practice, in considering the role of "nature" and "environment" in relation with their profession. This is ever more so important, given the changing ontological quality of nature that is "no longer conceived as an objectively given, though cognitively mediated, reality, but as a constitutively fluid entity, a contingency purposefully produced and controlled for instrumental ends" (Pellizzoni, 2011, p. 802).

[96] The built environment as it is practiced in the modern era is believed to have harmful impacts on both nature and human wellbeing. This emphasis is also evident in the articles that are published in the architectural periodicals. Although not always being explicitly stated, in the articles related with the subject of this thesis, there is always a complaint hidden between the sentences about the current state of the profession. Thus, environmental architecture is positioned as opposed to this other, and claims to initiate a change in the discipline from a destructive approach of nature that is modernist to a new paradigm of ecological values.

6.2 The Relations of the Discourse

The previous section has outlined the "givenness" of environmental discourse This section starts from that argument and moves toward the "relations", first of all between these two discourses and then to their relations to non-discursive formations. This is analyzed, first of all, in the interface between the "globalization" of the environmental discourse and its adoption into Turkish architectural periodicals. This is a story which presents consistencies, as well as interesting bifurcations. As such, one of the main discussions of the thesis has turned out to be the complex and dynamic relation between an idea-mostly in the form of predefined and agreed concept such as "sustainability"- and its interpretation and implementation in a specific context- that of Turkish architectural periodicals. Thus, all the chapters has revealed this dynamic: adopting, on the one hand, theories and histories from "outer" sources being mostly "Western" and presenting twists and turns in their selective adoption. This, I believe is not confined within the borders of the architectural periodicals but illustrates the general attitude of the studies working on environmental architecture in Turkey in general.

One such arena was the historical narratives of the evolution of the concepts and themes around which the discourse on environmental architecture was constructed. In architectural discussions it was commonly argued that the field had witnessed a shift from those earlier notions of "green" and "ecological" to "sustainable".[97] Yet, although this periodization was in essence put forward for the Western experience, in most cases it was assumed that a similar trajectory was also evident for the Turkish architecture. However, as the review so far revealed, what may be applicable to the "Western" experience did not directly fit into the Turkish case. For example, the terms "green" and "ecological" had not taken up much place prior to 2007 in Turkish architectural periodicals, whereas it was mostly the concept of "environment", and through the lens of the global environmental politics, that dominated the introduction of environmental architecture. (See Appendix 2) More interestingly, though, given the dominancy of the

[97] One of the important texts in that context was written by Pauline Madge and it was titled as "Ecological Design: A New Critique" (Madge, 1997). For example, two of the most relevant theses on the subject conducted in Turkey -"A Critical View of Sustainable Architecture in Turkey: Proposal for the Municipality of Seyrek" (2003) and "An Alternative Approach Towards The Interaction Of Architecture And The Idea Of Sustainability: The Impact Of "Place" On Environmental Awareness" (2006) – was referencing to this article in length in depicting the background for understanding environmental architecture. I, myself, have also referenced to this text in Chapter 2 in illustrating the course of discourse on environmental architecture in Western discourses.

developmental discourse in Turkey at the time, the period until the 1980s was marked by a resistance of environmentalism rather than its appreciation. Environmentalism was thought to be the product of the developing countries and in conflict with the development strategies of the country. Thus, environmentalism was associated with the West or the developed and did not fit well with the priorities of "intellectuals and the highly politicized Chamber of Architects", who "leaned toward Third World-ist versions of modernization, looking no longer at the West but at squatter houses and folk architecture and shifting their emphasis from aesthetics of architecture to the politics of production processes"(Bozdoğan, 1997). The discussions in this period mostly revolved around binary couples such as "developed versus developing" and "development versus environment".

This interpretation of environmentalism had begun to change with the economic restructurings of the Özal government in the 1980s towards export-led growth in an open market. The developmental discourse had somewhat loosened, the international influences became more diffused in the periodicals. Thus, the concept of environment had witnessed a sudden upsurge of interest in which the basic terms and themes of the discourse were introduced to the readers. On the one hand, a portrayal of an "ecological worldview" was being initiated through terms such as "balance", "ecosystems" and "holistic". On the other hand, the modernist conceptions of nature alongside the critique of industrialization and urbanization were being opened to question. As have been put forward in Chapter 2, these had already been an important part of the discourse on environment in the "Western" world in the 1970s. The period between 1981 and 1984, had witnessed a condensed appropriation of such rhetoric into Turkish architectural periodicals. Interestingly, this was followed with a period of total silence until the early 1990s. Sibel Bozdoğan claims that the rise of "postmodernism" in Turkey in the 1980s has pointed towards both "the critical dimension of postmodernity and its co-option into a justificatory stylistic trend in architecture" (Bozdoğan, 1997, p. 150). In that context, Turkish architectural practice had witnessed a move from the political economic context into "experiments in form and image making for private clients who can afford it, at the expense of the larger social agenda of modernism" (Bozdoğan, 1997, p. 150). The questioning of the modernist conceptions of nature can be taken as a reflection of the critical dimension, yet apart from that, environmentalism was perceived as an irrelevant topic in architectural periodicals. Environmental considerations were still thought to be issues related more with politics in Turkey rather than the discipline of architecture and

in that context did not fit well with the stylistic explorations of that period. And, there was not enough momentum in Turkey –let alone in architecture- towards environmental issues that could generate its own statements.

This has begun to change in the early 1990s, from which onwards the issues that could be related with environmental architecture begun to take ever more space in Turkish architectural periodicals. This was a small, but steadily rising interest. Such a transformation was in accordance with the changes taking place in the international agenda of architecture which had been reviewed in Chapter 2 under the section of "Incorporating Sustainability into Architecture". To summarize briefly, architecture was adapting to the new economic paradigm of "free market neoliberalism" and "adjusted socially to the requirements of this system"(Kaminer, 2011, p. 150). This new economic and social landscape had also led to the establishment of a variety of practices and discourses that can be titled under "global environmental management". Taken together, these had resulted with an increasing interest in environmental issues in architecture that is revealed in the involvement of the "star" architects with such matters. In that context, sustainability rose into a mainstream and global influence and it was institutionally recognized in architecture. Sustainability fitted well with the transformations taking place in the discipline for it was mostly interpreted as a reconciliation of the imperative of continuing economic growth with the need to address environmental degradation. Thus, sustainability quickly became the catchword of the 1990s in the field of environmental architecture.

Chapter 4 and Chapter 5 had revealed these two interrelated drives of the field: first of all through sustainability and its search for balancing the three pillars of "society, economy and environment"; and secondly through the imperative of energy-efficiency which seems to dominate both the discourse and the practice. In the introduction of these discourses into the periodicals, the influence of the international agenda of architecture and the globalization of the sustainability discourse that I have rendered, were very prominent, partly because this period witnessed the globalization of the architectural practice and Turkish architectural periodicals had become more responsive to the changes taking place in the international agenda of architecture. Both Chapter 4 and 5 have shown these influences through international conferences introduced, examples chosen, changes in the legislative system as well as the technological paths suggested. Yet, the specific adaptation of these discourses into the Turkish case presented a unique picture.

First of all, although sustainability had entered the articles in the early 1990s, it was not until the 2000s that it became an accepted concept defining the field of environmental architecture. In that context, the concept throughout the 1990s continued to be mostly discussed by intellectuals and was implemented in a top-down fashion. But, it was not only this time lag that differentiated environmental discourse of Turkey from its counterparts in international discussions. Like the introduction of environmental politics, the critique of the concept has superseded its establishment. The emphasis given to the conflict between the "developed and developing" in the 1970s had waned and was replaced with the tension between the social and economic dimensions of sustainable development. The "environmental" dimension, on the other hand, continued to stay secondary and did not become a crucial part of the discussions. The figures initiating this argument were some of the most known figures of Turkish architectural discourse such as Oktay Ekinci, İlhan Tekeli and Uğur Tanyeli, who acknowledged the transformation taking place in the field of architecture in the "West", but presented differing opinions on its significance. Underlying all, however, was an attempt in how to position against the economic transformations taking place in Turkey and in world at the time period: what would be the critical potential of architecture within this changing social and economic landscape. This was in accordance with the changing interpretations of the "postmodern condition" defining the field at the time period, in which the celebration of the postmodern had begun to wane and both the discussions and the practice begun to be dominated by tensions such as practice versus theory or autonomy versus dependency. Thus, on the one hand, the reorientation of the discipline to itself rather than the social and economic context was cherished, and on the other, the architectural products were condemned for being empty of any value judgment. The environmental dimension was perceived in a similar manner. It suggested both an alternative to those external constraints and it also suggested just another form of economic intervention. In fact, the internal relations of the field of environmental architecture were not yet totally recognized and it connoted significance as long as it fitted with those discussions on the autonomy and responsibilities of architecture.

As analyzed in more detail in Chapter 4, according to Ekinci sustainability was providing a point of resistance against the economic interests shaping our urban environments. Tanyeli, on the other hand, had presented a somewhat "weaker" role for architecture as dependent on external determinants. In that context, the ethical agenda

proposed by environmental architecture, in which architects were assigned a leading role in saving the world, proposed an "illusion". Tanyeli claimed that "those who try to save the world through architecture and architectural tools first have to acknowledge that they are dealing with a problem that does not belong to architecture's knowledge domain. The ones endangering the future of the Earth are not architectural products, but those technologies and large scale politics in which architects take little part"(Tanyeli, 1994) . İlhan Tekeli, on the other hand, has moved away from his total dismissal of environmentalism which he defined as an instrument of the developed countries in 1974, and tried to provide a middle ground so that sustainability was not seen in itself as a total solution, but as a minor advancement in social struggle: "The superiority of sustainability is that it is a flexible concept that can be fill with social efforts. Sustainability enables both small interventions in the existing system, as well as, deeper transformations in the society" (Tekeli, 1995).

Energy issues which begun to take evermore space in the articles after 1993, on the other hand, displayed a differing character. With the law implemented in 1984, Turkish energy sector was liberalized in order to open it to private sector. Thus, "by 1987, the total energy import exceeded the national energy production" and Turkey has become an energy-dependent country. "However, dependency of the economic growth on the short-term capital inflows created a fragile equilibrium that became evident with financial crisis in 1994" (Joberta & Karanfil, 2007, p. 5450). In that context, the researches done in solar energy had witnessed an upturn in Turkey in the 1990s and this was reflected in the periodicals. Thus, rather than being associated with, questioned or at times rejected by the intellectuals as being a Western or global category, energy-efficiency has presented a more modest outlook and begun to pave its own course within the periodicals.

By the early 2000s, however, these two routes have begun to converge and supplement each other. It was only then, and within the neoliberal restructuring of the 2000s that environmental discourse was finally incorporated in Turkish architectural periodicals. In the first half of the 2000s, sustainability had become a concept shared by all, an umbrella concept under which differing issues and approaches could be united. This period, also witnessed an increasing interest in energy-efficiency such as passive and active systems, photovoltaics and thermal comfort in buildings. Taken together, these have finally reflected the logic of "ecological modernization" towards a utilitarian logic with a belief in institutional fix for present problems. In that context, the

periodicals turned to Western sources of knowledge and information, and tried to create a base upon which to act in practice. This was mostly presented in the form of examples, principles and categories in the articles. Thus, "appropriation" became one of the main mechanisms defining what it means to be environmental. According to Teymur, "a discourse is a *potential* tool, whose utility the dominant power cannot ignore". Thus, whole sets of institutions are established "*to maintain or modify the appropriation of discourses*, 'with the knowledge and powers it carries with it'"(Foucault, 1971; Teymur, 1982, p. 166). The influence of the international agenda in the introduction of the term "sustainability" into the periodicals, as well as in the establishment of what it means to appropriate it in practice, in that context, was not coincidental. Appropriation, now, did not only refer to the incorporation of the terms or positions but pointed towards physical, economic and administrative considerations. Thus, the knowledge that was assumed to reside in the examples of communities, buildings, legal structures or technological appliances was presented as being neutral, universal and legitimate. These discursive shifts, I claim, should be seen as part of the larger transformations taking place in the political and economic spheres of Turkey, as well as, architectural practices.

There were several important factors initiating such a transformation. First of all, the economic crisis of 2001 and its resultant IMF stabilization package initiated change in the economy. This package suggested reforms embracing both privatization and a reduction in public sector. Secondly, and relatedly, 2002 national elections have resulted with a government ruled by a single party, which gave momentum to these reforms. Thus, the economy of the country begun to display a seemingly "spectacular" growth, with the volume of foreign trade showing a threefold increase and the flows of foreign direct investment increasing considerably (İslam, 2010 p. 60). Thirdly, the construction sector have witnessed a construction boom between 2002-2007, which according to Osman Balaban differentiated from that of the 1980s, in that "unlike the previous boom, which had been caused by domestic forces, foreign demand and capital inflows played a key role in the recent boom. A substantial amount of foreign capital flowed into Turkey after 2002" (Balaban, 2012, p. 29). Accordingly, local administrations were given additional authority by the laws of 2004 and 2005 (Nos. 5216, 5393) and by law (No. 25951), and they started to play both "a regulatory and a direct investor role" (Turk & Altes, 2010). Public sector, in return, has "enthusiastically contributed to the development of construction boom between 2002 and 2007 in Turkey. The government

undertook significant steps to encourage public agencies and private developers to initiate large-scale urban (re) development projects"(Balaban, 2012).[98] Thus, an era of urban renewal and rehabilitation has begun, restructuring especially the urban landscape in the big cities of Turkey.[99]

The opening up of the Turkish economy to foreign capital has required global competition and "sustainability" was one of the parameters of this change. Thus, the 2000s saw the steady rise in the foreign investments in "green" buildings in Turkey, which were mostly located in big cities- İstanbul being the main dominant. As a result, a green building market has begun to be established in Turkey. This was also accelerated with the negotiations for the full membership of Turkey into EU in 2005. Environment was one of the priority areas of the Accession Partnership which accelerated the legal integration of energy issues into institutions. In 2007 Turkish Green Building Association (Çevre Dostu Binalar Derneği- ÇEDBİK) was established. It was also the year in which *Yapı* begun to publish its addition, *Yapı'da Ekoloji*. And, the discourse on environmental architecture has taken another turn towards the dominancy of efficiency, technological advances, management and procedural integration.

There were several implications of these transformations on the architectural profession in Turkey. First of all, the publication of *Yapı'da Ekoloji* can be interpreted as the confirmation of the field of environmental architecture in Turkey. It was no further perceived as an outsider or secondary, but an integral part of the architectural scene with the power to transform the practice. Thus, it was no longer confined within the limits of the conceptual, but was thought to be pointing towards certain changes in the discipline. Secondly, and mostly reflected in *Yapı*, was the influence of international capital and foreign investment in the construction of a green market in Turkey. This was perceived in the increasing number of the advertisements on environmental materials and systems that belonged to international firms. Also of importance was the changing character of the published examples from Turkey, which have transformed from those small-scale

[98] "Annual number of construction permits issued by municipalities is the major indicator for new construction in Turkey. Figures presented in Table 1 indicate a rapid increase in new construction starts after 2002, rising from 43,430 units in 2002 to 114,204 units in 2006 and 106,659 units in 2007. Likewise, total floor area of new buildings increased from 36 millionm^2 in 2002 to 123 millionm^2 in 2006 and 125 million m^2 in 2007. Average annual growth rate of new construction was 22% for the period of 2002e2007 based on number of permits, and 30% based on total floor area of permitted buildings."(Balaban, 2012)

[99] The connection between these urban restructurings and the establishment of a green building market is, I believe, quite important and is yet to be analyzed in Turkish architectural discourse.

“ecocentric” approaches to large-scale buildings with assessment values- either invested by foreign firms or by Turkish companies which tried to a statement in international market. Thirdly, the perspective suggested by the intervention of foreign investment has pointed towards a certain understanding of environmental architecture, mostly referred as “green”, which put emphasis on the minimization of energy and resource consumption. The usage of the term green, in return, has increased considerably in the periodicals after 2007. Certain subjects, such as rating systems, life-cycle analysis and technological innovations have begun to take ever more space in the articles. Thus, the discourse on environmental architecture has turned out to be one of regulation- more like a problem solving than a moral action.

6.3 Concluding Remarks

In 2006 İstanbul Metropolitan Planning Office has organized a competition for the master plan of Küçükçekmece. The project was given to Ken Yeang, probably the most renowned architect in the field of environmental architecture. Yeang is a figure who is recognized for his high-rise bioclimatic buildings, but not only in terms of their energy-efficiency features –although they are an important factor- but also for his holistic approach and sensitivity to biodiversity. Moreover, he is one of the most influential architects writing on the subject discussing theories, concepts and ideas- starting with *Designing with Nature: The Ecological Basis for Architectural Design* that was published in 1995. In the case of İstanbul, “Yeang was selected for the transformation of the southern part of the Küçükçekmece district on the European side, where the Küçükçekmece Lake merges with the Marmara Sea, into a touristic and recreational area” (Bartu & Kolluoglu, 2008, p. 14). According to the internet site of Municipality of İstanbul the aim of the project was to free Küçükçekmece Lake from illegal settlements that had been causing big environmental problems, and turn it into a country side exemplifying İstanbul's rich fauna. Yeang, on the other hand, in an interview with a national newspaper was defining the aim of the project as to create a 2 km long park that would act as an ecological corridor. In his competition submission, Yeang claimed that this “corridor” will make the “area's biodiversity whole again by linking the mountain and upland ecology to the north with the coastal ecology to the

south".[100] This ecological bridge, however, was to contain an international cultural center, a seven-star hotel, an aquapark, and a marina, as well as aqueducts like in Venice.

This example is significant for the purposes of this thesis because it both reflected the neoliberal structuring the city of İstanbul had been witnessing through major urban renovations and the claims of an "ecological" intervention with the proposal of Yeang. Mücella Yapıcı, in a presentation she had done in the symposium titled "Ecologic Building Design: Materials, Technology and Environment" in 2009, illustrated the controversial processes in which this competition had come into being, the manipulations over the city plans and its relations with the third Bosphorus bridge. The representation of the project in the periodicals, however, presented a rather different picture than that of Yapıcı. For example, in the interview published in 2008 in Yapı, Yeang was referring to ecology, biology, interrelatedness and holistic thinking. In defining "eco-design", on the other hand, he was claiming that "whether we built in the city or elsewhere, we should never conceive it as designing an independent building. Rather, it should be addressed within the context of its environment, in its ecological features and establish physical, systemic and lasting integration" (""Ken Yeang'ın ekolojik Tasarım Yaklaşımı" ", 2008) The context, however, covered considerations for weather and wind patterns, light and water, but apparently did not refer much to the social and political parameters. "Ecology" and "bio-diversity" were considered to be beyond those considerations. Here again, then, was a consideration of the natural and the social as separate entities. Yet, this example also displayed the blurring of the boundaries because, even if we left aside the intense public debates on these major urban regeneration projects and its effects on the local citizens, the ecological question still remained- as this had already been marked as a site of protection for its natural characteristics in the urban plans of İstanbul. Turkish architectural periodicals have taken on this project by publishing two articles on Ken Yeang in 2008 and 2009, yet neither has questioned the project's political and social underpinnings or its relation with urban renewal projects.

[100] http://www.architectsjournal.co.uk/news/yeang-sees-off-international-stars-to-bring-home-bacon-for-llewelyn-davies-yeang-images/580628.article

Fikret Adaman and Yahya Madra define neoliberalization in relation with environment as "a governmental epistemic grid that aims to organize the entire social field through a calculative and calculable governmental logic" (Adaman & Madra, 2014, p. 32). The same logic, I believe, is also at work in the construction of the field of environmental architecture in Turkey. That is why; the environmental turn fit well with the insistence on the "real" in architecture, a concept that has been presented in the introduction of the thesis in Chapter 1. Tahl Kaminer, define the return of the real in architecture in the 2000s as "expressing the newly found self-confidence of the discipline and its acceptance of the new social landscape" which "leads to an impasse, a gridlock preventing further change and precluding anything but the continuous celebration of the existing" (Kaminer, 2011). Governmentality, when used in a Foucauldian sense, points towards the transformation of disciplinary forms of power to neoliberalism in which individuals are understood as self-interested rational actors who can be motivated to exhibit appropriate behaviors through the manipulation of the motives (Fletcher, 2010). The uncritical pragmatism dominating the discourse on environmental architecture in Turkish periodicals should be viewed as part of this changing mechanism. In analyzing the works of "Young Turk Architects" in the 2000s Sibel Bozdoğan and Esra Akcan was pointing towards a similar inclination towards uncriticality shaping the whole field: "Judged by the criteria of the 1960s, these projects are not 'critical': none of them aim at social transformation, political revolution or resisting the economic system. On the contrary, architects of this generation have deemed such aims as too unrealistic" (Bozdoğan & Akcan, p. 280).

This takes us back to the question I have posed in the beginning on "the old conflicts and new possibilities" the environmental turn has to suggest to the field of architecture. The analysis put forward revealed that, in spite of the apparent interest in environmental issues in Turkish architectural periodicals in recent years, the transformative power of the discourse towards change is quite difficult to discern. In actuality, it displays to be much more in accordance with the "status quo", rather than presenting fundamental changes in the practice. There were, evidently, those studies or instances in the articles which blurred the stated boundaries and questioned the uncritical pragmatism shaping the field. This thesis is rather generalized in that respect, for it overlooked those disjunctions at times and tried to form an understanding of the rise of its "problematic". This calls for further studies in architectural theory in Turkey in which the "environmental" in architecture is analyzed as a discursive formation at the

intersection of both discourse and practice. In fact, one of the findings of the thesis is that the main contention shaping the discourse on environmental architecture in Turkey is not so much the dissemination of the concepts or the formulization of a single definition or universal principles, as have been frequently claimed in the articles. Rather, it is the implementation of these principles to specific activities of architecture which involve social, cultural and economic actualities.

In spite of the limitations of this study, however, it would still be fair to conclude that, environmental architecture does not provide a ready-made context in which a more inclusive engagement with the environmental considerations will simply happen. Instead, the study revealed the fact that architects should continue questioning "how we wish to live" which calls for a critical consideration of our being in the world as well as our practices. Yet, it also revealed that the old ways of answering these questions are not valid to meet the challenges suggested. The analysis had suggested that an argumentative and critical terrain in which the problematic of the discourse –that of "Human-Environment" relations- is not yet established in Turkish architectural periodicals. The thesis has tried to form an initial step towards that aim by emphasizing the unquestioned assumptions shaping the discourse and made explicit the link between the "givenness" of the objects of the discourse with that of its standardization and normalization, and thus commodification. One of routes suggested in that respect was the reconsideration of the problematic of the discourse so that new ways in which we can consider the Human-Environment relation could emerge in architecture. Given the imbalance of this equation in Turkish architectural periodicals in which "environment" and "nature" has for the most part stayed as secondary upon those more compelling questions of the social or technological, this seems even more relevant.

BIBLIOGRAPHY

Adam, Robert. (2012). *The Globalisation of Modern Architecture : The Impact of Politics, Economics and Social Change on Architecture and Urban Design Since 1990*. Newcastle upon Tyne: Cambridge Scholars Publishing.

Adaman, Fikret, & Arsel, Murat. (2013). Environment. In M. Heper & S. Sayari (Eds.), *The Routledge Handbook of Modern Turkey*: Taylor & Francis.

Adaman, Fikret, & Madra, Yahya M. (2014). Understanding Neoliberalism as Economization: The Case of Environment. In Y. Atasoy (Ed.), *Global Economic Crisis and the Politics of Diversity*: Palgrave Macmillan.

Adams, William Mark. (2009). *Green Development: Environment and Sustainability in a Developing World th*. New York: Routledge.

Akbayır, Sıla. (2010). *Türkiye'de Çevre Politikasının Dönüşümü: 1980-2006.* Gazi University, Ankara.

Akış, Tonguç. *Teaching/ Forming/ Framing a Scientifically Oriented Architecture in Turkey Between 1956-1982.* (PHD), METU, Ankara.

Ali, Mir.M. (2008). Energy Efficient Architecture and Building Systems to Address Global Warming. *Leadership and Management in Engineering*(8), 113-123.

Altan, Sercan. (2010). Yeşil Yenileme, Yapı Sektörünü Canlandıracak. *Yapı'da Ekoloji* (341-EK), 24-27.

Altan, Türker. (1981). Çukurova'da Endüstrileşme ve Yarattığı Çevre Sorunları. *Mimarlık*(2), 13-16.

Altuntop, Necdet. (1996). Erciyes Üniversitesi Güneş Evi. *Yapı* (177), 43-45.

Alvesson, Mats, & Karreman, Dan. (2000). Varieties of Discourse: On the Study of Organizations through Discourse. *Human Relations*(53).

Anker, Peder. (2005). The Closed World of Ecological Architecture. *The Journal of Architecture 10*(5).

Anker, Peder. (2010). *From Bauhaus to Ecohouse: A History of Ecological Design*: Louisiana State University Press.

Ardıç, Nurullah. (2009). Friend or Foe? Globalization and Turkey at the Turn of the 21st Century. *Journal of Economic and Social Research 11*(1), 17-42.

Arsan, Zeynep Durmuş. (2003). *A Critical View of Sustainable Architecture in Turkey: Proposal for the Municipality of Seyrek.* İzmir İnstitute of Technology, İzmir.

Arsel, Murat. (2005). Reflexive Developmentalism? Toward and Environmental Critique of Modernization. In F. Adaman & M. Arsel (Eds.), *Environmentalism in Turkey: Between Democracy and Development?* . Burlington: Ashgate

Aydın, Zülküf. (2005). The State, Civil Society, and Environmentalism. In M. A. Fikret Adaman (Ed.), *Environmentalism in Turkey: Between Democracy and Development?* : Ashgate.

Ayşin Sev, Aydan Özgen. (2003). Yüksek Binalarda Sürdürülebilirlik ve Doğal Havalandırma. *Yapı*(262), 92-99.

Balaban, Osman. (2012). The negative effects of construction boom on urban planning and environment in Turkey: Unraveling the role of the public sector. *Habitat International*(36), 26-35.

Banham, Reyner. (1969). *Architecture of the Well-Tempered Environment*.

Bartu, A. , & Kolluoglu, B. (2008). Emerging Spaces of Neoliberalism: A Gated Town and a Public Housing Project in Istanbul. *New Perspectives on Turkey, 39*.

Basa, İnci. (2000). *Linguistic Discourse in Architecture.* (Doctor), METU, Ankara.

Basa, İnci. (2009). Environmental Discourse of Architecture. *International Journal of Environmntal Studies, 66*(2).

Bauer, Michael, Mösle, Peter, & Schwarz, Michael. (2010). *Green building : guidebook for sustainable architecture*. Heidelberg; New York: Springer.

Beaufoy, Helena. (1993). The Green Office in Britain: A Critical Analysis. *Journal of Design History, 6*(3), 199-207. doi: 10.2307/1316009

Berköz, Eşher, & Yılmaz, Zerrin. (1980). Enerji ve Tabii Kaynaklar Bakanlığı'nın Isıtma ve Buhar Tesislerinde Ekonomi Sağlanması ve Hava Kirliliğinin Azaltılması Yönetmeliği'nin Değerlendirilmesi. *Mimarlık* 19-21.

Bilgin, İhsan. (1982). Teknoloji Muhalefeti, Ekoloji ve Katılım. *Mimarlık*(10), 33-35.

Birkan, Güven. (1980). Yapılarda Enerji Kıtlığı Karşısında Ne Yapılabilir? *Mimarlık* (1), 16-18.

Birkan, Güven. (2010). Pazarlanan Yeni Kavramların Ardında Pazarlananlar: ACE'nin Sürdürülebilirlik Belgesinin Anımsattıkları. *Mimarlık*(353).

Bozdoğan, Sibel. (1997). The Predicament of Modernism in Turkish Architectural Culture. In S. Bozdoğan & R. Kasaba (Eds.), *Rethinking modernity and national identity in Turkey* Seattle : University of Washington Press.

Bozdoğan, Sibel, & Akcan, Esra. *Modern Architectures in History : Turkey : Modern Architectures in History*: Reaktion Books.

Braungart, William McDonough & Michael. (1998). The Next Industrial Revolution. *The Atlantic Monthly*, 82-92.

Bulca, Aydan. (1981). Çevre Sorunlarını Doğru mu Kavrıyoruz? *Mimarlık*(4), 9-13.

Burnett, John, Chau, C K, & Lee, W L. (2005). Green Buildings: How Green the Label? *HKIE Transactions, 12*(4), 1-8.

Canan, Fatih. (2003). Sürdürülebilir Bir Mimarlığa Doğru: ecoparc Projesi ve Neuchatel Federal İstatistik Bürosu Binası, İsviçre. *Yapı*(256).

Cengiz, Ulus. (2009). Kentsel Ölçekte Ekolojik Bir Model:Freiburg-Vauban. *Mimar.ist*.

Chasek, P.S., Downie, D.L., & Brown, J.W. (2010). *Global Environmental Politics: Fift*: Westview Press.

Ciravoğlu, Ayşen. (2008). Sürdürülebilir MimarlıkDüşüncesi Ne Kadar Sürdürülebilir? *Mimarlık* (340), 12.

Çakmanus, İbrahim. (2002). Pasif ve Düşük Enerjili Soğutma Sistemlerinin Uygulanabilirlik Ölçütleri. *Yapı 10*(251), 89-93.

Çakmanus, İbrahim. (2004). Bina yenilemelerinde Güneş Enerjisinin Kullanılması - Bazı Uluslararası Projelerden Elde edilen Sonuçlar ve Deneyimler. *Yapı* (268), 88-94.

Çakmanus, İbrahim, & Böke, Asa. (2001). Binaların Güneş Enerjisi ile Pasif ısıtılması ve Soğutulması. *Yapı 6*(235), 83-88.

Davidson, Kathryn M., Kellett, Jon, Wilson, Lou, & Pullen, Stephen. (2012). Assessing urban sustainability from a social democratic perspective: a thematic approach. *Local Environment, 17*(1), 57-73.

Dean, Penelope Jane. (2008). *Delivery without discipline: Architecture in the age of design.* (Ph.D. 3357361), University of California, Los Angeles, United States -- California.

Demirbilek, F. Nur, & Yılmaz, Zerrin. (1996). İklimle Dengeli Mimarlık. *Mimarlık* (269), 36-38.

Diaz-Bone, Rainer; , Bührmann, Andrea D.; , Gutiérrez Rodríguez, Encarnación; , Schneider, Werner; , Kendall, Gavin , & Tirado, Francisco. (2007). The Field of Foucaultian Discourse Analysis: Structures, Developments and Perspectives *Forum: Qualitative Social Research, 8*(2).

Dooyeweert, an interview with Patrick van. (2010). "Gordion ve Erzurum Alışveriş Merkezleri" *Yapıda Ekoloji: Ekolojik Mimarlık Kapsamında Çevre Dostu Binalar*(4), 36-44.

Dryzek, John S. (1997). *Politics of the Earth: Environmental Discourses* Oxford: Oxford University Press.

Durmuş Arsan, Zeynep. (2008). Türkiye'de Sürdürülebilir Mimari. *Mimarlık* (340), 21-30.

Edis, Ecem, & Türkeri, Nil. (2012). Durability of external thermal insulation composite systems in Istanbul Turkey. *ITU A|Z, 9*(1), 134-148.

Ekim, Derya. (2006). Sürdürülebilirlik Kavramı Sürdürülebilir mi? *Arredamento Mimarlık*(1), 122-127.

Ekinci, Oktay. (1994). Özgürlüğün Mimarcası : Sürdürülebilir Tasarım. *Mimarlık* (257), 25-27.

Erengezgin, Çelik. (2001). Enerji Mimarlığı. *Yapı 5*(234).

Erengezgin, Çelik (2003). Enerji ve Ekoloji – 1. *Yapı, 7*(260).

Erlalelitepe, İlknur, Ekmen, Kenan Evren, Turhan, Cihan, Akdemir, Manolya, Akkurt, Gülden Gökçen, & Kazanasmaz, Tuğçe. (2011). *Energy performance of residential buildings and their architectural configuration*. Paper presented at the World Renewable Energy Congress, Sweden.

Erten, Duygu. (2010). Ecobuild Konferansı ve BREEAM Sertifikası. *Yapı'da Ekoloji*(341-EK), 22-23.

Eryıldız, Demet Irklı. (2003). "Sürdürülebilirlik ve Mimarlık" dosyasında Ekolojik Mimarlık. *Arredamento Mimarlık*(154).

Eryıldız, Semih. (1996). Sürdürülebilirlik Tartışmalarına Sürdürülebilir Bir Giriş. *Mimarlık*(268), 24-25.

Eryıldız, Semih. (2003). Ekomimarlık Örnek Yapı ve Projeleri. *Arredamento Mimarlık, 1*(154), 86-91.

Esin, Tülay. (2006). Sürdürülebilir Yapılaşma için Uygun Malzeme Seçimi. *Yapı*(291), 83-86.

Fairclough, Norman. (1995). *Critical Discourse Analysis: the Critical Study of Language*. England: Pearson Education Limited.

Farmer, Graham, & Guy, Simon. (2010). Making morality: sustainable architecture and the pragmatic imagination. *Building Research & Information, 38*(4), 368-378.

Farmer, John. (1996). *Green shift: towards a green sensibility in architecture* (K. Richardson Ed.): Butterworth-Heinemann.

Feindt, Peter H., & Oels, Angela. (2005). Does discourse matter? Discourse analysis in environmental policy making. *Journal of Environmental Policy & Planning, 7*(3), 161-173.

Feng, Patrick, & Feenberg, Andrew. (2008). Thinking About Design: Critical Theory of Technology and the Design Process. In P. E. Vermaas, P. Kroes, A. Light & S. A. Moore (Eds.), *Philosophy and Design: From Engineering to Architecture*: Springer.

Fischer, Frank, & Hajer, Maarten A. (1999). Beyond Global Discourse: the Rediscovery of Culture in Environmental Politics. In F. F. a. M. A. Hajer (Ed.), *Living With Nature: Environmental Politics as Cultural Discourse* (pp. 1-20).

Fletcher, Robert. (2010). Neoliberal Environmentality: Towards a POststructuralist Political Ecology of Conservation Debate. *Conservation and Society, 8*(3), 171-181.

Foruzanmehr, Ahmadreza, & Vellinga, Marcel. (2011). Vernacular architecture: questions of comfort and practicability. *Building Research & Information, 39*(3), 274-285. doi: 10.1080/09613218.2011.562368

Foucault, Michel. (1971). Orders of Discourse. *SSI, 10*(2), 7-30.

Foucault, Michel. (1972). *Archeology of Knowledge* (A. M. S. Smith, Trans.). New York: Pantheon Books.

Göksal, Türkan. (1997). Mimarlıkta Güneş Enerjisi ve Fotovoltaik Modüller. *Arredamento Dekorasyon*(5), 92-96.

Göksu, Çetin. (1995). Güneş Enerjili Kentler. *Mimarlık* (266), 48-50.

Groat, Linda, & Wang, David. (2002). *Architectural Rsearch Methods*: John Wiley & Sons.

Guy, Simon. (2005). Cultures of architecture and sustainability. *Building Research & Information, 33*(3), 468-471.

Guy, Simon, & Farmer, Graham. (2001). Reinterpreting Sustainable Architecture: The Place of Technology. *Journal of Architectural Education, 54*(3), 140-148. doi: 10.1162/10464880152632451

Gündoğan, Handan. (2012). *Motivators and Barriers for Green Building Construction Market in Turkey.* (Master), MIDDLE EAST TECHNICAL UNIVERSITY, Ankara.

Hagan, Susannah. (2001). *Taking Shape: A New Contract Between Architecture and Nature*: Taylor & Francis.

Hajer, Maarten. (1995). *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process*: Clarendon Press.

Harris, Leila M., & Işlar, Mine. (2014). Neoliberalism, Nature and Changing Modalities of Environmental Governance in Contemporary Turkey. In Y. Atasoy (Ed.), *Global Economic Crisis and the Politics of Diversity*: Palgrave Macmillan.

Harvey, David. (1989). *The Condition of Postmodemity*. Oxford: Blackwell.

Hasol, Doğan. (1974). Petrol Bunalımı ve Yapılarımız *Yapı*(8).

Hasol, Doğan. (1994). Habitat II. *Yapı 155*(10).

Healy, Stephen. (2005). Toward a vocabulary for speaking of the engagement of things into discourse. *Journal of Environmental Policy & Planning, 7*(3), 239-256.

Hepbaşlı, Arif, & Özgener, Önder. (2004). Turkey's Renewable Energy Sources: Part 1. Historical Development. *Energy Sources, 26*(10), 961-969.

Hicks, David E. (2012). *Imaging and Imagining the Future: Rhetorical Visions of Environmental Discourse in "Gasland."* (Ph.D. 3508002), University of Colorado at Boulder, United States -- Colorado.

Huber, Joseph. (2000). Towards Industrial Ecology: Sustainable Development as a Concept of Ecological Modernization. *Journal of Environmental Policy & Planning, 2*(4), 269–285.

İçöz, Sinem. (2012). *Turkish Environmental Movements In The Accession To The European Union.* (Master), MARMARA ÜNİVERSİTESİ AVRUPA BİRLİĞİ ENSTİTÜSÜ.

İlhan Tekeli, Mehmet Altınsoy, Jale Erzen, Refet Erim, Engin Ural, Bozkurt Güvenç. (1984). "Söyleşi: Türkiye'de Çevre Bilinci" *Mimarlık*(7-8), 29-37.

İncedayı, Deniz. (2004). Çevresel Duyarlılık Bağlamında Davranış Biçimi Olarak "Sürdürülebilirlik. *Mimarlık*(318), 39-43.

Ingersoll, Richard. (1996). Second Nature: On the Social Bond of Ecology and Architecture. In L. H. M. Thomas A. Dutton (Ed.), *Reconstructing Architecture: Critical Discourses and Social Practices* (NED - New edition ed., Vol. 5, pp. 344): University of Minnesota Press.

Initiative, Global Reporting. (2011). Global Reporting Initiative (GRI) www.globalreporting.org.

İslam, Tolga. (2010). Current Urban Discourse: Urban transformation and Gentrification in İstanbul. *Architectural Design, 80*(1).

Işıkel, Korhan. (1994). Yeni Bir enerji Kaynağı: Isı İzolasyonu Yoluyla Hava Kirliliğinin Azaltılması. *3*(148), 43-45.

Ittelson, W.H., Proshansky, H.M., Rivlin, L.G., Winkel, G.H. . (1983). "Doğal Çevreye Tarihsel Yaklaşımlar" *Mimarlık*(5-6), 18-23.

İzci, Rana. (2005). The Impact of the European Union on Environmental Policy. In F. Adaman & M. Arsel (Eds.), *Environmentalism in Turkey*: Ashgate.

Jarzombek, Mark. (1999). Molecules, Money and Design: The Question of Sustainability's Role in Architectural Academe. *Tresholds*(18), 32-38.

Jarzombek, Mark. (2003). Sustainability, Architecture and "Nature": Between Fuzzy Systems and Wicked Problems. *Blueprints, 21*(1), 6-9.

Jian-guo, WU. (2012). Studies on Interdiscursivity. *Sino-US English Teaching 9*(7), 1312-1317.

Joberta, Thomas, & Karanfil, Fatih. (2007). Sectoral energy consumption by source and economic growth in Turkey. *Energy Policy* (35), 5447–5456.

Jones, Paul, & Card, Kenton. (2011). Constructing "Social Architecture": The Politics of Representing Practice. *Architectural Theory Review, 16*(3), 228-244.

Kalaycıoğlu, Ece. (2010). *Evaluation Of Building Energy Certification Systems In Italy And Turkey.* (Master), Istanbul Technical University, İstanbul.

Kaminer, Tahl. (2011). *Architecture, Crisis and Resuscitation: The Reproduction of Post-Fordism in Late-twentieth- Century Architecture*. London and New York: Routledge.

Karadag, Roy. (2010). Neoliberal Restructuring in Turkey: From State to Oligarchic Capitalism. *MPIfG Discussion Paper 10 /7*.

"Ken Yeang'ın Ekolojik Tasarım Yaklaşımı" (2008). *Yapı* (318), 112-118.

Kibert, Charles J. (2004). GREEN BUILDINGS: AN OVERVIEW OF PROGRESS. *Journal of Land Use & Environmental Law, 19*, 491.

Kibert, Charles J. (2008). Sustainable Construction - Green Building Design and Delivery (2nd Edition): John Wiley & Sons.

Killingsworth, M. Jimmie, & Palmer, Jacqueline S. (2012). *Ecospeak : Rhetoric and Environmental Politics in America*: Southern Illinois University Press.

Kirkman, Robert. (2002). *Skeptical environmentalism [electronic resource] : the limits of philosophy and science / Robert Kirkman*: Bloomington : Indiana University Press, c2002.

Knox, Paul L., & Taylor, Peter J. (2005). Toward a Geography of the Globalization of Architecture Office Networks. *Journal of Architectural Education, 58*(3), 23-32. doi: 10.1162/1046488053420942

Koçhan, Ahmet. (2003). Doğal Çevreyle Kurulan Anlamsal Bağ: Sürdürülebilir Toplu Konut Tasarımı. *Yapı* (256), 49-55.

Koçhan, Ahmet (2002). Sürdürülebilir Gelecek İçin Ekolojik Tasarım. *Yapı*(249), 45-53.

Korkmaz, Sinem, Erten, Duygu, & Syal, Matt. (2009). *A Review of Green Building Movement Timelines in Developed and Developing Countries to Build an International Adoption Framework* Paper presented at the Fifth International Conference on Construction in the 21st Century (CITC-V), Turkey.

Kurulu, TMMOB Mimarlar Odası Yönetim. (1996). Habitat I I Gündemine İlişkin Bir Değerlendirme. *Mimarlık*(269).

Külahçı, Mehmet, & Kazu, İbrahim Yaşar. (1994). BİNA KABUĞUNUN DOĞAL İKLİMLENDİRMEDEKİ ROLÜ. *Mimarlık*(257).

Latour, B. (1993). *We Have Never Been Modern*. Hemel Hempstead: Harvester Wheatsheaf.

LaVine, Lance. (2001). *Mechanics and Meaning in Architecture*: University of Minnesota Press.

Lombardi, D. Rachel, Porter, Libby, Barber, Austin, & Rogers, Chris D.F. (2010). Conceptualising Sustainability in UK Urban Regeneration: a Discursive Formation. *Urban Studies*. doi: 10.1177/0042098009360690

Macnaghten, P., & Urry, J. (1998). *Contested Natures*: SAGE Publications.

Madge, Pauline. (1993). Design, Ecology, Technology: A Historiographical Review. *Journal of Design History, 6*(3), 149-166.

Madge, Pauline. (1997). Ecological Design: A New Critique. *Design Issues, 13*(2), 44-54. doi: 10.2307/1511730

Mallgrave, Harry Francis, & Goodman, David. (2011). *An Introduction to Architectural Theory: 1968 to the Present*: Wiley-Balckwell.

Marrero, Carmelo Ruiz. (2011). The Limits to growth, yesterday and today. Retrieved 01.06, 2014, from http://alainet.org/active/68832&lang=es.

Marshall, Alan. (2002). *The unity of nature [electronic resource] : wholeness and disintegration in ecology and science / Alan Marshall*: London : Imperial College Press, c2002.

Martello, Marybeth Long, & Jasanoff, Sheila. (2004). *Earthly Politics : Local and Global in Environmental Governance*. Cambridge, Mass: MIT Press.

Maxman, Susan. (1993). *Declaration of Interdependence for a Sustainable Future.* Paper presented at the 18th World Congress of Architects

Mclennan, Jason F. (2004a). *The Philosophy of Sustainable Design*. Canada: Ecotone

McLennan, Jason F. (2004b). *The Philosophy of Sustainable Design: The Future of Architecture*: Ecotone.

Meadows, Donella H., Meadows, Dennis l., Randers, Jorgen, & Behrens, William W. (1972). *Limits to growth: a report for the Club of Rome's project on the predicament of mankind*. London: Potomac Associates.

Melchert, Luciana. (2007). The Dutch sustainable building policy: A model for developing countries? *Building and Environment, 42*(2), 893-901. doi: http://dx.doi.org/10.1016/j.buildenv.2005.10.007

Mendler, Sandra, Odell, William, & Lazarus, Mary Ann. (2006). HOK Guidebook to Sustainable Design (2nd Edition): John Wiley & Sons.

Mimarlık Onuncu yılını Doldurdu. (1973). *Mimarlık*(1), 55-65.

Mitcham, Carl. (1995). The Concept of Sustainable Development: its Origins and Ambivalence. *Technology In Society, 17*(3), 311-326.

Modern Mimarlık Hareketinin Mimarlık Yayınlarında Ele Alınışı ve Yayınların Uygulamaya Etkisi. (1985). *Mimarlık*(5-6), 35-38.

Moe, Kiel. (2007). Compelling Yet Unreliable Theories of Sustainability. *Journal of Architectural Education, 60*(4), 24–30.

Moltay, Can Arda. (2010). Yeşil Binalarda Fotovoltaik Panellerle Elektrik Üretimi Neden ve Nasıl Desteklenmelidir? *Arredamento Mimarlık*(11), 123-126.

Moorcoft, Colin. (1972). Designing for Survival. *Architectural Design*(7).

Nalbantoğlu, Gülsüm. (1982). Çevrenin Kavramlaştırılması ve Çevre Estetiği Üzerine Notlar. *Mimarlık*(4), 23-25.

Nesbitt, Kate. (1996). *Theorizing a new agenda for architecture: an anthology of architectural theory 1965-1995/ Ed.by K. Nesbitt*: New York: Princeton Architectural Pr., c1996.

News. (2009). *Yapı'da Ekoloji*.

Oktay, Derya. (2001). Kentsel Tasarimin Kuramsal Çerçevesine Güncel Bir Bakiş: Kentlerimiz, Yaşam Kalitesi Ve Sürdürülebilirlik. *Mimarlık*(302), 45-49.

Oktay, Derya. (2002). Kuzey Kıbrıs'ta Yöresel Mimarinin Geleneklerinden Çağdaş ve Duyarlı Çevrelere Sürdürülebilirlik Bağlamında Planlama ve Tasarım. *Mimarist*(3), 67-71.

Oktay, Derya. (2007). Sürdürülebilirlik, Yaşanabilirlik ve Kentsel Yaşam Kalitesi: Kavramdan Uygulamaya. *Mimarlık*(335).

Okutan, Mehmet. (2000). "Enerji Sorunu ve Yapılar " *Arredamento Mimarlık*(121), 112-117.

Osman Yılmaz, A., & Uslu, Tuncay. (2007). Energy policies of Turkey during the period 1923–2003. *Energy Policy, 35*(1), 258-264. doi: http://dx.doi.org/10.1016/j.enpol.2005.10.015

Owen, Ceridwen, & Dovey, Kim. (2008). Fields of Sustainable Architecture. *The Journal of Architecture, 13*(1), 9-21.

Özçuhadar, Tuna. (2007). Binalarda Yaşam Döngüsü. *Yapı* (312), 14-18.

Özdel, İlker. (1999). *Architectural Periodicals as a Reflective Medium of Agenda.* (Master), İzmir Institute of Technology.

Özdel, İlker. (2001). Türkiye'de Mimarlık Dergiciliği'nin 70 Yılı: Mesleki Örgütlenme Ortamı Olarak Mimarlık Dergileri *Mimarlık*(300), 29-33.

Özgen, Aydan, & Eşsiz, Özlem. (2001). Sürdürülebilir Mimarlık ve İleri Teknoloji İlişkisi: Eco-Tech. *Yapı*(234), 44-54.

Öztürkcan, Nahit, & Tunçel, Abdullah Mimarlık (1977). Ankara'da Hava Kirlenmesi. *Mimarlık*(3), 60-66.

Papanek, Victor. (1997). *Design for the Real World: Human Ecology and Social Change* (2. ed.). London: Thames and Hudson.

Pellizzoni, Luigi. (2011). Governing through disorder: Neoliberal environmental governance and social theory. *Global Environmental Change*(21), 795–803.

Pepper, David. (1996). *Modern Environmentalism: an Introduction* London and New York: Routledge.

Philips, Louise, & Jorgensen, Marianne. (2002). *DİscourseAnalysis: as Theory and Method*. London: Sage.

Plessis, Chrisna Du. (2007). A strategic framework for sustainable construction in developing countries. *Construction Management and Economics, 25*(1), 67-76.

Ramachandran, A. . (1990). Yapı Teknolojisinin Çevre Üzerine Etkileri. (109).

Redclift, Michael. (2005). Sustainable Development (1987–2005): An Oxymoron Comes of Age. *Sustainable Development*(13), 212–227.

Resources, Ministry of Energy and Natural. (2009). REPORT: Transition To Efficient Public Lighting.

Said, Hisham, & Berger, Lidia. (2012). Future Trends of Sustainability Design and Analysis in Construction Industry and Academia. *Practice Periodical on Structural Design and Construction.*

Schumacher, E. F. (1991). The Problem of Production. In A. Dobson (Ed.), *The Green reader: essays toward a sustainable society*: Mercury House.

Sergio, Altomonte. (2011). Dikkatli Taşıyıız. Sürdürülebilirliğin Zorlukları ve Mimari Eğitimin Gündemi. *Mimar.ist* (3).

Sev, Ayşin. (2009). *Sürdürülebilir Mimarlık*. İstanbul: YEM Yayın.

Sitarz, Daniel (Ed.). (1994). *Agenda 21: The Earth Summit Strategy to Save Our Planet*. Boulder: EarthPress.

Söyleşi: 1963'ten Bu Yana Mimarlık. (1984). *Mimarlık*(2), 18-33.

Sur, an interview with Haluk. (2010). Yeşil Yenileme, Yapı Sektörünü Canlandıracak. *Yapı'da Ekoloji* (341-EK), 24-27.

Tanyeli, Uğur. (1994). Umutsuzluk Çağının Sahte İdeolojisi ya da 'SÜrdürülebilir' Mimarlık. *Mimarlık*(260), 15-16.

Tanyeli, Uğur. (1998). 1990'lar Türkiye'sinde Mimari- Entellektüel Ortam. *Mimarlık*(280), 41-46.

Tanyeli, Uğur. (2001). Mimarlık'ın 300. Sayısı ve Sektörün Tarihi Bağlamında Bugün: Türkiye'de Mimarlık Dergiciliği. *Mimarlık*(300), 34-36.

Taylor, William M., & Levine, Michael P. (2011). *Prospects for an Ethics of Architecture*. London and New York: Routledge.

Tekeli, İLhan. (1995). Habitat II'nin Gündemini Oluşturan Temel Kavramların İrdelenmesi. *Mimarlık*(262), 11-14.

Teymur, Necdet. (1982). *Environmental Discourse: A Critical Analysis of 'Environmentalism' in Architecture, Planning, Design, Ecology, Social Sciences and the Media*. London: ?uestion Press.

Tuğal, Mehmet , & Kazu, İbrahim Yaşar. (1993). Bina Kabuğunun Doğal iklimlendirmedeki Rolü. *Yapı 11*(144), 69-75.

Turk, Sevkiye Sence, & Altes, Willem K. Korthals. (2010). Institutional capacities in the land development for housing on greenfield sites in Istanbul. *Habitat International*(34), 183–195.

Van der Ryn, Sim, & Cowan, Stuart. (1996). *Ecological Design*. Washington: Island Press.

Wiley, Jonathan A., Benefield, Justin D., & Johnson, Ken H. (2010). Green Design and the Market for Commercial Office Space. *J Real Estate Finan Econ* (41), 228–243.

Williamson, Terry, Radford, Antony, & Bennetts, Helen. (2003). *Understandign Sustainable Architecture*. London and New York: Spon Press.

Wodak, Ruth. (2002). The Discourse-Historical Approach *Methods of Critical Discourse Analysis*. London, GBR: SAGE Publications, Incorporated.

Wong, Tai-Chee, & Yuen, Belinda. (2011). *Eco-city planning [electronic resource] : policies, practice and design / Tai-Chee Wong, Belinda Yuen, editors*: New York : Springer, 2011.

World Commission on, Environment, & Development. (1987). *Our common future*. Oxford; New York: Oxford University Press.

Yayıncılar Tartışıyor. (1992). *Mimarlık*(250), 23-36.

Yener, Cengiz, & Demirbilek, Nur. (1981). "Güneşle Edilgen Isıtmada Ölçülendirme." *Mimarlık* (1), 20-21.

Yılmaz, Zerrin. (1989). Hazır Cephe Elemanlarının Boyutlarının İklimsel Konfor ve Enerji Tasarrufuna Etkisi *Yapı* (87), 44-46.

Yücel, Şebnem. (2007). Identity Calling: Turkish Architectur and the West. In G. Caicco (Ed.), *Architecture, ethics, and the Personhood of Place*. Hanover and London: University Press of New England.

Zeren, Lütfi. (1965). Sınıfların Yönlendirilmesi ve Sınıflarda Güneş Kontrolü *Mimarlık* (5), 10-13.

APPENDIX A

LIST OF THE ARTICLES REVIEWED FROM THE CHOSEN TURKISH ARCHITECTURAL PERIODICALS

MİMARLIK 1963-2012

1970/3	**"Şehrimizdeki Hava Kirlenmesi Olayı ve Ankara".** Remin Biler. Mimarlık 1970/3, 11-13
1972/8 FORUM	**"Geniş Kapsamlı Çevre Düzenlemesi İçin Bir Ekolojik Yöntem."** McHarg, Ian.Çev: Evyapan Aslanoğlu,Gönül. Mimarlık 1972-8/Ağustos, 37-38.
1972/10 FORUM	**"PAOLO SOLERİ Görüntüsel Kentler Üzerine Düşünceler."** Özkan, Süha. Mimarlık 1972-10/Ekim, 50-52.
1973/3 FORUM	**"Stokholm Çevre Sorunları Konferansı ve Gelişmekte Olan Ülkeler."** Ozorio de Almeida, Miguel. Çev:Damlalı, A. Mimarlık 1973-3/Mart, 22-25.
1973/5	**"Çevre Sorunları İle İlgili Uluslararası Politika Önerileri Ve Geri Kalmış Ülkelerin Kalkınmasına Olabilecek Etkileri."** Tekeli, İlhan. Mimarlık 1973-5, 12-17.
1976/2	**"Sıfır Enerji Konutu."** Çev: Aral, Nejat. Mimarlık 1976-2, 18.
1977/3	**"Ankara'da Hava Kirlenmesi."** Öztürkcan, Nahit. Tunçel, Abdullah Mimarlık 1977/3, 60-66.
1977/3	**"Ankara'da Yeşil Alan Sorunu."** Öztürkcan, Nahit. Tunçel, Abdullah Mimarlık 1977/3, 67-74.
1979/1	**"Tarihsel yerleşimlerin Canlılığı: Kır ve Kent Arası Dengenin Bileşke ve Ürünü ."** Çev. Ertekin, Haldun. Mimarlık 1979/1, 14.
1979/2 YAYINLAR	**"Yaşanılır Şehirler."** (Yayınlar) Ertekin, Haldun. Mimarlık 1979-2, 12-14.
	"Energy Crisis." Mimarlık 1980-1.
	"Sunuş: Enerji Sorunu, Teknolojik Hegamonya ve Toplumsal Boyutlar." Mimarlık 1980-1, 14-15.
	"Yapılardaki Enerji Kıtlığı Karşısında Ne Yapılabilir? " Birkan,Güven. Mimarlık 1980-1, 16-18.
1980/1	**"Enerji ve Tabii Kaynaklar Bakanlığı'nın Isıtma ve Buhar Tesislerinde Ekonomi Sağlanması ve Hava Kirliliğinin Azaltılması Yönetmeliği'nin Değerlendirilmesi."** Berköz, Eşher. Yılmaz,Zerrin. Mimarlık 1980-1, 19-21.
1981/1	**"Güneşle Edilgen Isıtmada Ölçülendirme."** Yener, Cengiz. Demirbilek, Nur. Mimarlık 1981-1, 20-21.

1981/2	**"Çukurova'da Endüstrileşme ve Yarattığı Çevre Sorunları."** Altan,Türker. Mimarlık 1981-2, 13-16.
1981/4 SÖYLEŞİ	**"Çevre Sorunlarını Doğru Mu Kavrıyoruz? Aydan Bulca İle Bir Söyleşi."** Günday, Turgay. Mimarlık 1981-4, 9-13.
1982/7	**"Çevrenin Kavramlaştırılması ve Çevre Estetiği Üzerine Notlar."** Nalbantoğlu, Gülsüm. Mimarlık 1982-7, 23-25.
1982/10	**"Teknoloji Muhalafeti, Ekoloji ve Katılım."** Bilgin, İhsan. Mimarlık 1982-10, 33-35.
1983/2	**"Resmi Daire Yapılarında Enerji tutumluluğu İçin Proje Aşamasında Alınabilecek Önlemler ."** Elagöz, Ayşe. Mimarlık 1983/2, 31.
1983/5-6 DÜNYA ÇEVRE GÜNÜ	**"Doğal Çevreye Tarihsel Yaklaşımlar."** Ittelson/Prohansky/Rivlin/Winkel, Çev. Ve Der. Yeğenoğlu, Ufuk. Güzer C.Abdi. Mimarlık 1983/5-6, 18-23. **"Yayın Tanıtma: Çevre Araştırmaları İçin Bir Bakış Açısı: Çevre Söylemi."** Teymur, Necdet. Tanıtan: Nalbantoğlu, Gülsüm. Mimarlık 1983/5-6, 28-30.
1983/11-12	**"Ankara'da Hava Kirliliğinin Azaltılması İçin Bir Seçenek: Kentsel Yaşil Alanlar."** Atalay, Ata. Mimarlık 1983/11-12, 32-33.
	"Söyleşi: Türkiye'de Çevre Bilinci." Yöneten: Tekeli, İlhan. Mimarlık 1984/7-8, 29-37.
	"Gökova , Enerji Darboğazının Aşılacağı Yer Midir?" Erim, Refet. Mimarlık 1984/7-8, 38-39.
	"Uygulamaya Geçerken Çevre Yasası." Berktay, Fatmagül. Mimarlık 1984/7-8, 40-41.
1984/7-8 DÜNYA ÇEVRE GÜNÜ	**"Doğa Kavramının İdealist Yorumu."** Ebskamp, Heinrich. Çev. Bilgin, İhsan.Kavukçu Nazan. Mimarlık 1984/7-8, 42-45.
1988/4 EDİTORYAL	**"Mimarlıktan"** Özbay, Aslı. Mimarlık 1988/4, 20.
1988/4 RAPOR	**"'Özel çevre koruma Bölgeleri' Kararına İlişkin Mimarlar Odası Görüşleri ."** Mimarlık 1988/4, 31-38.
1990/3 İNCELEME-ARAŞTIRMA	**"Kentsel Açık / Yeşil Alan Donanımının Niceliksel Değerlendirilmesine Yönelik Bir Model Önerisi: Yeşil Kütle ve Ekolojik Denge."** Ergin, Şenel. Mimarlık 1990/3, ?-?.
1992/2	**"Çevre Kirlenmesinin Üçüncü Boyutu: Görsel Kirlenme ."** Kumbaracıbaşı, Can. Mimarlık 1992/2, 53-55
1992/4	**"Ankara kenti Yeşil Alanlarının Kullanım Etkinliklerinin Bugünkü Durumu ve Artırılması Konusunda Öneriler ."** Türel, Güzin. Mimarlık 1992/4, 18-20
1993/253 ODA'DAN ÖZEL	**"Sürdürülebilir Bir Gelecek İçin Bağımlılık Bildirisi."** Mimarlık 1993/253, 17. **"UIA Kongresi Üzerine Yorumlar-Değerlendirmeler."** Der: Özbay,Aslı. Mimarlık 1993/253, 18-19.
1993/254	**"Kentsel Çevrenin Şekillenmesinde Alternatif Bir Yaklaşım: Yeşil Mimari."** Bütüner, Hüseyin. Mimarlık 1993/254, 32-34.

1994/257	**"Özgürlüğün Mimarcası : Sürdürülebilir Tasarım."** Ekinci, Oktay. Mimarlık 1994/257, 25-27.
1994/257 İNCELEME ARAŞTIRMA	**"Bina Kabuğunun Doğal İklimlendirmedeki Rolü ."** Külahçı, Mehmet. Kazu, İbrahim Yaşar. Mimarlık 1994/257, 39-40.
1994/260	**"Umutsuzluk Çağının Sahte İdeolojisi ya da Sürdürülebilir Mimarlık."** Tanyeli, Uğur. Mimarlık 1994/260, 15-16.
1995/261	**"Geleceğin Konutu ve Ekolojik Mimari."** Çimen, Bayar. Mimarlık 1995/261, 38-41.
1995/262 HABITAT	**"Habitat II'nin Gündemini Oluşturan Temel Kavramların İrdelenmesi."** Tekeli, İlhan. Mimarlık 1995/262, 11-14.
1995/266	**"Güneş Enerjili Kentler."** Göksu, Çetin. Mimarlık 1995/266, 48-50.
1996/268	**"Yüzyılın Son Zirvesi Yaklaşırken: Habitat II Konferansı Üzerine."** Boz, Süleyman. Mimarlık 1996/268, 10.
1996/268 EKOLOJİ	**"Hollanda'da Çevre Duyarlı ve Enerji Sakınımlı Konut Alanı Tasarımı."** Aksoylu, Sevin. Mimarlık 1996/268, 19-23.
1996/268	**"Sürdürülebilirlik Tartışmalarına Sürdürülebilir Bir Giriş."** Eryıldız, Semih. Mimarlık 1996/268, 24-25.
1996/269 DOSYA ÇEVRECİ MİMARLIK VE PLANLAMA	**"Dosya: Çevreci Mimarlık ve Planlama"** Mimarlık 1996/269
	"Kentsel Ekoloji." Eryıldız, Semih. Mimarlık 1996/269, 25-30.
	"Çevre Duyarlı Kentleşme Politikaları." Hafızoğulları, Gül. Mimarlık 1996/269, 31-32.
	"Sürdürülebilir Bir Geleceğe Mimarın Katkısı." Irklı, Demet. Mimarlık 1996/269, 33-35.
	"İklimle Dengeli Mimarlık." Demirbilek, F. Nur. Yılmaz, Zerrin. Mimarlık 1996/269, 36-38.
	"İç Mekanlarda Yapı Malzemelerine Bağlı Hava Kirliliği." Duygulu, İhsan. Mimarlık 1996/269, 39-41.
	"Mimarlık Eğitimi ve Enerji." Haz: Demirbilek, Nur F. Yılmaz, Zerrin. Mimarlık 1996/269, 42-44.
1998/281 DÜNYA ÇEVRE GÜNÜ	**"Çevrenin Küresel Düşmanı: MAI."** Ekinci, Oktay. Mimarlık 1998/281, 7.
1999/287 OLAĞANÜSTÜ GENEL KURUL	**"20. Yüzyılın Son Dünya Çevre Günü'nde Karadeniz "Kara Günülerde.... TMMOB Mimarlar Odası, Dünya Çevre Günü 1999 Bildirgesi"** TMMOB Mimarlar Odası, Merkez Yönetim Kurulu**,** Mimarlık 1999/287, 3.
	"2000'li Yıllara Doğru Türkiye Mimarlığında Ulusal Kararlar "İnsana, çevreye ve mimarlığa saygılı bir mimarlık için...""" Mimarlık 1999/287, 9.
1999/290	**"Barajlar, Çevre ve Ilısu Barajı"** Avcı, İlhan. Mimarlık 1999/290, 35-38.
2000/291 DOSYA EKOBAŞKALAŞ	**"Dosya: Ekobaşkalaşım (Ecometamorphosis)** **Önsöz: Kent ve Kır'a İlişkin Ekolojik Söylemler."** Sargın, Arif Güven. Mimarlık 2000/291, 7.

IM	**“Derin Çevrebilim’e Karşı Toplumsal Çevrebilim : Çevrebilim Hareketine Karşı Bir Meydan Okuma."** Bookchin, Murray. Çev: Aktüre, Zeynep. Mimarlık 2000/291, 9-14.
	“Ütopyo Kent ve Doğa; Frank Lloyd Wright ve Broadacre." Zelef, Haluk. Mimarlık 2000/291, 15-18.
	“Atatürk Orman Çiftliği; Kent ve Kır İçin Bir Uzlaşma Modeli." Akyürek, Göksun. Mimarlık 2000/291, 19-22.
	“Kentsel Mekan Olarak Doğa: Karekök -1." Batuman, Bülent. Akış, Tonguç. Mimarlık 2000/291, 23-25.
2001/302	**“Kentsel Tasarımın Kuramsal Çerçevesine Güncel Bir Bakış: Kentlerimiz,Yaşam Kalitesi ve Sürdürülebilirlik."** Oktay, Derya. Mimarlık 2001/302, 45-49.
2002/307	**“Sürdürlebilir Kalkınma İçin Mimarlık ve Politikanın Rolü Üzerine”** Schröder, Gerhard. Çev.Çimen, Bayar. Mimarlık 2002/307, 36-37.
2004 /318 SÜRDÜRÜLEBİLİRLİK	**"Çevresel Duyarlılık Bağlamında Davranış Biçimi Olarak "Sürdürülebilirlik"."** İncedayı, Deniz**.** Mimarlık 2004/318, 39-43.
2005/326 GÜNDEM	**“Daha Kaliteli Bir Yaşam Çevresi için Mimarlık Politikası: Süreçler, Aktörler, Tartışmalar ve Türkiye.”** Tağmat, Tuğçe Selin. Mimarlık 2005/326,
2006/329 YAPI TEKNOLOJİSİ	**“Alternatif Sürdürülebilir Konut Uygulamaları ve Türkiye’deki Betonarme Konut Sektörü.”** Koman, İlkay. Eren, Özlem. Mimarlılk 2006/329,
2006/331 YASAL DÜZENLEMELER	**"Kıyı Kanunu Değişiyor: ‘Koruma ‘, ‘Kamu Yararı’, ‘Meşruiyet’ Kavramlarına Yeni Yorumlar"** Madran, Emre. Mimarlık 2006/331
2007/334 ÇEVRE KENT MİMARLIK	**"Kent Estetiği: Türkiye Estetetik Kongresi’nde ‘Çevre, Kent ve Mimarlık’ Üzerine ."** Erzen, Jale. Mimarlık 2007/334.
2007 /335 DOSYA KENTSEL YAŞAM KALİTESİ	**"Sürdürülebilirlik, Yaşanabilirlik ve Kentsel Yaşam Kalitesi: Kavramdan Uygulamaya."** Oktay, Derya**.** Mimarlık 2007/335, 37-40.
2007/336 - MİMARLIK POLİTİKALARI	**Giriş Yazısı**. Cengizkan, N. Müge. Mimarlık 2007/336
	"Yapı Kültürü ve Sürdürülebilir Kentsel Gelişim: Avrupa Mimarlık Politikası Forumu Hamburg Toplantısından Notlar." Tağmat, Tuğçe Selin**.** Mimarlık 2007/336, 17-19.
	"Avrupadan Örnek Projeler: Kentlerin Büyümesinde İtici Bir Güç Olarak Yapı Kültürü." Tağmat, Tuğçe Selin**.** Mimarlık 2007/336, 20-22.
2008/339 MİMARLIK POLİTİKALARI	**“Toplumsal Uyum için Bir Çevre İnşa Etmek: Avrupa Mimarlık Politikaları Forumu’nda Bölgesel Politikalar ve Mimarlık.”** Tağmat, Tuğçe Selin**.** Mimarlık 2008/339
2008/340 DOSYA "SÜRDÜRÜLEBİLİR MİMARLIK	**Giriş Yazısı**. Cengizkan, N. Müge. Mimarlık 2008/340
	"SürdürülebilirMimarlıkDüşüncesi Ne Kadar Sürdürülebilir?." Ciravoğlu, Ayşen. Mimarlık 2008/340, 12.
	"Sürdürülebilir Mimarlık: Eskimiş Kavrayışlarla Yeni SöylemlerArasında." Ciravoğlu, Ayşen. Mimarlık 2008/340, 13-16.
	"Tasarım, Para ve Moleküller: Mimarlık Akademyasında Sürdürülebilirliğin Rolü Sorunu." Jarzombek, Mark. (çev. Kılınç, Kıvanç) Mimarlık 2008/340, 17-20.

DÜŞÜNCESİ NE KADAR SÜRDÜRÜLEBİLİR?"	**"Türkiye'de Sürdürülebilir Mimari."** Durmuş Arsan, Zeynep. Mimarlık 2008/340, 21-30.
	"II. Dünya Savaşı Sonrası Sistemci Ekoloji ve 1960'lardan İtibaren Mimarlıkta Çevre Bilinçli Yaklaşımlar ." Yazgan, Begüm. Mimarlık 2008/340, 31-37.
2008/342 MİMARLIK'TAN	**Giriş Yazısı**. Cengizkan, N. Müge. Mimarlık 2008/342
2008/343 MİMARLIK POLİTİKALARI	**"Avrupa Mimarlık Politikaları Forumu Slovenya'da Gerçekleştirildi : İklim Değiişimine Yönelik Politikalarda Minarlık."** Tağmat, Tuğçe Selin. Mimarlık 2008/343, 67-70.
2009/345 MİMARLIK POLİTİKALARI	**"Avrupa Mimarlık Politikaları Forumu Bordo'da Toplandı: Dayanıklı, Sürdürülebilir ve İlgi Uyandırıcı Bir Mimarlığa Doğru..."** Tağmat, Tuğçe Selin. Mimarlık 2009/345, 62-63.
	"Enerji Duyarlı Mimarlık , Binalarda Enerji Verimliliği Paneli: 2017'ye Kadar Her Bina için "Enerji Kimlik Belgesi" Oluşturuluyor." Tuna, Rüksan. 2009/347
2009/347 ETKİNLİK	**"Enerji ve Çevre Duyarlı Bir Mimarlık Üretimi: Baumschlager-Eberle Mimarlık Ofisi."** Tuna, Rüksan. 2009/347
2009/347 DOSYA 'TASARIMA KAPSAYICI YAKLAŞIM:HER KES İÇİN TASARIM'	**"Yaşlanan Bir Toplumda Sürdürülebilirlik:'Evrensel Tasarım' Paradigmasının Bir Alt Kullanıcı Grubunda İrdelenmesi."** Taneli, Yavuz. Mimarlık 2009/347.
2009/348 ÇEVRE DUYARLI MİMARLIK	**"Yapısal Atıkların Önlenmesinde / Azaltılmasında Tasarımcının Rolü."** Coşgun, Nilay. Güler, Tuğba. Doğan, Belgin. 2009/348
2009/350 DOSYA SIFIRDAN BAŞLAMAK	**"Sıfırdan Başlamak: İdea(l) Yerleşimler"** Ciravoğlu, Ayşen. Mimarlık 2009/350
2010/352 ÇEVRE DUYARLI MİMARLIK	**"Güneş Dekatlonu: Türkiye için aydınlatıcı bir model."** Doğaner, Sedef - Toker, Saadet. Mimarlık 2010/352, 66-70.
	"Enerji Performansı Yönetmeliği Neler Getiriyor." Röportaj. Tuna, Bülend. Mimarlık 2010/352, 71-73.
2010/353 ÇEVRE DUYARLI MİMARLIK-KIRSAL YERLEŞİMLER	**"Pazarlanan Yeni Kavramların Ardında Pazarlananlar: ACE'nin Sürdürülebilirlik Belgesinin Anımsattıkları"** Birkan, Güven. Mimarlık 2010/353
	"ILISU BARAJI: Sürdürülebilir Toplumsal Hayata "Ket Vurma" ve Su Toplama Havzasında Sivil (Kırsal) Mimari Yerleşimlerin Serencamı (1)" Sami, Kamuran. Mimarlık 2010/353
2010/354 ÇEVRE DUYARLI MİMARLIK-MİMARLIK POLİTİKALARI	**"Sürdürülebilir ve Ekolojik Yapı Elde Etmede Ahşap Kullanımı"** Somer, Elif M. Mimarlık 2010/354
	"Avrupa Mimarlık Politikaları Forumu Madrid'de Toplandı: Sürdürülebilirlik ve Bütüncül Kentsel Dönüşüm" Tağmat, Tuşçe Selin. Mimarlık 2010/354
2010/355 ÇEVRE DUYARLI MİMARLIK	**"Bilgisayar Destekli Enerji Etkin Bina Tasarımı"** Yüceer, Sultan Nilgün. Mimarlık 2010/355
2011/357 MİMARLIK GÜNDEM - ÇEVRE DUYARLI MİMARLIK	**"Güncel Yasa Tasarılarında Doğa Koruma"** Ciravoğlu, Ayşen. Mimarlık 2011/357
	"Avrupa Yeşil Çatı Dernekleri Federasyonu Başkanı Dusty Gedge ile Söyleşi" Tuna, Rüksan. 2011/357
2011/358 ÇEVRE DUYARLI MİMARLIK	**"Eko-Teknolojilerin Sürdürülebilir Mimarinin Biçimlenişindeki Rolü"** Yazıcıoğlu, Deniz Ayşe. 2011/358

	"ACE 20. Yıl Sergisi: Avrupa'da Sürdürülebilir Mimarlık!" Der. Tağmat, Tuğçe Selin. 2011/359
2011/359 ÇEVRE DUYARLI MİMARLIK-MİMARLIKGÜNDEM	"**Yaratıcılık Parkı"** Tuna, Rüksan. 2011/359
	"Nükleer Santraller Enerji Üretiminde Çözüm Olabilir mi?" Uyar, Tanay Sıdkı. 2011/359
2011/360 ÇEVRE DUYARLI MİMARLIK	**"Mimari Tasarımda İklimÇözümleme: İstanbul Üzerine Bir Deneme"** Yüceer, Sultan Nilgün. 2011/360
2011/361 ÇEVRE DUYARLI MİMARLIK	**"Türkiye'de "Binalarda Enerji Performans Yönetmeliği" Süreci ve Hesaplama Yöntemi"** Ertuğrul, İlker. Yöntem Temizer, Seda. 2011/361
2011/362 ÇEVRE DUYARLI MİMARLIK	**"Yapı Ürünlerinin Yaşam Döngüsü Değerlendirmesi"** Taygun Tuna, Gökçe. 2011/362
2012/366 ÇEVRE DUYARLI MİMARLIK	**"Yeşil Konaklama"** Tuna, Rüksan. 2012/366
2012/367 ÇEVRE DUYARLI MİMARLIK	**"Avrupa yeşil Başkent ünvanı Üzerine"** Yalçıner, Özge. 2012/367
2012/367 ÇEVRE DUYARLI MİMARLIK	**"Ekolojik Mimarlık: Doğu Karadeniz Kırsal Konutu"** Zorlu, Tülay. Faiz, Serap. 2012/367
2012/368 GÜNDEM	**"Anayasa'da Kent ve Çevre Hakları"** Keleş, Ruşen. 2012/368
2012/368 ÇEVRE DUYARLI MİMARLIK	**"Sürdürülebilir Okul Örneklerine Bir Bakış"** Gökmen Sivri, Hikmet. 2012/368

YAPI : 1973-2012

1973	**"Petrol Bunalımı ve Yapılarımız"** Hasol, Doğan. Yapı (8) 1974, 30-31.
8 / 1974	**"Gelecek Kaygısı"** Yenal, Engin. Yapı (8) 1974, 25-29.
26-27/ 1977 DOSYA	**"Çevre Olgusu ve Çevre Düzenleme"** Çubuk, Mehmet – Karabey,Haydar – Seymen,Ülker. Yapı (26-27) 1977, 25-27. **"Çevre Sorunlarının Ülkemiz Açısından İrdelenmesi ve Bilimin Görevi"** Karabey, Haydar. Yapı (26-27) 1977, 28-31.
26-27/ 1977	**"İnsan, Çevre ve 'Endüstri Tasarımı Olgusu'nun Geleceği"** Küçükerman, Önder. Yapı (26-27) 1977, 58-71.
26-27/ 1977	**"Kişi Yaşamında Fiziksel Çevre Korumasının Önemi"** Çeçenler, Besim. Yapı (26-27) 1977, 72-78.
26-27/ 1977	**"Çevrebilim ve İnsanın Geleceği"** Muchnik, Nicole. Çev.Onaran, Bertan. Yapı (26-27) 1977, 79-83.
29 / 1978	**"Nükleer Enerji ve Ötesi"** De Rougemont, Denis. Çev.Onaran, Bertan. Yapı (29) 1978, 28-29.
62 / 1985	**"Deniz Kirliliğinin Önlenmesinde Pratik Bir Çözüm"** Ernst, Hülya. Yapı (62) 1985, 43-44.
79 / HAZİRAN1988	**"Sağlıklı Yaşam-Sağlıklı Yapı-Yapı Biyolojisi"** Uyar, Handan. Yapı (79) 6.1988, 39.
87 / ŞUBAT 1989	**"Hazır Cephe Elemanlarının Boyutlarının İklimsel Konfor ve Enerji Tasarrufuna Etkisi"** Yılmaz, Zerrin . Yapı (87) 2.1989, 44-46.
88 / 1989	**"İnsanoğlunun Ayakta Kalabilmesi İçin Tek Seçenek Çeşitliliktir"** Nouvel Observateur 1988. Çev.Onaran, Bertan. Yapı (88) 1989, 33-35.
102 / 1990	**"Hava Kirliliği"** Okutan, Celal. Yapı (102) 1990, 67-69.
109/ ARALIK 1990	**"Yapı Teknolojisinin Çevre Üzerine Etkileri**" Ramachandran, A. Dr. Çev: Gürpınar, Nural. Yapı (109) 12.1990, 35-40.
110/ OCAK 1991	**"Bir Ekolojik Kent Yaratma Çabaları**" Oktay, Derya Dr. , Çakmaklı, Tuncer. Yapı (110) 1.1991, 42-45.
119 / EKİM 1991	**"Çevre Duyarlılığı İçin Halk Eğitimi Bildirgesi"** . Yapı (119) 10.1991, 24-25.
122 / OCAK 1992	**"Çevre Yolu Mu, Çevre Cinayeti Mi?"** Yapı (122) 1.1992, 18-21.
126/ MAYIS 1992	**"Yeşil Şehircilik ve Kent Ağaçları**" ?. Yapı (126) 5.1992, 40-45.
128/ TEMMUZ 1992	**"Dünya Çevre Gününün Ardından Umutlar ve Kaygılar**" Ekinci, Oktay Yapı (128) 7.1992, 35-36.
139/ HAZİRAN 1993	**"Enerji Korunumuna İngiltere'den Bir Örnek:Değişken Kabuklu Cornwall Evi**" Architectural review. Çev: Önal Şebnem. Yapı (139) 6.1993, 40-45.
141 / AĞUSTOS 1993 BASINDAN	**"Dünya Çevre Günü ve Kentkırım"** Keleş, Ruşen.(1 Temmuz 1993, Cumhuriyet). Yapı (141) 8.1993, 22-23.

144/ KASIM 1993	**"Bina Kabuğunun Doğal iklimlendirmedeki Rolü**" Tuğal, Mehmet Dr., Kazu, İbrahim Yaşar.. Yapı (144) 11.1993, 69-75.
146/ OCAK 1994	**"Yapı Biyolojisi: İnsan, Yapı ve Çevre**" Ersoy,Halit Yaşa Dr. Yapı (146) 1.1994, 56-60.
148/ MART 1994	**"Yeni Bir enerji Kaynağı: Isı İzolasyonu Yoluyla Hava Kirliliğinin Azaltılması"** Işıkel, Korhan. Yapı (148) 3.1994, 43-45.
151/ HAZİRAN 1994	**"Çok Laf Az İşle Katedilen Arpa Boyu Yol: Çevre politikaları"** Birkan, Çelen. Yapı (151) 6.1994, 28-29..
155 / EKİM 1994	**"Habitat II"** Hasol, Doğan. Yapı (155) 10.1994, 43-44.
	"Rüzgar Esmezse Yine Yandık" Türenç, Tufan.(12 Kasım 1994, Hürriyet) Yapı (157) 12.1994, 36.
157 / ARALIK 1994	**"Çevreyi Korumak Zorundayız"** Yapı (157) 12.1994, 50-51.
	"Yapı Biyolojisi Kavramına Çevresistemden Yaklaşım" Balanlı, Ayşe. Öztürk, Ayşe. Yapı (159) 2.1995, 37-39.
159 / ŞUBAT 1995	**"İnsanın Uyum-Yaratma İkilemi ve Mimaride Eski-Yeni Tartışması"** Şentüre, Ayşe. Yapı (159) 2.1995, 40-47.
	"Çevre Korumada Yerel Bir Örnek: Mogan ve eymir Gölleri 1.Çevre Kurultayı"Aydoğmuş, Serpil. Yapı (160) 3.1995, 26.
160 / MART 1995	**"Ekolojiye Yöneltilmiş Bütünleştirilmiş Planlama Metodolojisi: Polonya Örneği"**Aksoylu, Sevin. Yapı (160) 3.1995, 44-47.
163 / HAZİRAN 1995	**"Yapı Biyolojisi, Ekolojik Denge ve Yapı Malzemesi İlişkisi."** Eriç, Murat - Halit Yaşa Ersoy. Yapı (163) 6.95, 83-86
164 / TEMMUZ 1995	**"Malzeme Seçiminde Ekolojik Kriterler"** Erdin, Nurgün . Yapı (164) 7.1995, 95-97.
169 / ARALIK 1995	**"Kerpiçin Araştırılması ve Niteliklerinin Geliştirilmesi Üzerine"** Akman, And . Yapı (169) 12.1995, 104-105.
171 / ŞUBAT 1996	**"Çevre Üzerine Yorumlar"** Kuban, Doğan . Yapı (171) 2.1996, 63-65.
177 / AĞUSTOS 1996	**"Erciyes Üniversitesi Güneş Evi"** Altuntop, Necdet . Yapı (177) 8.1996, 43-45.
178 / EYLÜL 1996	**"UIA'96 Üzerine Öznel Bir Yorum"** Gür Öymen, Şengül . Yapı (178) 9.1996, 79-96.
183 / ŞUBAT 1997	**"Yapılarda Elektiriğin İnsan Sağlığı Üzerinde Etkileri"** Akman, And . Yapı (183) 2.1997, 100-101.
193 / ARALIK 1997	**"Yapı Malzemeleri Çevre Beyannamesi"** Salmi, Markku. Çev. Gönen, Ela. Yapı (193) 12.1997, 103-107.
195 / ŞUBAT 1998 TEKNOLOJİ	**"Hesse-Thuringen Eyalet Bankası'nın Merkez Binası İnşaatında 'Enerji Kazıkları'"** Çev. Mahmutoğlu, İsmail. Yapı (195) 2.1998, 34-35.
198 / MAYIS 1998	**"Atmosferik Kirliliğin Yapı Malzemeleri Hasarına Etkisi"** Gökaltun, Emrah. Yapı (193) 5.1998, 114-117.

200 / TEMMUZ 1998	**"Küçük Bir Gezegen İçin Kentler"** Rogers, Lord. Çev. Özer, Derya Nükhet. Yapı (200) 7.1998, 41.
213 / AĞUSTOS 1999	**"Ekolojik ve Biyolojik Yapı Uygulamaları."** Akman, And. Yapı (213) 8.99, 91-102.
234 / MAYIS 2001	**"Sürdürülebilir Mimarlık ve İleri Teknoloji İlişkisi: Eco-Tech."** Özgen, Aydan. Eşsiz, Özlem. Yapı (234) 5.2001, 44-54.
234 / MAYIS 2001	**"Enerji Mimarlığı."** Erengezgin, Çelik. Yapı (234) 5.2001, 82-89.
235/ HAZİRAN 2001	**"Binaların Güneş Enerjisi ile Pasif ısıtılması ve Soğutulması"** Çakmanus, İbrahim Dr.. Böke, Asaf Yapı (235) 6.2001, 83-88.
236 / TEMMUZ 2001	**"Kirleten Elektrik!."** Erengezgin, Çelik. Yapı (236) 7.2001, 83-88.
237 / AĞUSTOS 2001	**"Binalarda Düşük Enerji Konseptinin Giydirme Cephe Tasarımına Etkileri."** Akkaya, Alper. Yapı (237) 8.2001, 83-89.
246 / MAYIS 2002	**"Ekomimarlık Platformu: Ekolojik Bir Yaşamın Mimarisiyle İlgilenenlere Çağrı"** Arsan Durmuş, Zeynep. Yapı (246) 5.2002, 38-39.
249 / AĞUSTOS 2002	**"Sürdürülebilir Gelecek İçin Ekolojik Tasarım"** Koçhan, Ahmet. Yapı (249) 8.2002, 45-53.
251 / EKİM 2002	**"Pasif ve Düşük Enerjili Soğutma Sistemlerinin Uygulanabilirlik Ölçütleri"** Çakmanus,İbrahim Dr.. Yapı (251) 10.2002, 89-93.
253 / ARALIK 2002	**"Düşük Enerji Konutu Marzhan, Berlin"** Der: Çimen, Bayar. Yapı (253) 12.2002, 93-96
	"Doğal Çevreyle Kurulan Anlamsal Bağ: Sürdürülebilir Toplu Konut Tasarımı." Koçhan, Ahmet. Yapı (256) 3.2003, 49-55.
	"Sürdürülebilir Bir Mimarlığa Doğru: Ecoparc Projesi ve Neuchatel Federal İstatistik Bürosu Binası, İsviçre." Canan, Fatih. Yapı (256) 3.2003, 56-64. ss. İng. özet.
256 / MART 2003	**"Tarih İçinde Teknolojiyi Yaşamak. Enerji Üretiminde Fotovoltaik Hücreler"** Altın , Müjde. Yapı (256) 3.2003, 88-91.
	"Enerji ve Ekoloji – 1" Erengezgin, Çelik. Yapı(260) 7.2003, 97-100.
260 / TEMMUZ 2003	**"Enerji Etkin Bina Tasarım Yaklaşımı"** Çakmanus, İbrahim. Yapı(260) 7.2003, 101-104.
	"Enerji ve Ekoloji – 2" Erengezgin, Çelik. Yapı(261) 8.2003, 88-95.
261 / AĞUSTOS 2003	**"Yapı Sektöründe Geri Dönüşümlü Malzemelerin Kullanımına İlişkin Olanaklar-Recyhouse"** Der. Şahin, Murat Dr. Yapı(261) 8.2003, 96-100.
262 / EYLÜL 2003	**"Sürdürülebilir Mimarlıkta Ahşap Yapı Malzemesi Kullanımı Lyss Orman Bekçiliği Okulu Örneği."** Canan, Fatih. Yapı (262) 9.2003, 85-91.
	"Yüksek Binalarda Sürdürülebilirlik ve Doğal Havalandırma." Sev, Ayşin - Aydan Özgen. Yapı (262) 9.2003, 92-99.
267 / ŞUBAT 2004	**"2003 Eko-Ev Tasarım Yarışması."** Yapı (267) 2.2004, 81-84.

268 / MART 2004	**"Doğayla Uyumlu Mimarlık Üzerine Bir Deneme** Gürhen, Tümer. Yapı (268) 3.2004, 44-47.
268 / MART 2004	**"Bina yenilemelerinde Güneş Enerjisinin Kullanılması - Bazı Uluslararası Projelerden Elde edilen Sonuçlar ve Deneyimler."** Çakmanus, İbrahim Dr. Yapı (268) 3.2004, 88-94.
269 / NİSAN 2004	**"Küresel Isınma ve Tehlikeli iklim Değişiklikleri."** Keskin, Melda. Gürbüz, Özgür. Yapı (269) 4.2004, 43-46.
276 / KASIM 2004	**"Büro Yapılarında enerji Tüketimini Azaltan çift kabuklu Cam Cephe Sistemleri."** Eşsiz, Özlem. Özgen, Aydan. Yapı (276) 11.2004, 97-104.
285 / AĞUSTOS 2005	**"Alexandreos Tombazis ile Söyleşi – Mimarlar Artık Başka İnsanlarıda Düşünerek Proje Yapmalılar."** Söyleşi: Yılmaz, Burçin. Yapı (285) 8.2005, 66-68.
286 / EYLÜL 2005	**"Sürdürülebilir Kentsel Gelişme İçin Yoğunlaştırma Stratejisi – Konut Yerleşim Alanı Ölçeğinde Bir irdeleme."** Canan, Fatih. Yapı (286) 9.2005, 51-57.
289 / ARALIK 2005	**"Planlama ve Tasarımda İklim Değişikliğinin Olası Etkileri."** Çınar, İsmail. Yapı (289) 12.2005, 82-85.
290 / OCAK 2006	**"Barışçıl Enerji Kaynaklarına Geçiş, İklim Değişikliği Geri Dönüşümsüz Noktaya Gelmeden Önce Gerçekleşecek Mi?."** Keskin, Melda. Yapı (290) 1.2006, 22-27.
291 / ŞUBAT 2006	**"Sürdürülebilir Yapılaşma İçin Uygun Malzeme Seçimi"** Esin, Tülay. Yapı (291) 2.2006, 83-86.
	"Konutlarda Enerji Verimliliği Çalışmaları ve Önemi" Yıldız, Yusuf. Yapı (298) 9.2006, 84-86.
298 / EYLÜL 2006	**"Sürdürülebilir (Yeşil) Ambalaj Tasarımı"** Bayazıt, Nigan. Yapı (298) 9.2006, 91-94.
299 / EKİM 2006	**"Tarihi Kentsel alanlarda Sürdürülebilirlik Düzeyinin Ölçülmesi İçin Bir Model Önerisi"** Oktay, Beşer. Önal Hoşkaya, Şebnem. Yapı (299) 10.2006, 39-44.
300 / KASIM 2006	**"Sürdürülebilir Sağlıklı İç Mekan Tasarımı."** Bir konu. Yapı 33(300) 11.2006, 30-31.
301 / ARALIK 2006	**"Dönüşebilir Malzemeler"** Çev. Sağnak, Tufan. Lefteri, Chris. Yapı (301) 12.2006, 98-100.
303 ŞUBAT 2007	**Sürdürülebilir Mimariye Bir Örnek: Hypergreen.**Yılmaz, Burçin. Yapı (303) 2.2007, 24-25.
303 / ŞUBAT 2007	**"Ekolojik Bulvar."** Çeviren: Tufan Sağnak, Yapı (303) 2.2007, 104-109.
305 / NİSAN 2007	**"Sürdürülebilir Apartman Tasarımı."** Hacaloğlu, Aydan. Yapı (305) 4.2007, 104-107
308 / TEMMUZ 2007	**"Galler parlemento Binası."** Hacaloğlu, Aydan. Yapı (308) 7.2007, 78-84.
309 / AĞUSTOS 2007	**"Enerji mimarlığının Politik Gündemi."** Asımgil, Bedriye. Yapı (309) 8.2007, 98-100.
310 / EYLÜL 2007	**"Sürdürülebilir Konut Memnuniyeti."** Akıner, İlknur. Esin, Nur. Yapı (310) 9.2007, 60-62….
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Başlarken/Yapı'da Ekoloji ve Sürdürülebilirlik"** Yapı (312-EK) 11.2007, 3.

KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Yenilenebilir enerji"** Uyar, Tanal Sıdkı. Yapı (312-EK) 11.2007, 6-9.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Sürdürülebilir Kentsel Planlama"** Eryıldız, Semih. Yapı (312-EK) 11.2007, 10-11.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Sarıgerme Manifestosu"** Kuban, Baha. Yapı (312-EK) 11.2007, 12-13.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Binalarda Yaşam Döngüsü"** Özçuhadar, Tuna. Yapı (312-EK) 11.2007, 14-18.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"LEED Türkiye'de Uygulanabilir mi?"** Erten, Duygu. Yapı (312-EK) 11.2007, 20-21.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Neden Yapı'da Ekoloji"** Akman, And. Yapı (312-EK) 11.2007, 22.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Mimarlık ve Sürdürülebilirlik"** Foster, Norman. Yapı (312-EK) 11.2007, 24-28.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Sürdürülebilir teknolojiler"** Demir, Caner. Yapı (312-EK) 11.2007, 30-31.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Enerji Yönetimi"** hacaloğlu, Aydan. Yapı (312-EK) 11.2007, 32-33.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Isı Yalıtımı ve Yapılarda Ekoloji "** Ertuğrul, Şen. Yapı (312-EK) 11.2007, 34.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Çelikle Sürdürülebilir Yapılaşma"** Özdil, Selçuk. Yapı (312-EK) 11.2007, 36-37.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Saman balyasından Bir Ev. Cumhuriyetköy, İstanbul"** Sander, Arda. Yapı (312-EK) 11.2007, 38-39.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"EKOyapı"**. Yapı (312-EK) 11.2007, 40-45.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Mazı'daki Ev"**. Yapı (312-EK) 11.2007, 46-48.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Irak bataklıkları Müzesi"**. Yapı (312-EK) 11.2007, 50-53.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Merkez tren Garı, Stuttgart, Almanya"**. Ingenhoven, Christophaph. Çev: Gömeci, Işıl. Yapı (312-EK) 11.2007, 54-56.
KASIM 2007-EK "YAPIDA EKOLOJİ"	**"Güneşle Tasarım İlkeleri"**. Eryıldız, Demet. Yapı (312-EK) 11.2007, 58-63.
314 / OCAK 2008	**"Çevresel sorunların çözüm Sürecinde Etkili Bir davranış biçimi Ollarak 'Doğal Evrime Uyum'"** Kebabcı Bahadır, Özlem. Yapı (314) 1.2008, 26-27
314 / OCAK 2008	**"Ekolojik Duyarlılık ve Mimari Politikalar"** Asımgil, Bedriye. Yapı (314) 1.2008, 48-50.
318 / MAYIS 2008	**"Ken Yeang'ın ekolojik Tasarım Yaklaşımı"** Yapı (318) 5.2008, 112-118.
318 / MAYIS 2008 EK ULUSLARARSI YAPI	**"Ekolojik Mimarlıkta Somut Adımlar"** Yapı (318EK) 5.2008, 30-32.

322 / EYLÜL 2008	**"Sürdürülebilir Tasarım Anlayışı İle Ürün Kimliği Korunabilir Mi?"** Özgen, Sinan. Yapı (322) 9.2008, 132-138.
323 / EKİM 2008	**"Yaşam döngüsü değerlendirmesi Kullanım Sürecinde Ürün Kaynaklı Riskler"** Tuna Taygun, Gökçe. Vural, S. Müjdem. Yapı (323) 10.2008, 118-121.
324 / KASIM 2008	**"Binaların Karbon Ayakizi"** Ertan, Duygu. Kabakçı, Dila. Yapı (324) 11.2008, 18
327 / ŞUBAT 2009	**"Binalarda Enerji Performansı Yönetmeliği/Yeni Zorunluluklar"** Bozkurt, Züleyha. Yapı (305) (327) 2.2009, 30-31.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"Başlarken/Ekolojik Mimarlıkta Somut Adımlar"** Yapı (329-EK) 4.2009, 4.
NİSAN 2009EK (YAPIDA EKOLOJİ) HABERLER	**"Yapı Sektörünün yeşil Zirvesi EKODesign 2009 YEM'de"** Haberler. Yapı (329-EK) 4.2009, 13.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"Ken Yeang İle Söyleiş. Yeşil mimarlık Yeşil Mühendislik demek Değildir"** Söy: Engingöz, Yasemin K.. Yapı (329-EK) 4.2009, 22-25.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"Alejandro Zaera-Polo ile Söyleşi. Doğal Olanı Arayış"** Söy: Kayım, Seda. Yapı (329-EK) 4.2009, 26-30.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"David Height ile Söyleşi. Dongtan Eko Şehri"** Söy: Engingöz, Yasemin K. Yapı (329-EK) 4.2009, 32-37.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"Yeşil tasarım Ve Mimarlık"** Söy: Engingöz, Yasemin K. Yapı (329-EK) 4.2009, 38-41.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"Dünya Genelinde uygulanan Yeşil Bina Değerlendirme ve Sertifika Sistemi"** Sev, Ayşin. Canbay, Nilay. Yapı (329-EK) 4.2009, 42-47.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"Türkiye için Yeşil Bina Sertifikası ve Çözüm Önerileri"** Erten, Duygu. Yapı (329-EK) 4.2009, 50-55.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"İnsana / Doğaya Saygılı Mimari çalışmalar"** Akman, And. Yapı (329-EK) 4.2009, 56-59.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"Diyarbakır Güneş Evinin Hedefleri ve Gerçekleşen Sonuçlar"** Erengezgin, Çelik. Yapı (329-EK) 4.2009, 60-65.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"Siemens Gebze tesisleri"** Yaman, Cemil. Yapı (329-EK) 4.2009, 66-69.
NİSAN 2009- EK "YAPIDA EKOLOJİ"	**"Fab-Tek ECO3"** Dündaralp, Boğaçhan. Yapı (329-EK) 4.2009, 70-71.
330 / MAYIS 2009	**"Enerji Ne? Ekoloji Ne?"** Erengezgin, Çelik. Yapı (330) 5.2009, 16.
333 / AĞUSTOS 2009	**"Bir Ekolojik Yerleşim Örneği: Sharnhauser Park"** Çalış İsmet, Ayşe-Tereci, Ayşegül-Eicker, Ursula. Yapı (333) 8.2009, 48-52.
334 / EYLÜL 2009	**"Stefan Behnisch ile Söyleşi, Yeşil Mimarlık Nitelikle İlgilidir"** Engingöz Keskin,Yasemin. Yapı (334) 9.2009, 48-51.
336 / KASIM 2009	**"Sanat, Çevre ve Kent"** Berkin, Genco. Yapı (336) 11.2009, 38-41.
337 / ARALIK 2009	**"Sürdürülebilir Kentler, Yavaş Şehir Hareketi ve Yerel Yansımaları"** Dalgakıran, Ahu- Doğrusoy Türkseven, İlknur. Yapı (337) 12.2009, 44-48.

340 / MART 2010	**"Isıtma, Havalandırma, İklimlendirme Sistemlerinin Sürdürülebilir Mimariye Etkisi"** Özcan, Uğur – Berkin, Genco. Yapı (340) 3.2010, 118-120.
341 / NİSAN 2010	**"Wolf D. Prix'den Perugia, İtalya'da 'Enerji Çatısı'"** Çev: Altan, Secan. Yapı (341) 4.2010, 36.
341 / NİSAN 2010	**"Ekolojik Büro"** Yapı (341) 4.2010, 86-88.
341 / NİSAN 2010	**"Enerji Verimliliği ve Pasif Evler"** Subaşı, Zahide Türkan. Yapı (341) 4.2010, 108-112.
NİSAN 2010- EK "YAPIDA EKOLOJİ"	**"İklim Krizine Ekonomik Çözümler"** Der.Enginöz, Yasemin K. – Altan, Sercan. Yapı (341-EK) 4.2010, 18-19.
NİSAN 2010- EK "YAPIDA EKOLOJİ"	**"2010-2011 Avrupa Yeşil Başkentleri: Stokholm ve Hamburg"** Altan, Sercan. Yapı (341-EK) 4.2010, 20-21.
NİSAN 2010- EK "YAPIDA EKOLOJİ"	**"Ecobuild Konferansı ve BREEAM Sertifikası"** Erten, Duygu. Yapı (341-EK) 4.2010, 22-23.
NİSAN 2010- EK "YAPIDA EKOLOJİ"	**"Yeşil Yenileme, Yapı Sektörünü Canlandıracak"** Der: Altan, Sercan. Yapı (341-EK) 4.2010, 24-27.
NİSAN 2010- EK "YAPIDA EKOLOJİ"	**"Masdar Yerleşimi"** Yapı (341-EK) 4.2010, 28-34.
NİSAN 2010- EK "YAPIDA EKOLOJİ"	**"Gordion ve Erzurum Alışveriş Merkezleri"** Yapı (341-EK) 4.2010, 36-44.
NİSAN 2010- EK "YAPIDA EKOLOJİ"	**"Birleşik Devletler Yeşil Yapı Konseyi (USGBC) Genel Merkezi"** Yapı (341-EK) 4.2010, 46-53.
NİSAN 2010- EK "YAPIDA EKOLOJİ"	**"Unilever Türkiye Bürosu"** Yapı (341-EK) 4.2010, 54-63.
NİSAN 2010- EK "YAPIDA EKOLOJİ"	**"Hypergreen"** Der: Altan, Sercan. Yapı (341-EK) 4.2010, 64-65.
NİSAN 2010- EK "YAPIDA EKOLOJİ"	**"Geleceğin Şekillendirdiği Sürdürülebilir Yaklaşım"** Avcı, Selçuk. Yapı (341-EK) 4.2010, 66-68.
342 / MAYIS 2010	**"Akıllı Binalarda Ekoloji-Teknoloji Dengesi"** Boduroğlu, Şenay – Seçer Kariptaş, Füsun. Yapı (342) 5.2010, 114-118.
343 / HAZİRAN 2010	**"Ekolojik Mimariyle Ortaya Çıkan Alternatif Yaşamlar"** Köse, Ayşe. Yapı (343) 6.2010, 48-51.
344 / TEMMUZ 2010	**"İstanbul'da Dünya Çevre Günü Yansımaları"** Ciravoğlu, Ayşen. Yapı (344) 7.2010, ?.
344 / TEMMUZ 2010	**"Eko-Minimalizm"** Çavuşoğlu, Ömer Halil. Yapı (344) 7.2010, 84-87.
345 / AĞUSTOS 2010	**"Yeşil Kentsellik : Kavramdan Uygulamaya"** Oktay, Derya. Yapı (345) 8.2010, 40-44.
352 / MART 2011 EKO-DÜNYA	**"Binalar, Kanunlar ve Güneş Enerjisi"** Uğurel, Ateş. Eko-Dünya. Yapı (352) 3.2011, 33.
353 / NİSAN 2011 EKO-DÜNYA	**"Nükleer enerjiyi Destekliyoruz! Bizden 150 Milyon Km Uzakta Olduğu Sürece"** Uluengin, Mehmet Bengü. Eko-Dünya. Yapı (353) 4.2011, 39.

NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"Yapılı Çevreyi Bekleyen 'Kusursuz Fırtına'"** Der:Altan, Sercan . Yapı (353-EK) 4.2011, 28.
NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"Binalarda Enerji Performansı ve Enerji Kimlik Belgesi"** Söyleşi: Bayram, Murat . Yapı (353-EK) 4.2011, 30-31.
NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"EKB Uygulamada Nasıl İşliyor"** Söyleşi: Bekler, Seval. Yapı (353-EK) 4.2011, 32-36.
NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"Yapı Malzemelerinde Çevresel Etiketleme"**Engingöz, Yasemin K.. Altan, Sercan**.** Yapı (353-EK) 4.2011, 38-40.
NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"Material ConneXion Dünyadaki 6. Bürosunu İstanbul'da Açıyor"** Der:Engingöz, Yasemin K.. Yapı (353-EK) 4.2011, 42-44.
NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"Eser Holding Genel Müdürlük Binası"** Yapı (353-EK) 4.2011, 46-51.
NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"Levent Ofis Binası"** Çalıkoğlu, Aslı. Can Kortan, Aslı. Yazgül, Tamar Demir. Yapı (353-EK) 4.2011, 52-57.
NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"Ecosistema Urbano'dan Sürdürülebilir Projeler"** Yapı (353-EK) 4.2011, 58-65.
NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"Atelier Ten'den Çevreci Çözümler"** Yapı (353-EK) 4.2011, 66-71.
NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"Boston treepods"** Yapı (353-EK) 4.2011, 72-75.
NİSAN 2011 EK (YAPIDA EKOLOJİ)	**"Zizkov Alışveriş Merkezi"** Yapı (353-EK) 4.2011, 76-79.
MAYIS 2011 EK	**"EKODesign konferansı 2011, 14 Nisan2011 Günü YEM'de Yapıldı"** Yapı (354-EK) 5.2011, 32-33.
355 / HAZİRAN 2011 EKO-DÜNYA	**"Antalya GüneşEv Kapılarını Açtı"** Uluengin, Mehmet Bengü. Eko-Dünya. Yapı (355) 8.2011, 32.
355 / HAZİRAN 2011 EKO-DÜNYA	**"Eko"** Uğurel, Ateş. Eko-Dünya. Yapı (355) 8.2011, 33.
355 / HAZİRAN 2011 EKO-DÜNYA	**"Ekolojik Mimarinin etkisi İle Değişen Çatılar"** Seçer Karriptaş, Füsun. Boduroğlu, Şenay. Yapı (355) 8.2011, 66-69.
356 / TEMMUZ 2011 EKO-DÜNYA	**"Siz kapak Toplayın, Gerisini Biz Toplarız"** Uluengin, Mehmet Bengü. Eko-Dünya. Yapı (356) 7.2011, 22-23.
356 / TEMMUZ 2011 EKO-DÜNYA	**"Aldığından Fazlasını Geri Vermek:Antalya GüneşEv"** Uluengin, Mehmet Bengü. Eko-Dünya. Yapı (356) 7.2011, 22-23.
357 / AĞUSTOS 2011 EKO-DÜNYA	**"Bu Yaz İçin Doğal Öneriler"** Binici, Ahu. Eko-Dünya. Yapı (357) 8.2011, 24.
357 / AĞUSTOS 2011 EKO-DÜNYA	**"En Büyük Nükleer Bizim Nükleer"** Ateşel, Uğur. Eko-Dünya. Yapı (357) 8.2011, 25.
357 / AĞUSTOS 2011	**"Ekstrem Çevre Yapıları"** Özdemir, Kürşad. Yapı (357) 8.2011, 64-67.
358 / EYLÜL 2011	**"İnsanoğlu ve Çevre"** Gençer, Senem. Yapı (358) 9.2011, 37.

358 / EYLÜL 2011	**"Biyoharmolojik Yapılar"** Ekinci, Cevdet Emin.. Yapı (358) 9.2011, 128-132.
359 / EKİM 2011 EKO-DÜNYA	**"Modern Ütopya Kasabası 1"** Binici, Ahu. Eko-Dünya. Yapı (359) 10.2011, 37.
360 / KASIM 2011 EKO-DÜNYA	**"Kendi Çöpünde Kavrulmak"** Yurdakuler Uluengin, Mercan. Eko-Dünya. Yapı (360) 11.2011, 33.
361 / ARALIK 2011 GÖRÜŞ-TARTIŞMA	**"Yüce Yeşil"** Ramo, Beatriz. Çev:Altan, Sercan. Görüş-Tartışma. Yapı (361) 12.2011, 12.
361 / ARALIK 2011 EKO-DÜNYA	**"Türkiye Rüzgar Enerjisi Piyasasındaki Son Durum"** Kalaycı, Alper. Eko-Dünya. Yapı (361) 12.2011, 32.
362 / OCAK 2012 EKO-DÜNYA	**"2012'de Ekolojik-Ekonomik Krize Karşı"** Binici, Ahu. Yapı (362) 1.2012, 22-23.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"Yapı Dergisi'nin Eki 'Yapıda Ekoloji"nin 'Enerji ve Çevre' Ekseninde Son Beş Yıl İçinde Aldığı Konuların Bir Özeti"** Yapı (365-EK) 4.2012, 22-27.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"Türkiye İçin 'Yeşil konut Sertifikası'"** Engingöz, Yasemin K. Yapı (365-EK) 4.2012, 30-31.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"İspanya Yeşil Bina Konseyi'nin Deneyimleri"** Pich-Aguilera, Felipe. Yapı (365-EK) 4.2012, 32-35.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"AB'de 'Binalar İçin AB Ekoetiketi ve Yeşil Satınalma Ölçütleri' Belirleme Süreci"** Der: Altan, Sertcan. Yapı (365-EK) 4.2012, 36-38.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"Yapı Malzemelerinde Ekoetiket"** Köktuna, Merve. Yapı (365-EK) 4.2012, 38-40.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"Çevre Dostu Reus hastanesi"** Yapı (365-EK) 4.2012, 42-46.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"Küçükçekmece Belediyesi'nin Çevre Dostu Yeni Hizmet Binası"** Yapı (365-EK) 4.2012, 48-52.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"Binalarda Enerji Performansı ve enerji Kimlik Belgesi (EKB) Alım Sürecinde Son Durum"** Bayram, Murat. Yapı (365-EK) 4.2012, 54-55..
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"Çevre Dostu Binalar ve Teşvikler"** Ilıcalı, Emre. Yapı (365-EK) 4.2012, 56-58.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"24H- Architecture'dan Çevreci Çözümler"** Yapı (365-EK) 4.2012, 60-66.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"Özyeğin Üniversitesi Yeşil Kampusu"** Mengüç, M. Pınar. Yapı (365-EK) 4.2012, 68-70.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"ODTÜ kuzey kıbrıs Kampusu'nda 'yeşil Kampus' Projesi"** Künar, Arif. Yapı (365-EK) 4.2012, 72-74.

365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"'Sea Tree' deniz Ağacı "** Yapı (365-EK) 4.2012, 76-77.
365 / NİSAN 2012 EK (YAPIDA EKOLOJİ)	**"Ne ekersen Onu Biçersin"** Tyler, Cynthia. Yapı (365-EK) 4.2012, 78-79.
366 / MAYIS 2012 EK (YAPI FUARI)	**"Tasarımın Yeşil Zirvesi 'EKODesign Konferansı' Bu Yıl 5. Yaşını Kutladı"** Yapı (366-EK) 5.2012, 54-56.
368 / TEMMUZ 2012	**"Yüksek Binalar ve Sürdürülebilir Mimarlık: Çelişkiler ve Beklentiler"** Güleryüz, Merve. Dostoğlu, Neslihan. Yapı (368) 7.2012, 72-76.
370 / EYLÜL 2012	**"Yeşil İklim Fonu (GCF) Binası"** Çev: Altan, Sercan. Yapı (370) 9.2012, 108-111.
372 / KASIM 2012	**"Gardens by the Bay'de Soğuk Seralar"** Çev: Altan, Sercan. Yapı (372) 11.2012, 128-133.
373 / ARALIK 2012	**"Liyuan Kütüphanesi"** Çev: Altan, Sercan. Yapı (373) 12.2012, 80-83.

ARREDAMENTO MİMARLIK: 1989-2012

1989/2	
1	**"Kendi Yazlarını Kendi Yaratan Ev"** Arredamento Dekorasyon. 1989/2, 120-122.
1990/5	
MUTFAK	**"Mutfakta Enerjiye Dikkat"** Gür, Bilge. Arredamento Dekorasyon. 1990/5, 132.
1992/6 38	**"Fani Bir Kalıcılık: Geoffrey Bawa"** Lewcock, Ronald. Arredamento Dekorasyon.
PROFİL	1992/6, 78-81.
	"Mimarlıkta Güneş Enerjisi ve Fotovoltaik Modüller" Göksal Türkan.
1997/5 92	Arredamento Dekorasyon. 1997/5, 92-96.
1997/11 97	
YAŞAM	**"Doğaya 'Takı'lan Ev"** Erol, Zeynep. Söyleşi: Özel, Fatoş. Arredamento
ÇEVRESİ	Dekorasyon. 1997/11, 50-55.
1998/3 101	**"Çevre Korumasında Tasarımcı Nerede"** Düzakın Yolsever, Esin. Arredamento
TASARIM	Mimarlık. 1997/11, 113-115.
1998/9	
106 SANAT	**"Ekoloji ve Periferi"** . Arredamento Mimarlık. 1998/9, 2-7.
1998/9	
106 DOSYA	**"Sanal Doğayı Üretmek"** Sargın, Güven Arif. Arredamento Mimarlık. 1998/9, 80.
1998/9	**"Doğa ve Çevre Tasarımı"** Sargın, Güven Arif. Arredamento Mimarlık. 1998/9, 81-
106 DOSYA	85.
1998/9	**"Turgut Cansever'le Tabiat ve Mimarlık üzerine "** Söy: Sargın, Güven Arif.
106 DOSYA	Arredamento Mimarlık. 1998/9, 86-89.
1998/10	**"Ramsey Gardens 'Yeşilci Öncü'nün Yapısı"** Erkılıç Mualla. Arredamento
107	Mimarlık. 1998/10, 102-105.
1999/9	
117 PROFİL	**"Hamzah ve Yeang"** Arredamento Mimarlık. 1999/9, 48.
1999/9	**"Kent ve İklimin Çağdaş Mimarı Ken Yeang ve Biyoklimatik Yaklaşım"** Özkan,
117 PROFİL	Süha. Arredamento Mimarlık. 1999/9, 49-62.
1999/11	
119	
TEKNOLOJİ/MA	**"Ekomimari Öncüsü Bir Kent: Freiburg"** Göksal, Türkan. Arredamento Mimarlık.
LZEME	1999/11,125-130.
2000/1	
121	
TEKNOLOJİ/MA	**"Enerji Sorunu ve Yapılar "** Okutan, Mehmet. Arredamento Mimarlık. 2000/1,112-
LZEME	117.
2000/5	
125 TEKNOLOJİ/	**"Enerji Etkin Tasarım, Mimarlık ve Enerji Korunumu"** Göksal, Türkan.
MALZEME	Arredamento Mimarlık. 2000/5, 146-153
2000/10	
129 GÜNDEM /	**"EASA Avrupa Miimarlık Öğrencileri Buluşması, 2001 'Sürdürülebilirlik'**
MİMARLIK	**Türkiye "** Çıracı, Eren. Arredamento Mimarlık. 2000/10, 40-41,
	"Ekomüzeoloji " Madran, Burçak. Arredamento Mimarlık. 2001/3, 102-108
2001/3	
134	**"Ekomüze Yaklaşımlı Deneysel Bir Örnek: Tahtakuşlar Özel Etnoğrafya Galerisi "** Madran, Burçak. Arredamento Mimarlık. 2001/3, 108-109,
2001/4	**"Richard Buckminster Fuller, Mucit, Tasarımcı, Girişimci"** Uluoğlu, Belkıs.
135 ANMA	Arredamento Mimarlık. 2001/4, 98-102

2001/4 135 ANMA	**"Fuller'in Vaat Edilmiş Toprakları"** Picon, Antoine. Çev.Örs, Kuyaş. Arredamento Mimarlık. 2001/4, 103-107
2002/5 147 PROFİL	**"Glenn Marcus Murcutt"** Arredamento Mimarlık. 2002/5, 80-97.
2002/7-8 149 PROJE	**"Beriköy'ün Tasarımı, Yeşilci Bir Projelendirme Deneyimi"** Okutan, Mehmet. Arredamento Mimarlık. 2002/7-8, 114-118.
2003/1 154 DOSYA	**"Sürdürülebilirlik ve Mimarlık"** Arredamento Mimarlık. 2003/1, 70.
2003/1 154 DOSYA	**"'Sürdürülebilirlik ve Mimarlık' Dosyasında Ekolojik Mimarlık"** Irklı Eryıldız, Demet. Arredamento Mimarlık. 2003/1, 71-76.
2003/1 154 DOSYA	**"'Mimaride Sürdürülebilirlik – Teknoloji İlişkisi: Güneş pili Uygulamaları"** Göksal, Türkan. Arredamento Mimarlık. 2003/1, 76-80..
2003/1 154 DOSYA	**"'Sürdürülebilir Mimarlık Bağlamında 'Akıllı Binalar'"** Tönük, Seda. Arredamento Mimarlık. 2003/1, 81-85.
2003/1 154 DOSYA	**"Ekomimarlık Örnek Yapı ve Projeleri"** Eryıldız, Semih. Arredamento Mimarlık. 2003/1, 86-91.
2003/1 154 DOSYA	**"'Sürdürülebilir Kentleşme için Karar Verme Süreçlerine Halkın Katılımı"** Özbek Sönmez, İpek. Arredamento Mimarlık. 2003/1, 92-95.
2003/3 156 MİMARLIK	**"'Big & Green', 21. Yüzyılda Sürdürülebilir Mimarlığa Doğru"** Jarzombek, Marc. Arredamento Mimarlık. 2003/3, 38-43.
2003/3 156 KAVRAM	**"Mimarlık ve Toplumsal Sorumluluk ve Adanmışlık"** Arredamento Mimarlık. 2003/3, 52.
2003/3 156 KAVRAM	**"Mimarlık ve Toplumsal Sorumluluk"** Tanju, Bülent. Arredamento Mimarlık. 2003/3, 53-55.
2003/3 156 KAVRAM	**"Köktenci Dönüşümden Parçacı Direnişe; Sosyal Mimarlığın '100 yıllık' Kısa Öyküsü"** Sargın, Güven Arif. Arredamento Mimarlık. 2003/3, 53-55-57.
2003/12 164 MİMARLIK	**"Ekolojik Bir Yüksek Bina, RWE AG Genel Merkezi"** Okutan, Mehmet. Arredamento Mimarlık. 2003/12, 114-119.
2004/2 kütüphane	**"Barınağımız Yeryüzü: Buğday Dergisi."** Mimar.ist (KÜTÜPHANE) 2004/2, 12.
2004/8 171 DOSYA	**"'Turistik' Olma Hali ve Sürdürülebilir Mimarlık"** Karabey, Haydar.. Arredamento Mimarlık. 2004/8, 72-73.
2005/9 183 PROFİL	**"Michael Sorkin, Yeni Bir Kentin Peşinde"** Arredamento Mimarlık. 2005/9, 38-56.
2006/1 187 DÜŞÜNCE	**"Sürdürülebilirlik Kavramı Sürdürülebilir mi?"** Ekim, Derya. Arredamento Mimarlık. 2006/1, 122-127.
2006/12 197 GÜNDEM / MİMARLIK	**"Gen(H)ome Projesi"** Arredamento Mimarlık. 2006/12, 32-36.
2007/2 199 MİMARLIK	**"Düşey Bahçe"** Arredamento Mimarlık. 2007/2, 30-35.
2007/6 203 MİMAR	**"Behnisch Architekten"** Arredamento Mimarlık. 2007/6, 86-98.

2007/7-8 **204** GÜNCELLEME	**"Nicholas Grimshaw"** Arredamento Mimarlık. 2007/7-8, 58-62.
2007/12 **208** KORUMA	**"Uzungöl yerleşmesi ve Sürdürülebilir Turizm"** Özen, Hamiyet. Yalçınkaya Erol, Şengül. Arredamento Mimarlık. 2007/12, 80-85.
2008/3 **211** MİMARLIK	**"Benzin Bitti, Kelle Göründü!"** Arredamento Mimarlık. 2008/3, 96.
2008/3 **211** MİMARLIK	**"Ekoloji ve Ekolojik Mimarlığın Dönüm Noktaları"** Tönük, Seda. Arredamento Mimarlık. 2008/3, 96-104.
2009/1 **220** MİMARLIK	**"Tasarımda 'yer' ve 'Akıl' İlişkisi, ODTÜ MATPUM "** Güzer, C. Abdi. Arredamento Mimarlık. 2009/1, 94-97
GÜNDEM/ MİMARLIK	**"Viyana'da Konut Yerleşimi: Yenilikçi, Toplumsal ve Ekolojik "** Arredamento Mimarlık. 2009/3, 30-31
MİMARLIK	**"Mimarın Ekolojist Olarak Portresi "** Erengezgin, Çelik. Arredamento Mimarlık. 2009/3, 40-47
YAYIN **2009/3** **222**	**"Sürdürülebilir Mimarlık",** Ayşin Sev , Arredamento Mimarlık. 2009/3, 128.
2009/6 **225**	**"Bağlar Mersin', Kentsel ve Doğal Yaşamı Birleştiren Bir Yerleşim"** Arıkoğlu, Kaya. Arredamento Mimarlık. 2009/6, ?
2009/9 **227** GÜNDEM/ TASARIM	**"Radikal Doğa: Değişen Bir Gezegen İçin Sanat ve Mimarlık 1969-2009"** Arredamento Mimarlık. 2009/9, 30-31.
PROJE	**"Ecocity İstanbul, Türkiye"** Kazmaoğlu, Adnan. Arredamento Mimarlık. 2009/9, 49-55.
2009/9 **227** DOSYA	**"Mimar Gözüyle yeşil Yapılar: kıbrıs'ın Kerpiç Mirası"** Işık, Bilge. Arredamento Mimarlık. 2009/9, 92-93.
	"Mimarlık ve Biyopolitika, I" Arredamento Mimarlık. 2009/10, 62-63.
2009/10 **228** KAVRAM	**"Duvardan Geçmek: Kent Planlama Eylemi Olarak Askeri Operasyon"** Weizman, Eyal . Arredamento Mimarlık. 2009/10, 64-80.
2010/5 **235** GÜNDEM/ MİMARLIK	**"Kentsel Yeşil: 21. Yüzyılın Avrupa Peyzaj Mimarlığı"** Arredamento Mimarlık. 2010/5, 58-60.
2010/9 **238** MİMARLIK	**"Steven Holl Architects: Herning Güncel Sanatlar Müzesi"** Arredamento Mimarlık. 2010/9, 64-65.
2010/11 **240** TEKNİK	**"Yeşil Binalarda Fotovoltaik PanellerleElektrik Üretimi Neden ve Nasıl Desteklenmelidir?"** Moltay, Can Arda. Arredamento Mimarlık. 2010/11, 123-126.
2011/3 **244** KAVRAM	**"Permakültür, Doğanın İçinden Tasarlayan İnsanın Peşinde…"** Arredamento Mimarlık. 2011/3, 78.
2011/3 **244** KAVRAM	**"Doğanın Alfabesiyle Tasarlamak: Permakültür"** Akhuy, Selen. Arredamento Mimarlık. 2011/3, 79-85.
2011/3 **244** KAVRAM	**"Permakültürle Kenti Dönüştürmek"** Değirmenci, Emet. Arredamento Mimarlık. 2011/3, 86-89.
2011/3 **244** KAVRAM	**"Çoktandır Beklediğimiz onlar, Biziz Permakültür İhtiyaç Duyduğumuz Değişime Çözüm Olabilir Mi?"** Telek, Filiz. Arredamento Mimarlık. 2011/3, 90-95.

2011/4 **245** PROJE	**"Mecanoo, 3 Proje"** Arredamento Mimarlık. 2011/4, 50-?.
2011/10 **250** GÜNDEM/ MİMARLIK	**"Bozuk Sağlık, Imperfect Health"** Arredamento Mimarlık. 2011/10, 46-?.
2011/10 **250** DÜŞÜNCE	**"Güncel Mimarlık sorunsalları: Ekoloji"** Kodalak, Gökhan. Arredamento Mimarlık. 2011/10, 87-97.
2011/12 **252** GÜNDEM/ MİMARLIK	**"Glenn Murcutt: Yer İçin Mimarlık"** Arredamento Mimarlık. 2011/12, 32-34.
2011/12 **252** GÜNDEM/ MİMARLIK	**"WOHA: Singapurlu Mimarların Nefes Alan Mimarlığı"** Arredamento Mimarlık. 2011/12 ,36-37
2012/1 **253** GÜNDEM/ MİMARLIK	**"Re-Cycle: Strategie Per l'architettura, la Citta 'e il Pianetta Geri Dönüşüm: Mimarlık, Kent ve Gezegen İçin Stratejiler"** Arredamento Mimarlık. 2012/1 ,32-35.
2012/1 **253** MİMAR	**"Shim-Sutcliff Architects"** Arredamento Mimarlık. 2012/1, 65-71.
2012/4 **256** MİMARLIK	**"OBR: Open Building Research"** Arredamento Mimarlık. 2012/4, 100-102.
2012/6 **258** GÜNDEM/ MİMARLIK	**"Ütopyacı Dürtü: Buckminster Fuller ve Bay Area"** Arredamento Mimarlık. 2012/6, 41-42.
2012/10 **261** GÜNDEM/ MİMARLIK	**"First, The Forests"** Arredamento Mimarlık. 2012/9, 50-51.
2012/10 **261** MİMAR	**"Vietnam'da Bir Grup Mimar: Va Trong Nghia Architects"** Arredamento Mimarlık. 2012/9, 52-72.
2013/6 **269** MİMARLIK	**"Ekoturizm ve Ekolojik Mimarlık: Kapadokya Bölgesinde Geleneksel Mimari ve Butik Oteller"** Özsoy, Malike. Arredamento Mimarlık. 2013/6, 100-105.
2013/6 **269** İZLENİM	**"Büyülü Bahçeler: 'Gardens By The Bay'in Süperağaçları"** Topçu, E. Ümran. Arredamento Mimarlık. 2013/6, 106-109.

MİMAR.İST

2001/1 yapı fiziği-malzeme-detay	**"Hava Kirliliği ve Mimarlık."** Söy: Yıldırım,Tuna. Oral koçlar, Gül. Mimar.ist (FİZİĞİ-MALZEME-DETAY) 2001/1,142-143.
2001/2 dosya	**"Mimarlık ve Su."** Gürsel, yücel. Mimar.ist (DOSYA-MİMARLIK VE SU) 2001/2, 72-74.
2001/3 dosya	**"Kent, Kentleşme ve Planlama."** Keleş, Ruşen. Mimar.ist (DOSYA-KENT VE PLANLAMA) 2001/3, 79-81.
2002/1 inceleme	**"Prematüre bir Modern Mimarlık Ortamının ya da 'Derme Çatma'Bir Çevre Tasarım Pratiğinin Özeleştirisi."** Batırbaygil, Harun. Altınoluk, Ülkü. Mimar.ist (İNCELEME) 2002/1, 41-46.
2002/3 görüş	**"UIA'da 'Jimmy' Dönemi ve Mesleki Denetimde 'Mimari ÇED' Deneyimimiz."** Ekinci, Oktay. Mimar.ist (GÖRÜŞ) 2002/3, 10-11.
2002/3 kütüphane	**"Çevre Tümdür: Çok Boyutlu Bir Olaya Bütüncü Bakış."** Der: İncedayı, Deniz. Mimar.ist (KÜTÜPHANE) 2002/3, 8.
2002/3 dosya	**"Uluslararası Platformda Çevre."** Uysal, Yıldız. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 44-46.
2002/3 dosya	**"İbrahim Kaboğlu ile Uluslararası boyutta Çevre ve Hukuk Üzerine."** Söy:Uysal, Yıldız. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 47-56.
2002/3 dosya	**"İmar Planı Yerine Çevre Duyarlı ve Koruma Amaçlı Kent Planlaması."** Suher, Hande. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 57-60.
2002/3 dosya	**"Eko-Kent? Bir 21. Yüzyıl İkilemi."** Gürsel, Yücel. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 61-63,
2002/3 dosya	**"İstanbul ve 'sürdürülebilir Mimarlık'. Sürdürülebilirlik ve Mimarın Sorumluluğu."** Karabey, Haydar. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 64-66.
2002/3 dosya	**"Sürdürülebilirlik bağlamında Planlama ve tasarım."** Oktay, Derya. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 67-71.
2002/3 dosya	**"yapılarda Sürdürülebilirlik Kriterlerinin Uygulanabilirliği"** Ayaz, Emre. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 72-74.
2002/3 dosya	**"Fosil Yakıtlar ve Kent."** Kuban, Baha. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 75-76.
2002/3 dosya	**"Yenilenebilir enerji"** Yazıcı, Mehmet. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 77-78.
2002/3 dosya	**"Bir Kentsel Dönüşüm projesi olarak Sidney olimpiyat Köyü."** Der:İncedayı, Deniz. Tercan, Ahmet. Köksal, Gül K. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 79-82.
2002/3 dosya	**"Sürdürülebilir Mimarlık Örnekleri."** Der:İncedayı, Deniz. Tercan, Ahmet. Köksal, Gül K. Mimar.ist (DOSYA – SÜRDÜRÜLEBİLİRLİK VE MİMARİ) 2002/3, 83-86.
2002/4	**"Çevre Tümdür – Çok Boyutlu Bir Olguya Bütüncü Bakış"** Der. İncedayı, Deniz . Mimar.ist (KÜTÜPHANE) 2002/4, 8.
2003/1 yapı fiziği-malzeme-detay	**"Enerji Etkin Cepheler – Çift Kabuk Cam Cephe, Cam Cepheler ."** Çetiner,İkbal. Mimar.ist (YAPI FİZİĞİ-MALZEME-DETAY) 2003/1, 105-107.
2003/3 eleştiri-kuram	**"Sosyal Sürdürülebilirlik Bağlamında Mimarın Değişen Durumu ve Mimarlık Eğitiminde İrdelenmesi."** İncedayı, Deniz. Mimar.ist (ELEŞTİRİ- KURAM) 2003/3, 34-38.

2004/1	**"Günümüz Mimarlık Ortamında Eleştiri."** Aydınlı, Semra. Mimar.ist (ELEŞTİRİ-KURAM) 2004/1, 29-36.
2004/1 kent	**"Kent Planlamasında Yeşil Alan Gereksinimi."** Karagüler, Sema. Mimar.ist (KENT) 2004/1, 101-104
2004/2 kütüphane	**"Barınağımız Yeryüzü: Buğday Dergisi."** Mimar.ist (KÜTÜPHANE) 2004/2, 12.
2004/2 inceleme	**"Mimari Tasarımda Ekolojik Yaklaşımlar."** Balkan, Erkan A. Mimar.ist (İNCELEME) 2004/2, 32-39.
2005/4 eleştiri-kuram	**"Birbirimizle ve Dünyayla İlişki Kurmanın Yeni Yollarını Bılmamız Gerek ."** Zerzan,John. Der: Önal,Kubilay Çev:Hatipoğlu,Yalın. Mimar.ist (ELEŞTİRİ-KURAM) 2005/4, 47-54.
2006/2 inceleme	**"Afet Sonrası Acil Yardım Aşamasında Barınma: Sürdürülebilirlik-Sistem Yaklaşımı."** Limoncu, Sevgül. Mimar.ist (İNCELEME) 2006/2, 36-.
2006/4 eğitim	**"Sürdürülebilirlik Düşüncesi Üzerine Yorumlar: Eyüp Simtel Fabrikası ve Bir Stüdyo Deneyi."** Ciravoğlu, Ayşen. Mimar.ist (EĞİTİM) 2006/4, 87-91.
2007/1 yapı fiziği-malzeme-detay	**"Sürdürülebilirlik Bağlamında Güneş Enerjili Su Isıtma Sistemlerinin Tasarım Öğesi Olarak Değerlendirilmesi."** Sakınç,Esra Şerefhanoğlu Sözen,Müjgan. Mimar.ist (YAPI FİZİĞİ-MALZEME-DETAY) 2007/1, 103-112.
2007/3 inceleme	**"2000 ve 2005 Dünya Fuarlarının Karşılaştırmalı İncelenmesi, Mimarlıkta Çevreciliğin Bir Eleştirisi."** Ciravoğlu, Ayşen. Mimar.ist (İNCELEME) 2007/3, 17-25.
2008/1 eleştiri-kuram	**"Organik Mimarlık Süreçleri."** Özkanlar, Gökçen. Mimar.ist (ELEŞTİRİ-KURAM) 2008/1, 34-44.
2009/1 haber	**"Ekoloji Söyleşileriyle Yeni Bir Yolculuk."** Ciravoğlu, Ayşen. Mimar.ist (HABER ETKİNLİK) 2009/1, 5.
2009/1 kütüphane	**"Karbon Ayak İziniz, Mark Lynas."** Mimar.ist (KÜTÜPHANE) 2009/1, 9.
2009/1 dosya	**"Kentsel Ölçekte Ekolojik Bİr Model: Freiburg-Vauban."** Ulus, Cengiz. Mimar.ist (DOSYA-MİMARİ TASARIM ve TEKNOLOJİ) 2009/1, 65-70.
2009/2 görüş	**"Doğa, Kent ve Sürdürülebilirlik Bağlamında Mimarın Sorumluluğu."** Tuna, Bülend. Mimar.ist (GÖRÜŞ) 2009/2, 10-12.
2009/2 dosya	**"Mimarlık ve Çevreci Yaklaşımlar Bir Arkaplan Denemesi."** Ciravoğlu, Ayşen. Mimar.ist (DOSYA-MİMARLIK ve ÇEVRE) 2009/2, 38-42.
2009/2 dosya	**"İlhan Tekeli; Ekolojik Tasarımda Neyi Kastettiğinizi Bilmezseniz, Duygusal Bir Atıf Olur."** Söy; Kural, Nerkis. Mimar.ist (DOSYA-MİMARLIK ve ÇEVRE) 2009/2, 43-49.
2009/2 dosya	**"Ekolojik tasarım; Yeni Bir Eleştiri."** Madge, Pauline. Çev: üstiner, Ruhnaz İpek. Mimar.ist (DOSYA-MİMARLIK ve ÇEVRE) 2009/2, 50-58.
2009/2 dosya	**"Çevreye Yaklaşımda, Sürdürülebilirliğin yanı Sıra Süreklilik İlkesinin de Gözetilmesi Kaçınılmazdır."** Birkan, Çelen. Mimar.ist (DOSYA-MİMARLIK ve ÇEVRE) 2009/2, 59-62.
2009/2 dosya	**"Olağanlaştırılması Gereken Deneysel Bir Üretim Alanı: Türkiye'de ekolojik Mimarlık."** Kayım, Emine Seda. Mimar.ist (DOSYA-MİMARLIK ve ÇEVRE) 2009/2, 63-68.
2009/2 dosya	**"Ekolojik Duyarlılıkla Tasarlanmış mimari Projeler."** Bahadır, Özlem. Yaşa, Enes. Mimar.ist (DOSYA-MİMARLIK ve ÇEVRE) 2009/2, 69-73.
2009/2 dosya	**"Gelecek, İklim Değişikliği, Karbon Kredileri ve dahası…."** Laul, Anil. Çev: Öcal, Fatma. Mimar.ist (DOSYA-MİMARLIK ve ÇEVRE) 2009/2, 74-78.

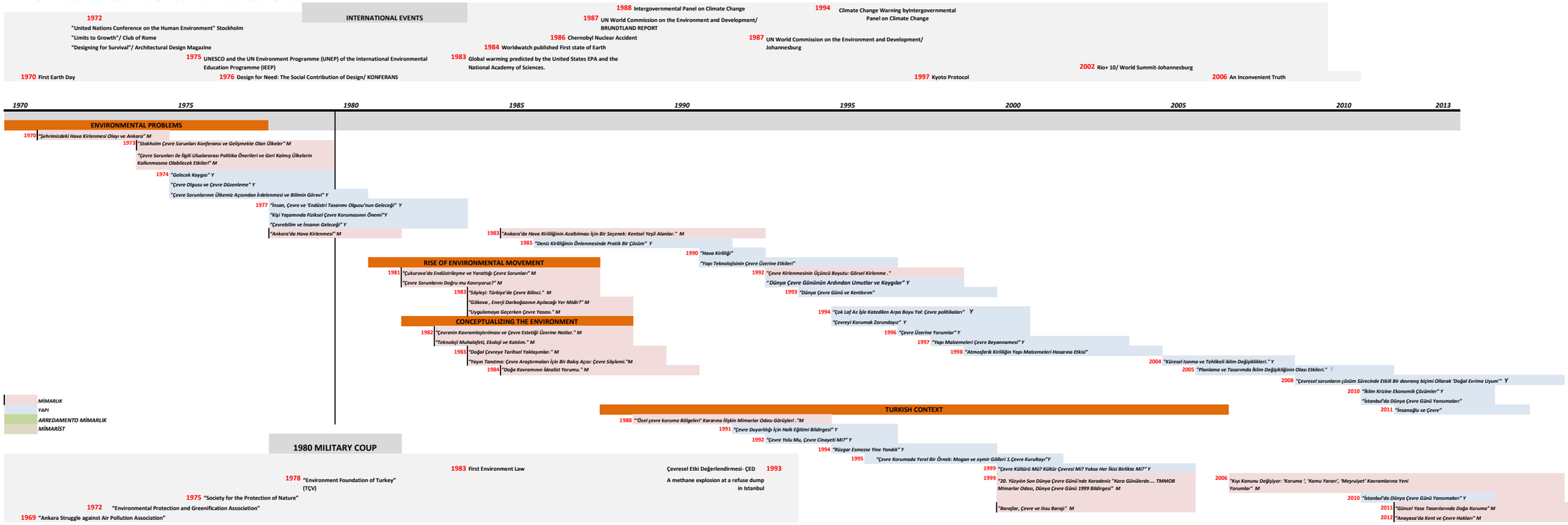
2011/3 kütüphane	**"Türkçeye Çevirisi Yapılan İlk Yeşil Bina Değerlendirme Kılavuzu: BREEAM International Commercial Europe."** Mimar.ist (KÜTÜPHANE) 2011/3, 7.
2011/3 dosya	**"Dikkatli Taşıyınız. Sürdürülebilirliğin Zorlukları ve Mimarlık Eğitiminin Gündemi."** Altomonte, Sergio. Çev. Öcal, Fatma. Mimar.ist (DOSYA-MİMARLIK EĞİTİMİNDE SÜRDÜRÜLEBİLİRLİK) 2011/3, 32-40.
2011/3 dosya	**"Sürdürülebilir Tasarım ve Mimarlık Eğitimi."** Esin, Nur. Mimar.ist (DOSYA-MİMARLIK EĞİTİMİNDE SÜRDÜRÜLEBİLİRLİK) 2011/3, 41-45**.**
2011/3 dosya	**"Çevre ve Toplum Dostu 'Sürdürülebilir' Bir Mimarlık Eğitimine Doğru."** Oktay, Derya. Mimar.ist (DOSYA-MİMARLIK EĞİTİMİNDE SÜRDÜRÜLEBİLİRLİK) 2011/3, 46-51.
2011/3 dosya	**"Türkiye'de Mimarlık Eğitiminin Çevresel Bağlamı: İyimser Tabloya Kuşkucu Sorgulamalar."** Ciravoğlu, Ayşen. Mimar.ist (DOSYA-MİMARLIK EĞİTİMİNDE SÜRDÜRÜLEBİLİRLİK) 2011/3, 52-60.
2011/4 (43)	**"Çevre için – Çevre İle Tasarla"** Değer, Yılmaz. Beykan, Ahmet. Izgi, Sinan. Muallaoğlu, Serpil. Ayata, Oğuz. Mimar.ist (EKOLOJİ) 2011/4, 87-93.
2012/2 (44)	**"GREENAGE – Yeşil Atölyeler"** Olgun, İnci. Ayna, Aylin. Mimar.ist (EKOLOJİ) 2012/2, 47-54.
2012/3 (45)	**"Herzberg Toplu konut Projesi, Viyana"** AllesWirdGut Proje Ekibi. Çev: Öcal, Fatma. Mimar.ist (EKOLOJİ) 2012/3, 31-35.
2012/4 (46)	**"Doğaya Uyumlu Mimari Yaklaşım"** Gökçe, Çukur Duygu.. Mimar.ist (EKOLOJİ) 2012/4, 30-35.
2013/1 dosya	**"Kent ve Konut Politikaları"** İncedayı, Deniz. Mimar.ist (DOSYA- KENT VE KONUT POLİTİKALARI) 2013/1, 43-45.
2013/1 dosya	**"İstanbul'da yeni konut Sunumu: Dinamikleri ve Aktörler"** Purkis, Semra. Kurtuluş Hatice. Mimar.ist (DOSYA- KENT VE KONUT POLİTİKALARI) 2013/1, 57-67.
2013/1 dosya	**"Kentsel biçim ve Sürdürülebilirlik İçin Farklı Yaklaşımlar ve İstanbul'da yeni konut Projeleri"** Tercan, Ahmet. Mimar.ist (DOSYA- KENT VE KONUT POLİTİKALARI) 2013/1, 72-77.

APPENDIX B

GRAPHS ILLUSTRATING THE COURSE OF THE MAIN CONCEPTS SHAPING THE DISCOURSE ON ENVIRONMENTAL ARCHITECTURE

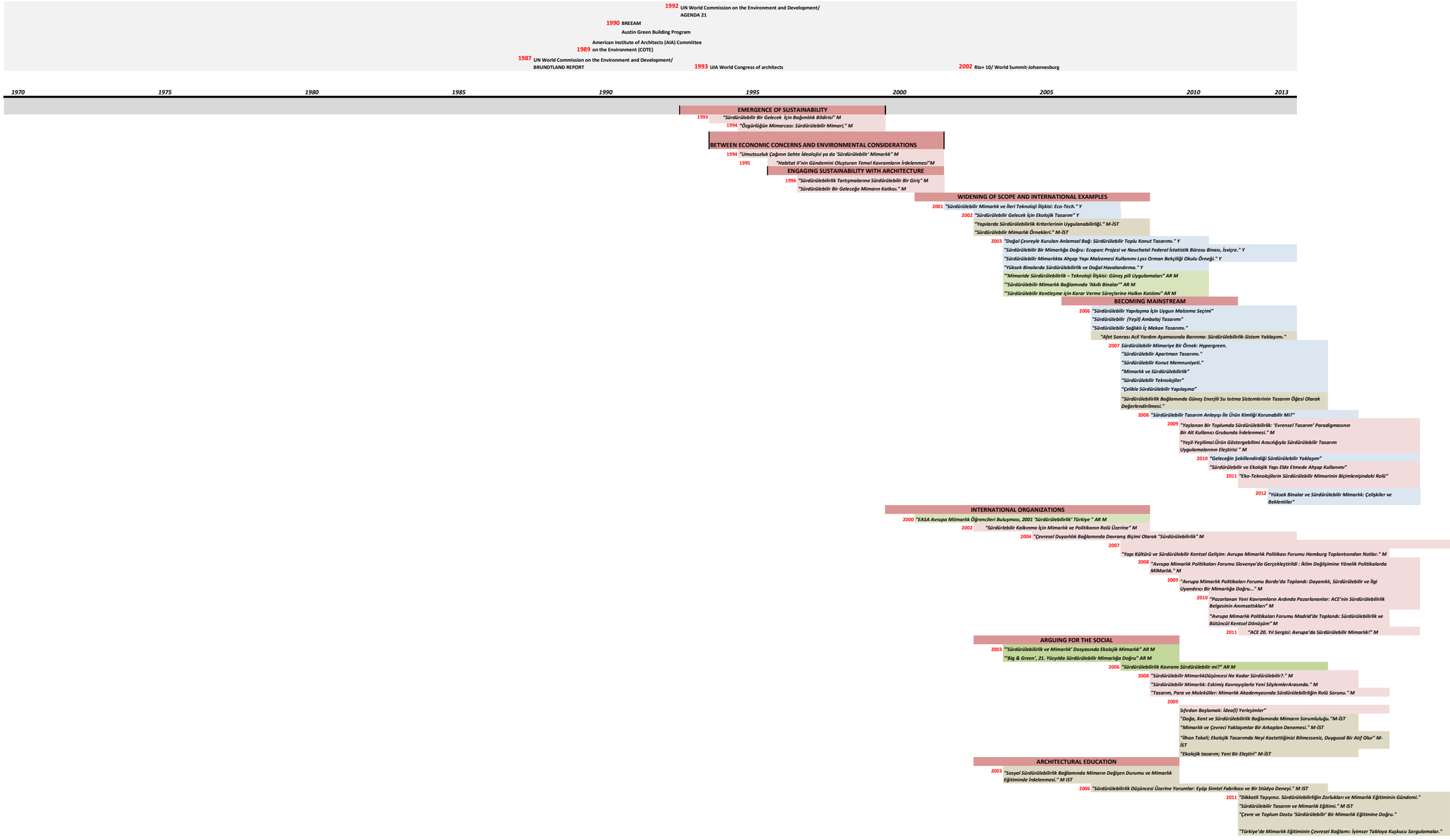
ENVIRONMENT

IN TURKISH ARCHITECTURAL PERIODICALS



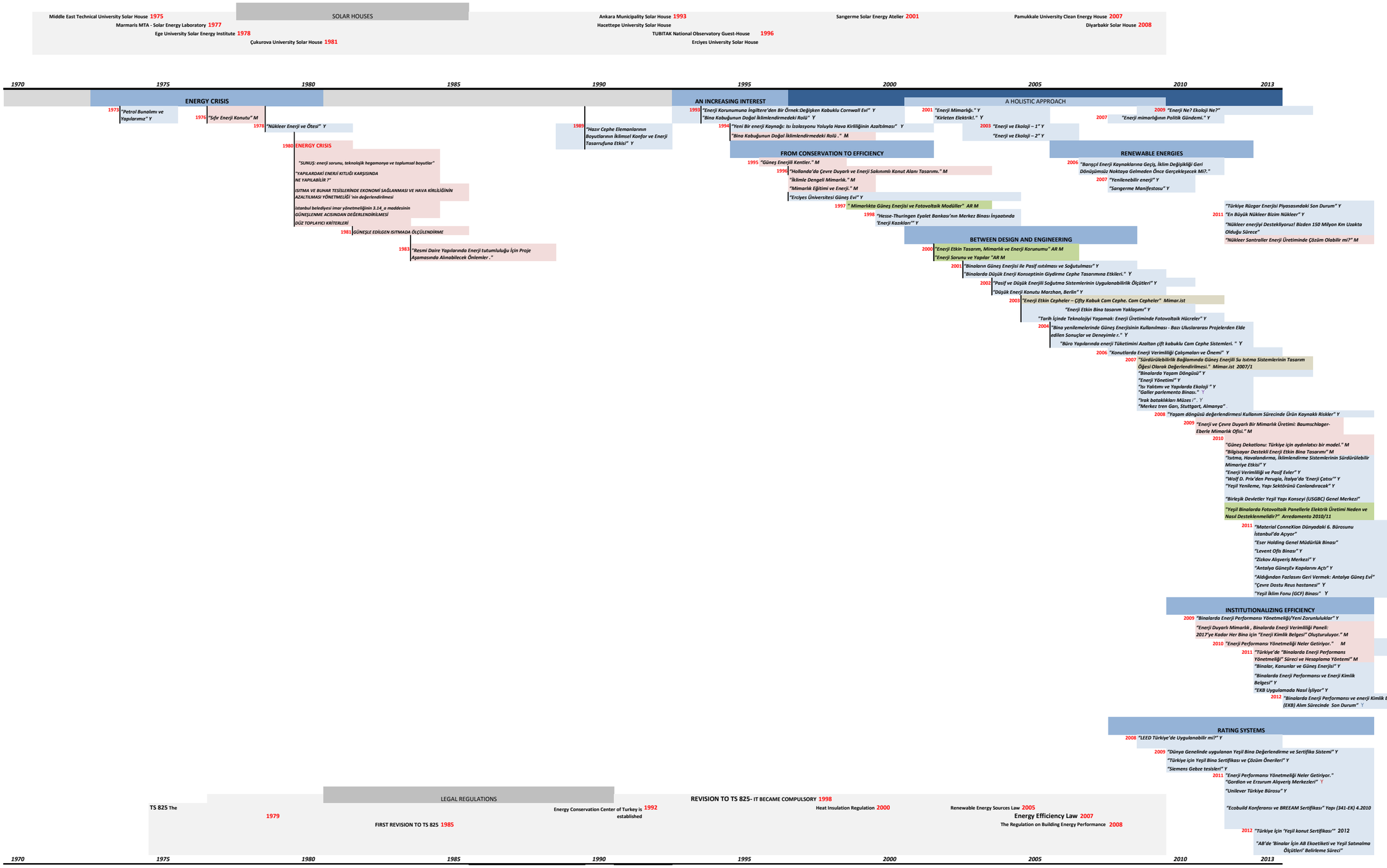
SUSTAINABILITY

IN TURKISH ARCHITECTURAL PERIODICALS



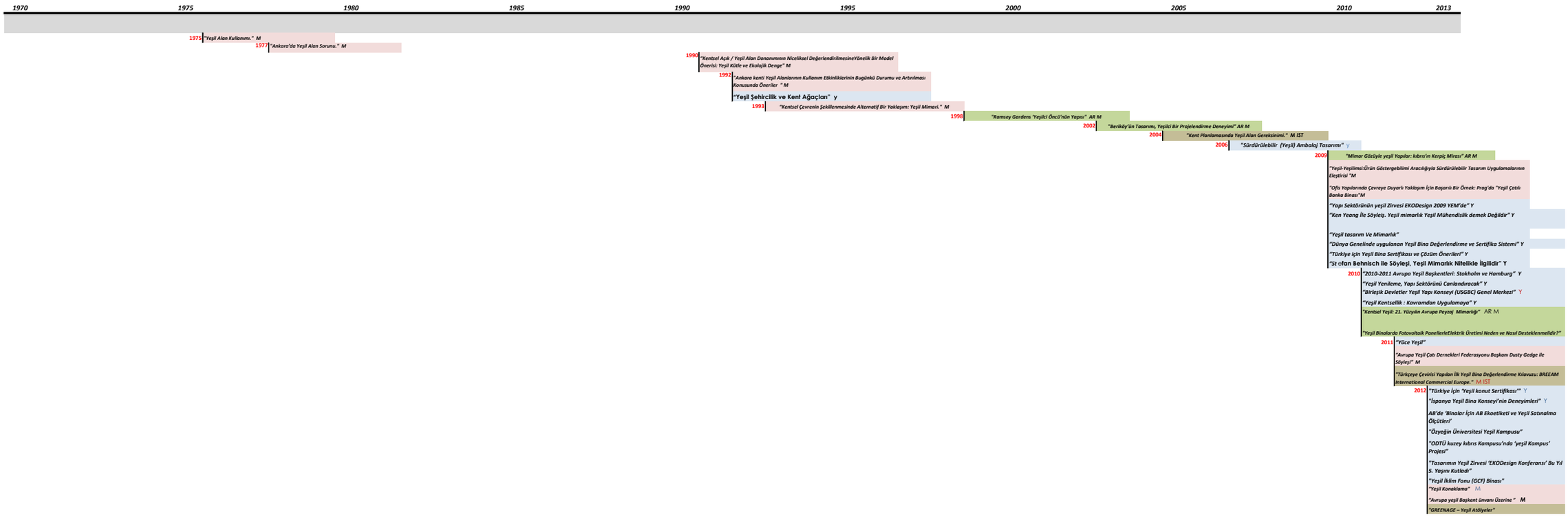
ENERGY-EFFICIENCY

IN TURKISH ARCHITECTURAL PERIODICALS



GREEN

IN TURKISH ARCHITECTURAL PERIODICALS



VITA

PERSONAL

Surname, Name : **ÖZER** DEMİREL Sinem

Date and Place of Birth : 04.02.1978 – İzmir (Turkey)

E-mail : sinem.demirel@gmail.com

EDUCATION

PhD., İzmir Institute of Technology, Graduate School of Engineering and Sciences, Department of Architecture (2006-2014)

Thesis: "Environmental Discourse in Turkish Architecture"

M.Sc., Middle East Technical University, Graduate School of Natural and Applied Sciences, Department of Architecture (2002-2005)

Thesis: "'Production of Space' in the Post Earthquake Region: Three Cases from Düzce"

B.Arch., Middle East Technical University, Faculty of Architecture, Department of Architecture (1995-2000)

ACADEMIC EXPERIENCES

Research Assistant, İzmir Institute of Technology, Graduate School of Engineering and Sciences, Department of Architecture (2006-2008)

Part-time Instructor, İzmir University of Economics, Graduate School of Engineering and Sciences, Department of Architecture (2013-2014)

Part-time Instructor, İzmir University, Faculty of Fine Arts and Design, Department of Interior Architecture (2013-2014)