A paradigm shift in the first year design education

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Abstract:
Today a remarkable paradigm shift in design issues necessitates rethinking the architectural education. All the concepts, values, techniques concerning the disciplines which supply the body of knowledge necessary for architectural education are used to define the problems of architectural design paradoxes and their solutions. In order to develop creative thinking for modifying this body of knowledge, students should be aware of the shifting balances of architectural paradoxes which require a more unified mind. This new teaching and learning strategy proposed for first year design education is considered as a paradigm shift because of the basic pedagogical change in design education in which architectural design, basic design and technical drawing and perspective courses are integrated within an intellectual studio atmosphere.

The intellectual studio atmosphere created during the 2003-2004 academic year at ITU Faculty of Architecture provided both the instructors and the group of 50 students to act as energy receivers to capture the reciprocal relationship between the whole and the parts, in both general and particular issues. Fundamentally this strategy makes these 50 students be able to transform all the abilities and knowledge that they have learned throughout their life-long education.

Keywords: *Interdisciplinary, intellectual studio atmosphere, holistic approach, architectural design paradoxes*

Prologue

Today a remarkable paradigm shift in design issues necessitates the rethinking of architectural education. Since ambiguity and change are essential with the innovations of the 21st century, the architects should be able to cope with the change by developing a more unified architectural mind (Frith, 2000). In this respect, a profound change in design education which is characterized by its unified mind and holistic approach can be considered as a paradigm shift because of both change and continuity in design education. Since co-existence of change and continuity exhibits a paradox of design education, the first year design studio education proposed in this article is considered as a paradigm which consists of ambiguous variables instead of

dependent and independent variables. This paradigm shift including its network relations consists of shared beliefs, values, techniques by members of contemporary designers who teach design studios at architectural schools in Europe and the USA. Thomas Kuhn's (1969) notion of a paradigm aims to capture the idea that a socially reinforced, trained way of thinking rejects the sharp dichotomy between the context of discovery and the context of justification. Kuhn points out that there is no encoded expert knowledge and there are no rules; instead there are many nodes, each of which connects to several other nodes forming ambiguous, complicated network relations. These connections can be added or removed and the strength of their influence can be increased or decreased (Bird, 2000). What Kuhn calls "learned similarity relations" requires intuition which depends on both subjectivity and objectivity, both rationality and irrationality. He also introduces intuition that is not purely individual but is shared. There are important consequences for Kuhn's overall view that are referred to. The paradigm shift proposed for first year design studio education in this article takes its roots from the gestalt shift[i].

Between 2000 and 2005 at ITU Faculty of Architecture, a network model, which takes its theoretical roots from Kuhn's ideas based on a holistic approach and called a paradigm, was applied in the design studio. According to this approach, architectural design, basic design and technical drawing courses are integrated within an intellectual studio atmosphere in order to develop a more unified architectural mind. Since the holistic approach is grounded on dialectics of design issues, first, the duality between the abstract nature of basic design and the concreteness of architectural design is rejected. A similar split between architecture as an art and architecture as a science gives rise to a duality that has been an obstacle for the progress of architectural education. In actuality, the issues of basic design exist in architectural design problems and the expression of ideas about architectural design is a matter of both basic design and technical drawing issues. They all require the development of an intuition that is nourished by all these courses in relation to each other. Intuition therefore cannot be taught, it can only be nourished from the intellectual atmosphere in which conceptual and experiential knowledge are brought together by transforming creative thinking into critical thinking. In this respect, the paradigm shift offered in first year design education is a strategy that constitutes the spine of the education on behalf of intuition and awareness. In order to go beyond this problem; a puzzle-solving strategy instead of a problem-solving method is adopted to facilitate the awareness of students in grasping relations among art, science and philosophy. Fundamentally this strategy makes students be able to transform all the abilities and knowledge that they have learned throughout their lifelong education. First of all they have to develop the ability of flexible thinking. "To think something different", which means to come to see things in new ways, can be considered as creativity. On the other hand, students should be encouraged to grasp design knowledge by intuition. The body of knowledge in architecture, which is both learned conceptually and grasped experientially, emerges through the intuition. An intuitive approach to design issues requires flexible thinking: a different way of seeing and thinking from rigid thinking and searching for proper formulas. Intuition helps students approach the problems both emotionally and logically, to be able to discover both visible and invisible patterns of reality. While conceptual knowledge is nourished by experiential knowledge, in reverse, experiential knowledge is articulated by conceptual knowledge.

This issue necessitates an intellectual studio atmosphere as much as the development of a program, considered to be the result of a paradigm shift in first year architectural design education. In the studio atmosphere created by the writers of this article and the group of 50 students at ITU Faculty of Architecture, the dialectics of learning and teaching which consist of shifting roles of being both formal and informal, of traditional and progressive attitudes, and of authoritarian and democratic behavior, motivate students to stimulate interest in discovering and understanding design knowledge. The empathetic way of teaching and learning can also be considered as the dialectics of the intellectual studio atmosphere. The dialectics of teaching and learning proceed by asking questions in considering the metaphoric statement of *"a glass of water which is half full."* It refers to being both of half-fullness and half-emptiness, depending on how one wants to look at it. Students get lessons from this statement in constituting their holistic way of thinking, which requires approaching design problems both in *general / abstract* and also *particular / concrete* terms. By tracing their beliefs and values in relation to their reversals, students grasp the deep meaning of design problems and puzzle them out within the complexity and contradictions of architecture (Aydınlı and Akpınar, 2003).

Perception, experience and conceptual idealizations have been the driving forces for this way of thinking which leads to the awareness of how to use intuition in understanding the contradictions and complexities of design knowledge. This awareness has emerged by reasoning and reversible thinking encouraged in the studio atmosphere in which the dialectics of teaching and learning nourishes each other. The dialectics of the studio atmosphere was also about the design knowledge both learned objectively and experienced subjectively; referring to the reciprocal relationship between generality and particularity, abstraction and concreteness, well defined and open-ended knowledge, denotative and connotative meanings, discursive and presentational issues. Critical thinking, which can also be considered as a source of design knowledge, evolves in learning by both experience and digital tools within this atmosphere by questioning and reasoning sources of information and learning to derive their own conclusions from the available evidence. And this atmosphere also allows the students to transform their creative thinking into critical thinking, preventing their ways of thinking from becoming rigid.

On the other hand, digital technology has created its own milieu in which students can develop their imaginations within a virtual world. Today it is certain that visual presentations, virtual models and animations that motivate imagination are becoming important tools. However without being aware of the concept of scale and the logic of orthogonal drawing techniques, digital technology and its affordances are not being used properly and efficiently. Within the intellectual studio atmosphere described in this article, students were asked to use both conventional techniques and digital technology simultaneously in order to develop their design thinking. Both concrete and abstract physical models and virtual models have supported and nourished each other in developing the design idea.

Because of the paradigm shift in contemporary architecture and accordingly architectural education in some universities in Europe and the USA, the students should be prepared to meet the changing demands of the profession having an interdisciplinary structure. In parallel to the interwoven

relationship between architecture and natural sciences, humanities, and social sciences; architecture, science, art and philosophy are also interwoven within a whole entity. Everything is related to each other according to the changing time and space relations; the way of relation can be changed and modified in relation to its contextual issues. Today architecture can be defined in accordance with its complexity and contradiction, which gives rise to ambiguity, flexibility and uncertainty. Within these conditions of contemporary education, how to teach and learn design becomes more important than what to teach and learn. According to this paradigm proposed for the first year architectural design education, the design knowledge cannot be transmitted; it can be discovered. The method of discovering architectural issues in relation to each other and transforming them into design knowledge is learning by experience. This kind of learning depends on understanding instead of knowing and also requires being active in learning which means that dialectics of teaching and learning emerge by giving some clues to students for discovering the design knowledge. Conceptual thinking and intuitive skills are overlapped during the discussions on experiential knowledge presented on assignments at the studio, creating critical thinking. In doing so, students begin to discover problems and oversights inherit in the assignments; and intuition becomes a fundamental ability to be developed for first year architectural students to be able to uncover the hidden dimensions of architecture.

The characteristics of an intellectual studio atmosphere
The characteristics of the intellectual studio atmosphere take their roots from the dialectic nature of design issues. Both teaching and learning, product/idea and process, learned objectively and experienced subjectively, generality and particularity, abstraction and concreteness are also some dialectics of architectural design; in considering the dialectics of knowledge, we can talk about both well defined and open-ended knowledge, both denotative and connotative, both discursive and non-discursive, both visible and invisible dimensions all together set a network within a non-linear structure. According to this holistic approach, although they all opposed, they also complete each other.

The context of the intellectual studio can be considered as follows:
- First it is concerned with an analysis of concept formation in architecture to be undertaken in the first assignments with the use of a series of examples which depends on discoveries,
- The content of the program, sequential placement of explorations in parallel and intersected relations, are designed so that the student would deal with several problems simultaneously, while projects would activate each other and enable interaction between themselves.
- The studio atmosphere is designed to turn information into a shared, discussed, discovered and experienced entity. (Figure 1)
- The dynamic structure of the program is supported by media like the explorations (main projects), workshops, conferences, films, etc.
- In the first exploration, the human body is considered in a way so that the designed tool would directly be related to it. This work could enable learning about the human scale by applying it on the own body and getting acquainted with the body scale as the basic element of architecture. The subsequent explorations after this initial work would differ in design scales, not necessarily placed in a growing scale order. This kind of moving back and forth between shifting scales is for gaining a common way of looking at design in whole scales.

Figure 1: *Studio atmosphere*

- Critical placement of intense and short workshops in the program is planned so that they contribute to the projects in terms of adding rhythm, excitement and motivation.
- Exercises for developing three-dimensional thinking were thought out as sketches-exercises, utilizing acts like reduction, decomposition, transformation, abstraction of the seen thing.
- Pin-up reviews of the projects were done in the form of colloquiums in which everybody could participate as (much as) critics, where an interactive atmosphere has emerged. The dynamizing and contributing effect of these discussions had supplementary impacts on the projects.
- Sharing some activities out of class hours (visiting the biennale exhibitions, going to a ballet performance, the Edirne city visit) is considered as a tool for supporting the education and also help establishing interest in multi directions as a way of life in architecture.

Reflections of the paradigm shift on student projects

The first year design education described above as a paradigm shift was first applied during the 2000 – 2001 academic year. In this article, the progressive application of this paradigm shift is explained which is basically similar but having a different program and strategy with 50 students during the 2003 – 2004 academic year. The studio program is developed according to unified issues concerning basic design, architectural design, technical drawing and perspective courses along the year. Since the learning and teaching strategy has changed as described above, the formation of design knowledge is also different from the previous paradigm. When the studio courses such as basic design, architectural design and technical drawing are separated, design knowledge can only be transmitted within their own area, which depends on their own rules and methodologies. This paradigm has gone through the passive learning and teaching methodologies because of its teaching and learning duality that takes its roots from the split of the studio courses. The dialectics of learning and teaching occurs when creative thinking is transformed into critical thinking, requiring holistic and flexible thinking as an active process.

The aim of this paradigm shift on design education is to motivate students to transform their ways of thinking, seeing, understanding, learning into this active learning and teaching strategy. The problems in projects and assignments are designed as explorations waiting to be discovered by

uncovering some details that are invisible without being dictated according to our individual expectations. In doing so, students are encouraged to discover their personal values. The basic idea in designing the process and program of this first year design studio as a whole refers to this paradigm which is composed of learning and teaching, conceptual and experiential knowledge and concerns other dialectics creating a network relation among all. On the other hand, the existence of the students of architecture, of interior design and of landscape architecture all together creates an interesting synergy of the integrity of the process and program. Fifty students are divided into four sub-groups having opportunities to meet different tutors by each design project. As a starting point of each project, a written document prepared by the tutors helps students discover each design puzzle.

Assignments:
Invisible Cities
The first assignment of the first term was to re-create the cities, which are narrated in the book "Invisible Cities" of Calvino as a model with preset/defined rough materials such as cardboard, wire, etc. It was applied as a day exercise to make the students be aware of the environmental issues in cities and architecture. The aims of the study can be defined as objectifying the poetic texts by motivating imagination, thinking about the concept of scale and reaching a shared design proposal after discussing different ideas in the group work. (Figure 2)

Figure 2: *Creative models of invisible cities*

Treasure Hunt
The aim of the study is to understand the city (the metropolis "Istanbul") through discovery. Following a selected route with the help of clues given on a sketch map was the first step of the study. Students discovered the patterns and thresholds around the Taşkışla center by way of a game, competition and puzzle in this two week-long study. In the next step of the study, the interpretation step, they articulated and added details using metaphors to the structure of the city. (Figure 3)
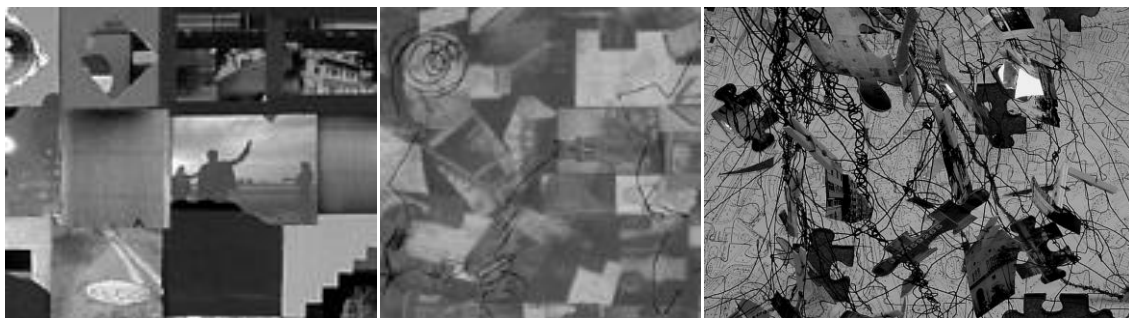
Figure 3: *Abstract graphics and models from Treasure Hunt*

Biennale record and advertising

The first part of this two week-long study was visiting the 8th Istanbul Biennale altogether, discussing it with curators and some artists. The second part aimed at motivating students to create different mediums for ways of advertising the biennale. Enabling students to meet different intellectual milieu, interrogating contemporary art and making space/content/art relations recognizable are the other positive impacts of the study. (Figure 4)

Figure 4: *Photomontage and graphics of Biennale record and advertising*

Portfolio/ Catalogue

Students were responsible for creating both a personal portfolio and a class catalogue by overviewing the two semesters. The catalogue consists of selected projects, which were chosen by all the students from among all projects/explorations. In this two week-long study, the catalogue eventually came out as a new presentation of the projects, which were then placed in a newly designed page format. The portfolio was a personal design diary and each student would design it in a proper and unique format. (Figure 5)

Figure 5: *Pages from catalogue*

Explorations:

Living Buildings

The project was based on understanding the meaning of architecture and learning representation techniques by researching distinguished Modernist housing examples in Turkey (dated between 1920-1970).

The house is a global concept with its local identity. It can be claimed that the most efficient tool for man to establish a modernist identity is the "house" as the primary dwelling space. It is factual that in relation to its geography, climate and topography, the house creates its own unique context and shapes the architectural character of the physical environment, the settlement that surrounds itself.

The most discussed aspect of the modernist view is that it changes this local identity and dictates a similar architectural attitude worldwide in the name of function, utility and economy. But at the same time, also in Turkey, and sampling in Istanbul, there have been Turkish and foreign architects who have created exemplary modernist houses as proud announcements of their period. The modernist identity developed by its local features has grown into/become an answer to the globalization world.

What exists behind the fact that these courageous architects still today receive applause from us? The answer is that while changing the codes of yesterday, they established an architecture, which could match the idea of "the Turkey of Atatürk and the Republic" with its own peculiarities and the positives of the modernist idea. There are no stereotypes, prototypes in the modernist architecture of Turkey. Modernity in Turkey has qualities ahead of its time, with contemporary and rich spatial characteristics timeless and demolishing all prototypes.

The following eight distinguished houses that have survived to the present were chosen for this project.
Devres House, Bebek, 1932, Ernst Egli
Sea Pavilion, Florya, 1934, Seyfi Arkan
Villa Maral, Göztepe, 1940, Emin Onat
Birol House, Sarıyer, 1945, Radi Birol
Dervis Manizade House, Büyükada, 1956, Sedat Hakkı Eldem
Sadıkoğlu House, Büyükada, 1956, Emin Necip Uzman
Saatçioğlu House, Anadolu Hisarı, 1960, Haluk Baysal-Melih Birsel
House in Rumeli Hisarı, 1966, Muzaffer Sudalı

The project continued over two semesters and contained various types and levels of studies such as: visually; preparing oral/verbal documentation with the living witnesses of the building (owner, architect, neighbor…); collecting literals from architectural magazines; drawing plans, sections, elevations, details, axonometric perspectives of the building in different scales, using one point and two point perspectives; preparing digital drawings and conceptual presentations; comparing with synchronized examples from the Western Modernist proposals…(Figure 6)
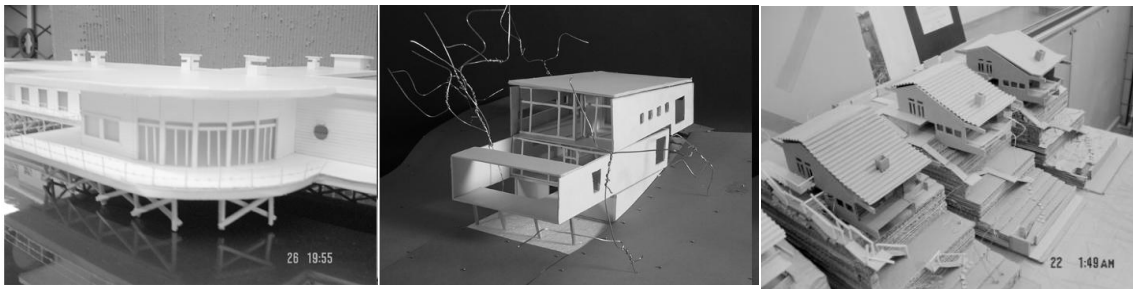
Figure 6: *Examples from Living Buildings; models of Florya Sea Pavilion, Saatçioğlu House and House in Rumeli Hisarı*

Body-Space-Function
The first year architectural students were faced with a design project called 'body-space-function' with a duration of 2 weeks, based on bodily experiences with the aim of developing the students' concept of space. They were asked to design an object as an extension of the body, which visually

and functionally co-exists by making use of the bodily experiences encountered through planned workshops.

The aim of this exercise was to lead the students to explore the use of body and bodily experiences by measuring their own body dimensions. They have tried to discover the potentials of the body having idiosyncratic characteristics of the individual. In order to discover other modes of expression and understanding, particularly effective and symbolic languages of various spatial characters, in the first year design studio, students dealt with a project based on a bodily experience.

The design project 'body-space-function' is a 'new' design object to bring these three concepts together. It would enable students to consider these concepts wholly as well as separately. It would bring a new dimension to the body's known functional characteristics. This is an extension design fulfilling the visual and functional accordance with the part of the body it is added on to. This inevitably has to be an original design, an unknown exploration that will come out with the imagination, observation and logical thinking skills. Students were asked to identify their design using a specific title. In this design process, where ideas develop with metaphors, new perceptions and new relationships guide this design. The discussion themes for the design would be: their functional contributions to the body, portable and transformable character, usage time/period, place/body, being personal.
The questions to be answered throughout the process are:
What is its existing reason?
Which function/act will it facilitate?
When will it be used?
How will it be carried?
The students were encouraged to use a variety of materials in this design exercise including all kinds of waste and recycle materials (pizza boxes, cans, cola cans, etc.) as well as common modeling materials.

In order to enrich this design project, two supportive works were planned as the following one-day workshops, to be conducted simultaneously with the design work. These are;
- a workshop about the location of the body in space, the body as defining the limits of space - **the dance workshop**,
- a workshop for a design object derived from the body – **the jewel workshop.**

These two workshops would contribute to our bodily experience ability, add new dimensions to functionality and broaden horizons for the entirety of the design idea for the existing and its designed extension.

An exercise based on bodily experience and intuition is an exercise of a subject that is familiar to the designer. In such a design project, which allows for a high motivation, creativity is expected to be at its maximum. With this feature at hand, a bodily experience design project seems very satisfactory for the initial state of the design education. (Figure 7)

As a result, it is possible to discuss the problems of experiential knowledge, providing an excellent opportunity to use emotions and transform them into intuition. Bodily experience in space gives rise to the power of grasping or intuitively understanding the essence of spatial effects. Intuition helps students to develop the sensibility and self-motivation, which leads to a

creative, flexible, tolerant and liberal personality who can face the complexity and ambiguity of design problems (Aydınlı, Eren, Erkök, Uz Sönmez, 2004).

**Figure 7:** *Examples from projects of Body-Space-Function, Dance and Jewel Workshop*

Fictional Topography and Structure

One of the last projects of the first semester entitled "formed topography-structure" aimed to design a non-existent topography constituting various formed / virtual topography experiences and structure experiments taking place on these topographies. As a part of life, with its most common meaning today, topography represents the surface shape of the ground, and the issue that it is only transformable to a certain degree is the most important fact for the human who tries to exist on it with a structure. Structure, in a way, is a form of struggle of the human with topography. In the study, the concept of structure was explored through its meaning from building scale to living creatures in nature and to cities. The aim was to discuss the formed topographies simultaneously with the structures shaped on them. The main aim of the project was to discuss concepts like gravity, load, sustaining/sustained tension-compression, equilibrium, composition/installation, visual, semantics, functional components altogether and to form a structure with a certain existence aimed at relating to the topography.

The duration for this project was 4 weeks. Establishing virtual topographies as different environments formed the first step of the project. In this direction, topographies were freely formed with two different materials: clay and metal. In order to establish topography models, firstly, as a common and single material, clay was used. Singular modules adaptable to the adjacent ones were produced and by the joining of the modules, a whole single model was formed. In this whole work, compositions with sharp shapes as well as compositions with soft lines of the plausible topography were experimented

by the students. When a discussion was made to consider what these shapes might correspond to at a real topography scale, it was seen that topographies we encounter in the surroundings generally embody soft contoured, plain, bigger shapes. This clay model has served to develop an idea about sharp and soft forms relative to scale existing in topography. The later model work was of individual compositions with metal materials. At this stage, with the condition that it was metal, all kinds of materials could be used and models were formed by producing elements objects such as pointed elements (nails) as well as planar elements (metal panels, foils, wire screens).

After the evaluation of the constructed topographies with their formal and perceptional properties, they became grounds for designs to be built on. The structure to be designed could be a structure like a tower, a bridge, a springboard, a quay, etc, as well as a transformable structure that can adapt and relate to different topographic forms. Bridges are the most widely chosen design object. In the design process, the main problem remaining is its relation with the topography. Answers were searched for questions like: Why was it needed? Which function would it serve? What would move on it? How much load would it carry in that direction and how would it be carried? (Figure 8)
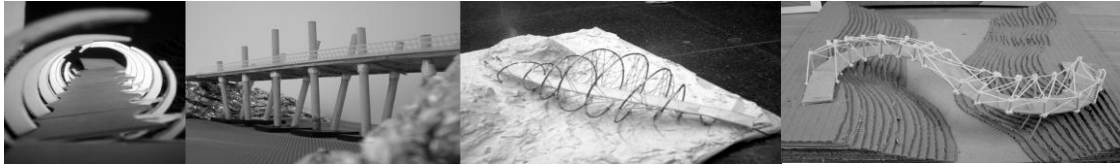
Figure 8: *Models from projects Topography-Structure*

Thematic space
The last project of the first semester, a "thematic space" in a present subway tunnel in Süleymaniye, was a five-week study. It aimed to develop spatial awareness and environmental consciousness. An "experience" led the design process, which enabled an "understanding of architecture and the city" and extended the limits of imagination through a multi-layered reading of the city.

Consequently, in the planned subway system of Istanbul, at a part where construction was stopped by external factors, an existent tunnel space, which would possibly remain inactive, established the study area. Providing a new spatial character to this place by designs of imagination has shaped this inspiring design work.

The chosen study area is a space, which was suddenly added to the city at a different level, in the dense old texture of the city as a result of short-term strategies and inconsistency of policies. This coincidental character, which is not encountered in cities with linear development, was considered as an opportunity rendering the city dynamic, which could be utilized in this project.

The tunnel, which was the grounds for this project, has also a very interesting story of being added to the city. The construction of the Taksim-Yenikapı line as a part of the Istanbul subway system that includes the Golden Horn passage began in the 1990s. But as the bureaucratic process between institutions turned into reciprocal arguments and finally a blind alley caused by the Golden Horn passage, the construction was stopped in 2001.

As the Conservation Board did not approve the new bridge project over the Golden Horn, with the justification that it would harm the silhouette of the historical peninsula, and proposed that the route should be moved 100-150 meters to the west, as a result, approximately 500 meters of constructed line became idle around the Süleymaniye Mosque.

Students, first of all, directly experienced this special space in the design process. The endless impact of the tunnel due to its physical features, in a way the dissolving of the borders of the space, spatial experiences occurred by the circulation of light in the space, strongly influenced students and provided new horizons for their visual memories. The sense of place/placelessness that occurred in their minds in the tunnel led them to reconsider and question the meaning of "place".

In the continuing process, the 1/50 scale big model built by using the varying sections enabled them to feel the space again. The projects developed subsequently can be grouped into the following approach titles according to the way of using the existing tunnel space: forming its own independent shell in the tunnel space; forming sequential spaces which use the linearity of the space; establishing spaces with flexible, shrinking and enlarging structures according to usage types; adopting the unique form of the tunnel shell as the starting point of the design; forming the spatial arrangement with the content; setting up designs based on perception of different senses in the space.

This has been a project by which concepts like; place/placelessness, old/new, horizontality/gravity, void/shell, light/sound/color, transformation/shrinkage/enlargement, function/serving for a certain purpose were discussed. The project also turned the paradox of ground and underground in Süleymaniye into a design. Comprehending the importance of approaching an urban problem which is a part of daily life with historic consciousness and discovering the potentials of the existing tunnel by experiencing the space were the aimed contributions for the students. (Figure 9)
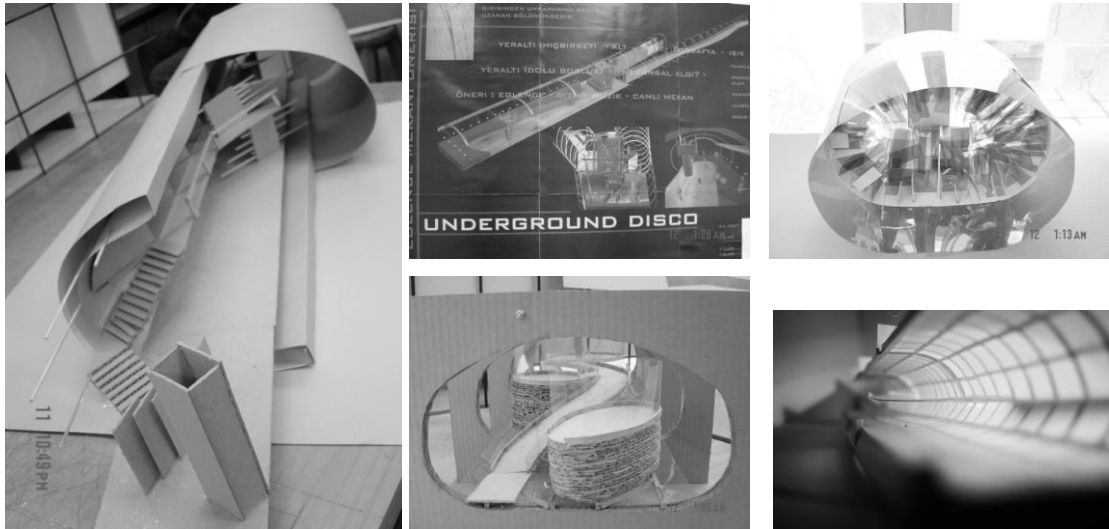
Figure 9: *Examples from projects Thematic Space*

Urban Traces
This project is based on a research, an exploration of the various types of traces (such as the aqueducts, walls, transportation routes, transitions, thresholds, niches...) forming the several layers of the Istanbul city that we live in. The project duration as a whole was four weeks. The assignment was the first study, when the students are confronted with the city issues and develop ideas on how to deal with them.

Concepts like old/new, timelessness, place/placelessness, solid/void, stability/activeness, continuity/change, place/space relations, memory of the city would be addressed throughout the study in order to evoke a questioning way of looking at the city. While trying to decipher some codes of the city, students were provided with supplementary information about its several historical states, enabling them to establish ties with the codes they were dealing with.

When "Understanding Urban Traces of Istanbul" was suggested as a project theme, the main point of the method was that students should choose an urban trace and define its problems/possibilities by themselves through their own experiences, experiments and emotions even including their prejudices. This approach giving credit to singular impressions and decisions was especially aimed for in order to maintain distinctive outcomes.

In this respect, four steps of the project are explained below:
1. An all day "crash" city trip with students by bus and individual city reading by walking (bodily experiences and dynamic perception together)
The discovery of the existential space emerges from the bodily movement; its hidden meaning may help students to distance themselves from artificially constructed representations of the physical world.
2. Choosing an urban trace and representing it by two-dimensional graphic interpretations
This abstract presentation was used as a tool to discuss the potentials of the urban trace with general and specific questions such as:
▪ What do we understand from the concept of "urban layers"?
▪ How does the layered structure of the traces contribute to the city?
▪ How can we define the life shaped by traces?
▪ Does the urban trace have a comprehendible size? (some students suggested the Bosphorus as an interpretative urban trace)
▪ Does the urban trace have a proper function?
▪ How does it connect to the city?
▪ Is the urban trace alienated from the city completely? (aqueducts...)
▪ Does it have design elements for its function? (Yedikule dungeons being used for concerts without proper seats)
▪ Students at this stage, brought up creative interpretation-images of their selected trace, developed as personal graphic/pictorial/caricaturistic expressions.
3. Decisions about the chosen urban trace/New questions…
Scale, place, hidden / secret elements, monumentality, physical characteristics, usage qualities are new concepts to discuss in this step.
4. Interpreting the chosen urban traces as design issues
The design assignment involves an addition-supplement design to the chosen trace which will emphasize and strengthen its power by doing one of these: help fill a gap (perceptual, functional, visual…), ease a difficulty in usage, create a supportive contrast, enrich the way it is being experienced, enliven it by bringing life in/onto it. (Figure 10)
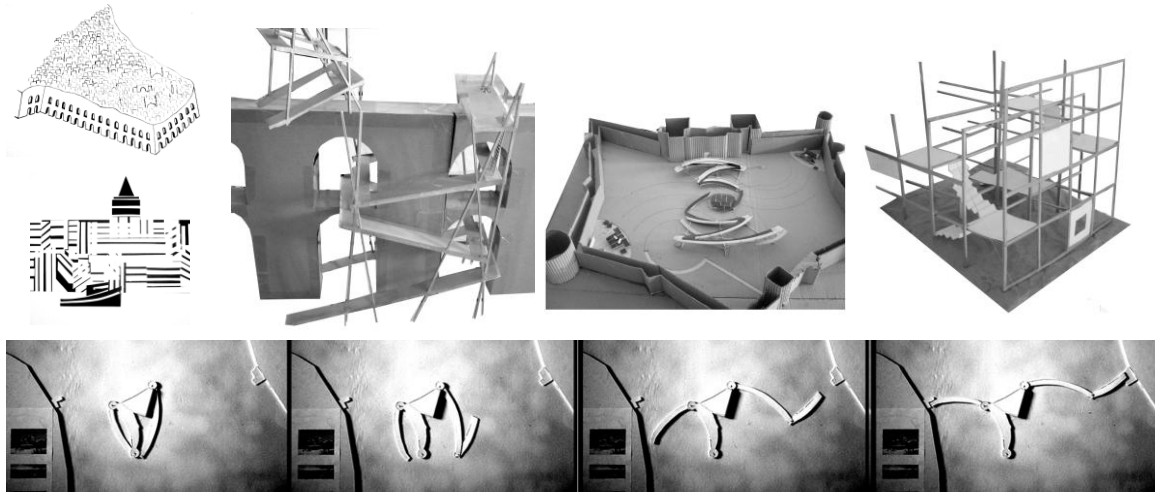
Figure 10: *Examples from projects of Urban Traces*

This project theme was suggested in order to establish a meaningful relation network between today's mechanism of the city and the past's urban traces. As well as understanding the city, they connected today's city dynamics in a simple and modest way. Because of that, their interpretations are unique and powerful, their designs do not contend with the urban trace they chose (Aydınlı, Eren, Erkök, Uz Sönmez, 2005a)

The weekend house utopia
The last project of the 2nd semester, with a duration of five weeks, was entitled "The weekend house utopia" and was aimed at being a challenging study for the imagination by inviting the students to think about the three concepts together which actually seem discordant with each other.

The word "house" is a poor-looking, frail, dull, tiny single-syllable word. However, when taken with its meaning and content, it becomes a very massive concept almost as huge as the universe; an attractive, vivacious, multi-syllable, multi-meaning concept which cannot be very easily understood. This concept is inevitably subject to curiosity for its possible future state.

Discussing visions about the future of housing as well as its present state is a central theme for the education of architects. Furthermore, figuring out a "weekend house utopia" would add another dimension to the discussion such as leisure types, ways of life in the future or a "possible future weekend life". Therefore, creating a future scenario and re-structuring the weekend house in a visionary environment was given as the design brief. Considering concepts such as place / nowhere / everywhere / virtual environment / reality / utopia, the assignment aimed at forcing their limits, getting rid of their own codes.

The concept of a "weekend house utopia" involves a contradiction in itself, as a utopia implies a rigid and ideal situation with its own conditions; on the other hand, the "weekend house" is a pretty ordinary issue. Besides the basic components of conventional utopia as being closed, static, orderly, commanding, rigid, certain, are also completely the opposites of the key concepts of today, like uncertainty, flexibility, openness, dynamism,

transformability. The task involves questioning this dilemma and trying to find a new definition for a "weekend house".

Thinking "within a utopian frame" in this study does not intend to limit the meaning of the word "utopia" which is usually evoked in the mind as: "being only imaginary, non-applicable, applicable only with technology reaching a certain level in the future", but rather to think of probable alternative lifestyles for the future under the frame of likely changes to be influencing the world. It is considered that utopian thinking serves here as a propulsive force for the conceptual thinking at the beginning of the design process. Thus, students in this stage have firstly searched for their own personal and very subjective future life images and have constituted the weekend house involved in this dream by asking questions like: where is this house? What is the reason for its existence? Who are its users? When will it be used? After this stage, the aim was that students would search how this fiction could be realized through the technical knowledge of today and lay the structural foundations of this future narration by asking the questions of what kind of material? How will it be carried out? etc.

Narrations identifying the environment have made different considerations such as: extreme geographical conditions (underwater, inside canyon, underground, inside rock cliff, etc.) or new usage areas evolved due to changes in the urban order (over skyscrapers, building facades by sticking like parasites, etc.). (Figure 11) Flexibility has been the key concept for many narrations. Designs concurrent to sometimes different environmental conditions (topography, climatic conditions) or sometimes to changes in the amount of users or usage type have been achieved by ways like: different arrangements of modular elements, whole structures changing shape, movable in various directions, detaching and carrying the structure to another place (Aydınlı, Eren, Erkök, Uz Sönmez, 2005b).
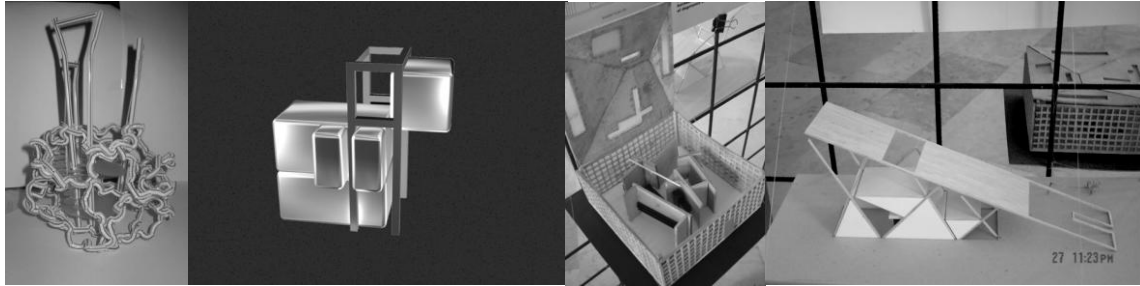
Figure 11: *Examples from projects of A Weekend House Utopia*

Epilogue
Today, architecture has undergone a radical change challenging to the duality between art and science, emotion and thought, function and form, theory and practice. Architectural education also covers its own paradoxes and ambiguity in a pluralist milieu where there is no exact answer to the question of "what is architecture?". Since the change and ambiguity is inevitable with the innovations of the 21st century, a network model as a paradigm helps students to develop a more unified mind - a holistic way of thinking - for coping with the change. A shift toward this holistic way of thinking involves an understanding of multiple issues embodied within architecture as well as society. In order to adopt these ideas in teaching and learning strategies of the first year architectural design studio of the 2003-2004 academic year, the dialectics of the studio atmosphere gave rise to

connotations and associations of different concepts that can be transformed into new situations. What is important for lifelong education is to be able to transform and modify the existing knowledge into different situations using flexible thinking. In doing so, design knowledge can be transformed and evolved within a trans-disciplinary structure of pluralism.

From this point of view, a paradigm shift is proposed for the first year design education in order to develop awareness to be able to cope with the contradictions and paradoxes that are some characteristics of today's architecture. The basic idea of this paradigm is to create an intellectual studio atmosphere as described above in which students discover architecture, grasp some clues from the environment by experiencing it according to some concepts that motivate their imagination and discuss their visual and verbal presentations in each step of the design process. Throughout this approach to design education, the borderline between teaching and learning becomes ambiguous; experiential and conceptual knowledge is integrated into a whole; the ability of interpretation and understanding, an awareness of the transition between learning and knowing are developed. While the priority of education is focused on these points, abstract concepts, which are new for the first year architectural design students are grasped and discovered by experiencing and are discussed without being transformed into prejudices. Thus, they become aware of how the meaning of these concepts changes according to their contexts. During the reviews of the projects in each step, it is possible to evaluate these results on how the students develop their ideas that can be modified according to contextual issues and how they transform their creative thinking into critical thinking. We think that the awareness that can be acquired through experiencing, reasoning, briefly learning to learn is the most important issue in architectural design education. This paradigm is therefore based on the transformation and modification of a contextual form of knowledge in design into explicit re-representational structures, which support creative design.

A paradigm shift in the first year design studio consists of a dynamic process and program having a fundamental project which continues throughout the whole year, such as living buildings, short tem projects such as invisible cities, treasure hunt, biennale record and advertising, portfolio/ catalogue, assignments and workshops integrated into the related projects as described above. All the reviews, pin ups, colloquiums, the process and product were evaluated as a part of the intellectual studio, creating a dynamic structure. In doing this, the development of awareness was observed, justifying our foresights. This structure helps students to think something different, to be able to have flexible thinking, to be able to transform, modify and renew their knowledge according to the changing conditions and positions. The program has been developed on a scale which has progressed and deepened from abstract to concrete; motivated students being able to think, to imagine and create within a large spectrum from reality to utopia, to be able to bring together their perceptions and imaginations in accordance with reality and possibility. This paradigm shift depends on explorations that focus on the city Istanbul in which they experience everyday life. All the projects and assignments based on discovery of knowledge (resulting from explorations) have prepared students to think, to understand and to reason about the realities of an architectural environment in a comprehensive and holistic way.

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Birinci yıl tasarım eğitiminde paradigma değişimi

Günümüz tasarım dünyasında yaşanan paradigma dönüşümü mimarlık eğitiminin yeniden düşünülmesini gerekli kılmaktadır. Mimarlık eğitimi için temel olan bilgi akışını sağlayacak, mimarlık dışındaki disiplinleri ilgilendiren, kavramlar, değerler ve tekniklerin tümü, mimari tasarım paradokslarını ve çözümlerini tanımlamak için kullanılabilir. Öğrenciler yaratıcı düşünceyi geliştirmek ve bilgi akışını dönüştürmek için; daha bütünsel bir bakış gerektiren mimari paradoksların değişken dengesinin farkında olmalıdır. Birinci yıl tasarım eğitiminde önerilen bu yeni öğrenme ve öğretme stratejisi, temel pedagojik değişiklikler yüzünden, paradigma değişimi olarak tanımlanabilir. Bu pedogojik değişiklik, tasarım eğitimindeki mimari proje, temel tasarım ve teknik resim dersleri bütüncül bir yaklaşımla, birbirine entegre olarak, entellektüel bir stüdyo ortamında ele alınmasına neden olmaktadır.

Birinci yıl mimari tasarım stüdyosunda bir paradigma değişimi olarak entellektüel bir stüdyo ortamı oluşturmak, bir program geliştirmek kadar önemlidir. Tasarım eğitiminde öğrenme ve öğretme diyalektiğinin öncelikli olduğu bu stüdyo ortamı, makalenin yazarları tarafından 2004-2005 öğretim yılında, İ.T.Ü. Mimarlık Fakültesi'nde 50 kişilik bir grup için yaratılmaya çalışılmıştır.

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[i] Referring to Kuhn's similarity relations learned from exemplars, an intellectual studio atmosphere is created through the perceptual powers of pattern recognition. Exercising such a power in the design studio in which dialectics of teaching and learning has a similar relationship as shifting images of duck-rabbit perception. This kind of shift leaves a large space for exercising puzzle solving, having pattern relations which give rise to additional claims about the role of reflection. The intellectual atmosphere created in the design studio is based on the premise that intuition and reflection might work together. It is obvious that intuition may be fed by reflection and its reverse; similar as reciprocal relations of other dialectics focusing on puzzle solutions.