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KEU ID NO.: 4404

OKTOBER 2012 - CONSULTANCY RESEARCH

"Swedish Modern was in much architecture of democracy, blond, open, light and accessible. It was far from the splendid and monumental symbolics of power and wealth from the history of Europe or Egypt. Not for Scandinavians was the Germany of Wagner and Schinkel and Speer, but that of Bruno Taut and of the Bauhaus." [1]

Ralph Erskin. Architecture in an age of scepticism. P 72.

<u>Index:</u>

<u>preface :</u>

This essay is the final requirement for the Engineering Union in Sulaimaniyah to become a consultant within the field of architecture. This essay is questioning the type of buildings and its relations to the use of glass in it. This essay is exploring the stream of architecture within the Modern and Post-Modern architecture. The book of David Harvey is the explaining the basics of the subject.
The essay should be a reflection of a research about a subject, which is close or inside the book of Harvey. The subject that I am writing about is transparency and its effect on architecture. Transparency was one of the main themes of the modern architecture and era.

Transparency has been always an issue for architecture and architects. As it is explained in the text I believe that a transparent building is able to create a social building and also distributing the programme of the building is the way to create the social and the transparent building, whether is it a transparent by meaning, literal or phenomenal transparent building. Well distributed programme is creating a social building without doubts and in turn social building is a transparent building by meaning. One of the ways to create that is the functional building creating a clear easy building for the elderly.

Introduction :

The word transparency literally (in the English language dictionary) means clear, honest, truthful, not vague, and easy to understand. If we look at the meanings of the word only and If we analyze the meanings of transparency and relate it to architecture, we might get the next ideas: Clear can have interpretation of a clear design and not difficult in a three dimensional or the two dimensional world. Honest, light and accessible architecture was the aim of the modern architecture with the idea of if I am able to see and have access to a space then I am able to control that space. Controlling a space can also make the architect to take the position of a design method. A design which is closed mostly is not accessible, monumental, and static and we are not able to penetrate it. From here we are involved to an issue which is much connected to design and transparency in architecture and buildings.

Not transparent buildings are mostly monumental buildings and although the scale plays a big role in monumentality of spaces but one of the main factors which makes building monumental is to be not transparent.

We all know that the issue of transparency was the idea of the modern era. The modern era architects tried to create spaces which were satisfying all of the needs of the meaning of transparency. During the period of the "new architecture" in the 1910s and 1920s, transparency was remarkable, a sign of modernity and progress that was not just technical, but also aesthetic and ethical. However the issue of transparency in architecture was developed from the late nineteenth century society because of few reasons and factors. The main help for introducing the issue of transparency was the technological development of that age which was helping to make large glass sheets. Although they were not able to produce in mass but also a good quality of glass was missing. On the other side transparency was used to endow the society and show clarity in the architecture.

The first reason which made the issue of transparency possible was the technological revolution though. Another main reason for making a transparent architecture was the methodology of transparent space in the time of modern architecture. If we are making transparent spaces that mean we don't have any secrets to hide and we are showing all of the details and corners of the space, which was suppose to be the reflection of the society.

Transparency has not always a positive effect in buildings, a translucent or "transparent", building can evok the feeling of disorientation or uncertainty by the users. A translucent skin that simultaneously reveals and masks an older building beneath it, cloth scrims and etched glass behind which silhouettes of bodies appear, layers of "transparent" glass that serve to disorient more than they reveal. A good example of this is uncertainity, like Vidler calls it in his book Architecture UNCANNY, is happening in the competition design of Rem Koolhaas 's for the National library of Frans in Paris. While Koolhaas wants to to show all of the inside by designing a glass cube, which is a transparency in a complex way. And the glass box is working as a crystal box and showing the surface. As a result we get reflectivity of the surface and leaves the user in an uncertain situation on the surface.

If we analyze the transparency we can classify it into two general ideas of transparency, Material transparency and spatial transparency. Material transparency began with the introduction of glass and mirror. The roots of transparency are going actually to a long time ago, to the age of the Romans where they invent the glass and the mirror and we know that the first mirror in the history was water. After the period where the Romans had reinvented the glass and the mirror, the use of glass was mostly for the window and there was not a big change of use in the glass till the beginning of the 20th century.

Theme:

The theme of the building is based on the assumption that a transparent building could be the key that can give the user the feeling of reattachment to the society and the distribution of the programme can help to create a social building vice versa is also possible.

Motivation Questions:

- why question

In which way can the elderly or the disable get the **Social satisfaction** and attach them back to the society.

- what question

In which way can a **transparent** building, which evokes the feeling of attachment to the society and the surrounding, satisfy the need of different users?

- How question

How can the **distribution** of the **programme** integrate the programme with the theme of the project and in turn organizing the building with the surrounding, or how and in which way can the theme be the simulator to organize the programme in it self and with the surrounding.

Architecture that satisfy the need of ELDERLY (Humanity):

There is anxiety in the most of the western societies about how they deal with the elderly people. The fact is that the government is looking for the ideal situation to host them and protect their rights. If we take The Netherlands as the example then we will be confronted with a very serious problem. In the last decade they discover that the age of the Dutch people is growing and the elderly population is increasing and in turn the society is getting old. The problem is then how and where to host them and how to satisfy their needs.

In general there is two way of dealing with the elderly housing and also elderly life satisfaction. There has been experiments with the housing that with involvement of the elderly self also. The first option of elderly housing is the integration process, in this variant there is also some sub division according to the degree of help that the elderly needs, but in general is to integrate the elderly with the society and that can be a house in a neighbourhood to the possibilities of one building only for elderly and getting all of the help from the government. Is also for sure that this variant depend on the health of the elderly.

In the second option of the housing is segregation, in this variant all of the elderly will be in their own place and forming together a community. The example of sun-city in the US is the most famous one. That is why, like always has been, the housing is a personal issue and there should enough possibilities for elderly to choose.

as a conclusion of the Anthropology text, I conclude the following facts:

1 – lack of social life of the elderly in the western communities and countries between themselves and their children's.

2 – lack of social life of the elderly between the elderly self and the community and their age mates. This could be the result of lack of social places....

"Over the past 15 years, OECD countries have come to recognize that their elderly population are already, or will be, the fastest growing segment of their populations in the coming decades. In recognition of these demographic facts, public and private sector planners with responsibilities for those that the full integration of the elderly population within their communities is the best way to insure the maximum life satisfaction of the elderly population of the longest period of time." [1]

The fact that in the western communities there is a lack of social life for elderly is known. The social life of the elderly is meant here about the interaction of the elderly with their own children, community and their age mates. To have a good view of the problem we have to argue the reasons and why that is happening. I believe that the lack of buildings which can accommodate the elderly daily life and also in the same time interaction with their fellow elderly is a crucial reason and it should be solved in an intelligent way which can also provide the possibility of integration of the building in the surrounding and in turn with the community (physically and mentally integration). It is a difficult task but there is the challenge to design a building which can satisfy all the needs.

Classifications of *Transparency* :

Adrian Forty discussed the issue of Transparency in his book "Words and Building" as a classification of transparency and not really how we have to deal with it in our design or how other architect should refer to it. The three types of transparency according to the book of Forty is as follow.

Transparency is to be achieved in **three** ways:

1 **- Literal** *transparency*:

"Meaning pervious to light, allowing one to see into or through a building, was made possibly by the development of frame construction and technique for fixing large areas of glass.
The condition of the present age is that it is now possible to have an independent wall of glass, a skin of glass around a building: no longer a solid wall with windows. Even though the window might be the dominant part – this window is the wall itself, or in other words, this wall is itself the window." [2]

2 **- Phenomenal** *transparency*:

"The apparent space between solid objects – was the subject of two articles written by Colin Rowe and Robert Slutzky in 1955 – 56 their discussion of it was introduced by a question from Gyorgy Kepes 's Language of Vision 1944.

If one see two or more figures overlapping one another, and each of them claims for itself the common overlapped part, then one is confronted with a contradiction of spatial dimensions. To resolve this contradiction one must assume the presence of a new optical quality. The figures are endowed with transparency: that is they are able to interpenetrate without an optical destruction of each other." [3]

3 - *Transparency* **of meaning**:

"Sontag says, by making work of art whose surface is so unified and clean, whose momentum is so rapid, whose address is so direct that the work can be just what it is.
Others have called this property by different names: the American sculptor Robert Morris called it 'presentness' 1987, and Donald Judd 'Directness". [4]

These classification of Transparency is from the book of Adrian Forty, and I will explain more in detail and the relation of them to my projects in small chapters.

"Can there be in visual space a simultaneous perception of two objects one behind the other? When i look through a transparent object do i really see complete, unbroken surface? Or this is the case: i see only parts of the nearer object, and, through gaps in its surface, parts of the other object and from these fractional sections i mentally construct the two surfaces." [5]

A quote from the text of *Colin Row and Robert Slutzky,* explaining the literal and phenomenal transparency and the significances of the example of the architecture of Le Corbusier. The perfect example of literal *transparency* according Row and Slutzky is the building of *United Nation* and the phenomenal example of *transparency* is the *Algiers-skyscraper* project for his villa at *Graches.* In the skyscraper of Algiers Row is talking about the significant of the building and how that is related to transparency.

"The published drawings of the Algiers block show a tower whose organisation may be apprehended in a variety of ways:

1 – The eye may be engaged by three horizontal bands which divide the structure into four areas.

2 – If these areas overlooked and become recessive the eye may become absorbed with the cellular pattern of the *brise-soleil* and this pattern will gradually be felt to extend itself behind the horizontal bands.

3 – As the disruption of the *brise-soleil* pattern to the left of the façade becomes apparent. The observer will construct a further figure which, in mediating the two *brise-soleil* grids, appears as a kind of channel cutting open the façade and connecting the *pilotis* of the lower floors with the incidents upon the roof.

4 – when this new figure is discovered to be interwoven with the three central floors of the building, the eye (or the mind) is compelled to provide further explanation and the observer comes to see the composition as a kind of E-shaped overlay imposed upon the "neutral" background provided by the *brise-soleil* " [6]

In this text we observe the façade of the building and we already construct an image of the building in our mind and once we have the image then we understand the whole.

In my work I can give an explanation of the façade which is working in such away which one is able to imagine and may be construct an image of it. The façade of my building is two floor high and on the places of the staircases is setting behind the material of the façade is also two different material natural stone in the front and brickwork behind. It is like two layers overlapping each other. In the front part I have openings (windows) in a random pattern on the ground floor façade I have wide windows emphasizing that there is more public accessible activities and on the second layer (the higher level) I have more narrow windows indicating the more private spaces behind them. In the behind layer I have big boxes creating the contrast between the front and behind layer.

Anthony Vidler described transparency in architecture through modern, post modern and now. In his description we can conclude that transparency is and was always an issue for architects and theorists to discuss. In the beginning of the chapter Transparency Vidler discusses the relation between outside and inside in the work of Le Corbusier which is very important and may be significant for his architecture.

"*Siegfried Gideon observed in his* Bauen in Frank Reich of 1928
The houses of Le Corbusier define themselves neither by space nor by forms: the air passes right through them! The air becomes a constitutive factor! For this, one should count neither on space nor forms, but uniquely on relation and compenetration! There is only a single, indivisible space. The separations between interior and exterior fall." [7]

The relationship of inside and outside is significance for especially of modern architecture. Transparency opened up machine architecture to inspection, its functions displayed like anatomical models [8].

In this case the walls are not hiding any secretes and the issue of social morality is coming to the front whether the inhabitants of a certain building should or not be seen and that is what depends on the typology of the building. In my case the building is a care centre, in addition to what is written above about the lack of social life of the elderly and integration of the elderly with their own age mates and also the surrounding, the issue of transparency is making the building more intrusting in terms of the relation of the elderly to the outside world and showing the daily life of the elderly to the public. The building on the ground floor is more public activities and that is why choosing for a transparent façade will not be a bad choice.

Gyorgy Kepes tried in his book to explain the use of different transparent material is the new way to create different kind of vistas inside the building itself but also from outside to inside and vice versa. He also explain the role of transparent materials making the relationship of outside inside stronger.

In the time of modern architecture, the architect was trying to display the inside by using the materials, vistas from inside to outside and vice versa, but the most important was the clarity of the design task and no ambiguity in the design which is one of the characteristics of modern architecture. As all of the modern architects tried to create clear design and to have a strong relationship between outside and inside. The clarity of the design I think is also transparency which is explained by Adrian Forty and classifying it as transparent by meaning.

Gyorgy Kepes also explained the possibility of using not only transparent but may be also translucent materials and the invention of the x-ray was made possible the we can see through other materials also and that only is supporting the idea of phenomenal transparency by Row and Slutzky, which says that even if we are not able to see the behind layers we are able to construct an image of it.

" Contemporary architecture utilizes the transparent quality of synthetic materials, plastics, etc., to create a design that will integrate the greatest possible numbers of spatial vistas. Inside and outside are in close relationship and each view points in the building offers the widest visible comprehension of space" [9].

" X-ray photography opened up a new aspect of the visible world. Things hitherto hidden from the human eye could be penetrated and made visible. Here the transparency has a new meaning, because the depth of the object is also evaluated by its optical density" [10].

" The new plastics allow a new type of visual expression to develop. Glass-like sheets, pliable, can be curved, convex and concave. They can perforated so that light and pigment will be fused into a new unity. Artificial light sources (spot lights, moving lamps) can continuously change the composition. This kind of picture is most probably the passage between easel painting and light display, a new type of moving picture" [11].
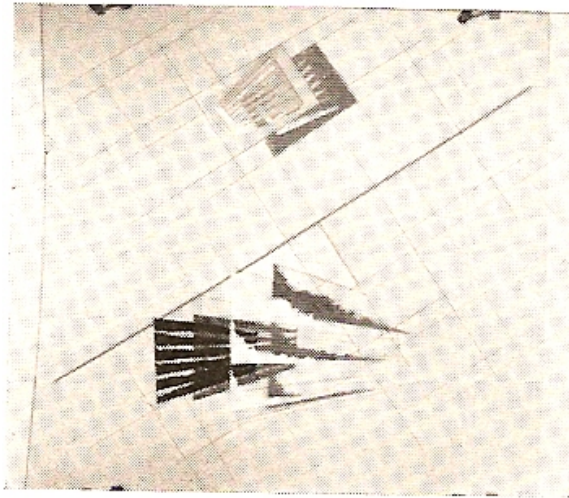
In the early years of modern architecture (1920 's)and Bauhaus Lazlo Maholy-Nagy described using transparent materials and creating different composition and changeable composition.

Ralph Erskin is appealing for the right role of the architect. A real architect is the one who can design a building which satisfy the need of the users. The users can be the inhabitants and also the people which are working inside it. We have to be aware that we have to deal with different kind of target people in the same time and in the same building. This will lead us to a true architecture which could be, according to Erskin, the functional architecture.
I believe that the functional architecture is transparency and that is transparency by meaning. In my building a functional architecture could be also the right choice. The elderly inhabitants should be able to recognize the building and easy to find the places inside the building. In my design I have a central corridor which is connecting the whole parts of the building and the large hall is in between the corridor forming symmetry in the north-south axe.
" The role of a creative architect is poetically and truly to satisfy human needs, to do this with honesty in form and technique" [12]
The concept of functionalism
" It must be clearly understood that functionalism for me is no style but a method of thought, a work-process which can increase our understanding of the activity in which we are involved. By no means should it be identified with the limitations of understanding or with the plans and the styles of its earlier years" [13].

Material and Spatial Transparency:

As I clarify in the introduction, the notion of transparency is to be classified into two major types, Material and Spatial transparency. Material Transparency is about using transparent materials which is producing literal transparency. Material Transparency (Literal Transparency) is meaning pervious to light, allowing one to see into or through a building.

Material transparency means actually to see through material, that mean is clear from the one to the other side of the material. If we use transparent material in a building then we will be able to control the space. Although this might be understood as spatial transparency but it is made possible through material transparency.

Bauhaus was one of the first schools which made use of the idea of transparency, while Lazlo Maholy-Nagy was experimenting with different new materials to show the transparency and the use of transparent materials in art and building creating different composition and changeable composition. A quote from the book of Lazlo Maholy-Nagy, 1926, shows how far they were at the Bauhaus with using the new transparent materials.

"The new plastics allow a new type of visual expression to develop. Glass-like sheets, pliable, can be curved, convex and concave. They can perforate so that light and pigment will be fused into a new unity. Artificial light sources (spot lights, moving lamps) can continuously change the composition. This kind of picture is most probably the passage between easel painting and light display, a new type of moving picture". [1]

After Maholy-Nagy there were more researches done concerning the notion of transparency among them Gyorgey Kepes and Colin Row with Robert Slutzky, Which I will explain later more.

Spatial transparency is to be classified into two types. The first one is phenomenal transparency and the second is transparency by meaning. Phenomenal transparency means to have an image of an object, building or some two dimensional surface without may be to see the image of those named also. Spatial transparency is the transparency which might be created by material transparency or by designing a clear building which is clear in use. Like what Colin Row wrote in his essay a design which can create a clear mind image of the building to the user. Transparencies by meaning mean that if we use a building for a small period of time then we have to be able to use it optimally and without any difficulties.

One of the other investigations about the nature of transparent material and how it can be used in architecture and art is done by Gyorgey Kepes. "Contemporary architecture utilizes the transparent quality of synthetic materials, plastics, etc., to create a design that will integrate the greatest possible numbers of spatial vistas. Inside and outside are in close relationship and each view points in the building offers the widest visible comprehension of space" [2]

Kepes also discovered the essence of the X-Ray Technique and the relation of it to architecture. The notion of transparency in this case is mixed between spatial and material. While the X-Ray is showing the two dimensional of the three dimensional real world and all of that is printed on a transparent material which makes people see some parts of the body which is not visible for the normal eye.

Spatial transparency also in itself can be classified into two type, the first one is phenomenal transparency which is to be understood as a clear image of a work or elevation; or if our mind might be able to create an image of something which we see only partially. An example of phenomenal transparency can be found in two overlapping shapes while we see the front and a part of the behind but in our mind we are able to construct the fully image of the second (behind) shape.

A quote from an article written by Colin Row and Robert Slutzky shows the relation of phenomenal transparency in architecture : "If one see two or more figures overlapping one another, and each of them claims for itself the common overlapped part, then one is confronted with a contradiction of spatial dimensions. To resolve this contradiction one must assume the presence of a new optical quality. The figures are endowed with transparency: that is they are able to interpenetrate without an optical destruction of each other." [3]

The second type of phenomenal transparency is transparency by meaning. In this last notion we are discussing the spatial quality of a building or an object of the meaning of a certain words or article. A project which is so clear for the user that we can use it from the first time we are inside the building is

a transparent quality for the user. This last quality was used in the modern architecture buildings where transparency was one of the main themes to develop architecture. The meanings of some words or articles are so obvious that we will understand without to spend a lot of time init to understand. A quote from an article written Adrian Forty in his book "words and building" shows the relation of phenomenal transparency in architecture: "Sontag says, by making work of art whose surface is so unified and clean, whose momentum is so rapid, whose address is so direct that the work can be just what it is". [4]

The effect of Transparency in Architecture:

I will attempt to explain the effect of transparency in architecture in a few examples and how theorists were or are thinking about that effect.

To have a close relationship between outside and inside is creating an attempt to design transparent building. I believe that a transparent building is and was the way to create that relationship between out and inside and to create a social accessible architecture. A transparent building mostly is giving the feeling of light building to the user, and architects are using that quality to produce a good building which the light and the air can pass through it. One of the most significant examples of transparent buildings is the villa design of Le Corbusier, while Anthony Vidler discusses the relationship between the inside and outside which falls. [6]

If we create a close relationship between out and in-side in a building or in other words if we design a transparent building, we can evoke few kinds of feelings also with that. The visual interaction in a transparent building is very strong so that the social activities, this if is needed, could happen spontaneously without forcing the activities. And if the social activities happened then the physical relationship between the two sides will be much stronger and if we try to make this happen gradually then we can have a very good architecture. Gradually physical connection meant to be making the mentally use of the building easier by step by step going from inside to outside and vice versa, which is also a transparency by meaning.

While if we have a transparent building is also possible that we are displaying the inside side of the building and create the inside-out relationship or the vice versa this might be different in other solid buildings which leaves the person or the viewer on the surface of the building and not letting the visual penetration. This transparent quality is evoking the feeling of belonging to a building or to a place and tells us that we are a part of the whole. The gradually relationship and the inside-out relationship is also giving us a feeling of democratic space. A democratic space, I think, is to be achieved in a transparent building which has nothing to hide and the walls are revealing all of the corners of the space but also the gradually connection makes things happening in sequence and if do have the first step then we might have the second and so on.

We have here a comparable situation with the platonic ideas of real and ideal, while the visual relationship could be the ideal and the physical connection is the real because we are experiencing the space and in the visual one we can only see it and it might makes us to think that this is better. In painting of the Renaissance we have those ideal and real qualities in the painting of Rafael while he was painting the ideal woman in his mind which might not exist also.

Depending on the type of the building the notion of transparency can be used because transparency is giving a feeling of public activities which are used and showing it to the outside. If we have a kind of private programme in a building we have to be careful of not showing everything to the outside world but if we have a political programme for designing then if we show the inside side of the building then we may attempt to make things clear for people. May be we have to use transparent design not only in architecture but also in urban design to create readable cities or areas.

The common areas between Architecture and politic [5]:

Architecture is one of the fronts which can show the politic, although the politic shouldn't affect architecture. Politic or politician, I believe, shouldn't be the main reason to make a certain style of architecture. However after the Second World War the government of West Germany wanted to make an architecture which is representing the state of new Germany. This new Germany was the state of transparency, clarity and that of hiding nothing to the folk and the whole world.

After the unification of the West and East Germany, the both government also agreed that the new architecture should represent the new United Germany which has nothing to hide from the world. Especially those building which are representing the government was meant to be light and transparent buildings. The major reasons of transparent state representative buildings were the Second World War. While in another countries with monumental classic and not penetrable buildings were to represent the state. Monumentality and classic architecture are the opposite of transparent modern architecture while both are representing the state and affected by the politics.

In Germany politics tried to make the state buildings, like the parliament, to be accessible buildings for common peoples which can see and listen all of the conversation of the government. An example of the city house which is showing inside the building and letting people to see what happens inside is the Town Hall of Aalto in Saynatsalo. Aalto had suggested a mystical relationship between public, legislators and the earth at Saynatsalo. Here is a tiny town hall, the smallest possible, set on an outcrop of rock and built round a small green court. The perfect little brick acropolis is in the middle of the forest, and its mullions echo the rhythms of the surrounding dark tree-trunks. From the court, the activities of the councillors and their staff can be seen through glass walls: electors are able to see whether or not their representatives are getting on with their work, and how they are going about it. Here, in the middle of the forest, is surely a monument to the democratic process. This Town Hall is a monumental building for democracy and we could call it a public monumentality is on the top of its achievement.

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