

A Study on the Spatial Effect of Material and Light: Focusing on Peter Zumthor's Projects

- Bruder Klaus Chapel and Kolumba Museum -

피터 Zumthor의 작품에 나타난 재료와 빛의 공간적 영향에 관한 연구

- 부르더 클라우스 채플과 콜롬바 뮤지엄을 중심으로 -

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Abstract 최근의 현대 건축에서는 재료의 물성과 구축성이 두드러지는 프로젝트를 많이 발견할 수 있다. 이러한 경향의 배경에는 다양한 요인들이 있을 수 있다. 그 중에서도 공간성(性)에 대한 근본적이고 화귀가 중요한 바탕이라고 할 수 있다. 피터 Zumthor의 건축은 현란한 조형적 효과, 표현만을 위한 기술적 장식을 사용하지 않는다. 대신 그의 건축은 장소와의 관계, 문화적 context 상에서의 맥락, 그리고 공간의 근원적인 경험을 주요한 매체로 사용한다. 그리고 이러한 특수성은 대체적으로 빛과 재료의 고유한 적용으로 나타난다. 이는 장소와 문화의 특성을 관습적인 형태나 화려한 표현으로 재현하는 것이 아니라 '공간감'의 구현으로 구축하는 방식이다. 본 논문은 피터 Zumthor의 건축에 나타나는 빛과 재료의 구축 방식, 그리고 공간의 경험에 대하여 살펴본다. 그의 건축 구축 방식은 일견 간단해 보일 수도 있으나 실제로는 프로젝트마다 고유한 빛과 재료의 적용과 텍토닉(tectonic)이 내재되어 있다. 본 연구의 목적은 이러한 점들을 자세히 살펴보고 그러한 구축방식이 궁극적으로 어떻게 공간의 경험과 관계를 하는지 고찰하는 것에 있다. 구체적인 사례는 Bruder Klaus Chapel과 Kolumba Museum으로 한정된다. 프로그램은 다르지만 빛을 사용하여 관람자의 공간경험과 공간인지가 어떻게 형성되는지를 다루면서 결론 맺는다.

Keywords 재료, 빛, 공간적 효과, 피터 Zumthor
Material, Light, Spatial effect, Peter Zumthor

1. Introduction

1.1. Research Background and Objectives

In the last few decades of this century, the main orientation in architecture seems to have been in the more technological, systematical nature, which is often realized in very large projects. Many large-scale projects in the recent years, produced visually striking and both attention drawing and attention seeking results. However, with Peter Zumthor as a laureate of the Pritzker Prize in 2009, there seems to be a realization of a new awareness in the more back to earth design that establishes a level of communication beyond the visual or scale. It is apparent that with the advancement of technology, the general trend in design has become very 'visually oriented' which

leaves the other senses, such as smell or sound very low in the hierarchy. Peter Zumthor's projects, however, describe a different aspect of design which is a design with a deep sense of sensibility. By selecting two of Zumthor's projects, the aim of this study is to analyze and discover how the spatial ambiance is achieved by the use of material and light that is so distinct in his design.

1.2. Scope of Study and Method

In this study, a general introduction of Peter Zumthor's design approach and philosophy will be followed by a more in depth analysis of two of his design projects. These projects are Kolumba Art Museum, Germany 2007 and Bruder Klaus Chapel Germany 2007. These projects will be analysed and compared in terms of the use of materials and

construction method, the effect on the lighting quality realized by such construction method and finally the ambiance created. The spatial effect of the light will be analysed in close association of the circulation or the movement of the viewer.

2. Zumthor's architectural philosophy and design background

2.1. Architectural Philosophy

Peter Zumthor(1943) a winner of the Pritzker Prize in 2009 was born a son of a cabinet maker in Switzerland. As it is already well known, he was initially trained as a cabinet maker but extended his interest to architecture. However, it is evident in all his architectural projects that he deals with his materials, details very closely just as a cabinet maker would when making a piece of furniture. He seems to have an exceptional ability in capturing the essence of the material and translating it into aesthetic tool in architecture.

He emphasizes the importance of material in architectural experiences and memories. In describing architectural experiences, he relates this to 'memories' that describe the feeling of a certain material when held and the different smells in a certain room. In his book, *Thinking Architecture*, he describes a door handle in his aunt's house that led to a world of different smells and moods. The experience of walking on the gravel and the sound that is made, all take important part in the memory of the space.¹⁾

The materiality of the space arouses an individual's experience and brings together one's memory that makes it a tactile experience. Peter Zumthor points out that the contemporary architecture seeks only the visual, which is the fastest way of experiencing, thus excluding the other senses. However, his argument of architectural spatial experience should be of all senses that will establish a memorable experience with the users. Thus he emphasizes the sensory aspects of architectural spatial experience.

For each project he visits the place and forms a physical experience and from the experience of the physical appearance he can glean the history of the

location. By having a physical experience, he can also determine the needs of function and use: what does the place want, what does the place ask. It is interesting to note that Zumthor emphasizes what the 'place' wants, not what he wants to do as an architect.

For Zumthor, the consideration of the site takes an important role in design. His architectural projects seem to 'become' a part of the site, whether in the use of material or in its suitability to the local surroundings. In the case of *Therme Vals*, the main material used is the local stones and the buildings are half buried in the hillside, which makes it completely connected or belong to the site. One of his passionate desires in building design is that, in time, the buildings grow naturally into being a part of the form and history of their place. He wrote that the new building should embrace the qualities that can enter into a meaningful dialogue with the existing situation.²⁾

In the interview with Nico Saieh in 2010, Zumthor points out that he does not approach his projects in an academic manner, with complex reference and architectural philosophies, but rather in a physical manner. He also argues that architecture is not a language, but something for living.³⁾ For Zumthor, the strong connection between reality and the living is the most important aspect which orient his work towards the concrete, physical architecture, not theories or abstraction. 'For me, the principal theme isn't an abstract idea, but a physical one. The architecture which interests me is concrete architecture, not architecture as an abstraction. So there is already a body: the idea is a real body'.⁴⁾

2.2. Projects' Design Background

From many of Peter Zumthor's works, the following projects illustrate the diversity of his design typology but at the same time the continuous exploration into light and material.

(1) *Thermal Vals*, Switzerland, 1996

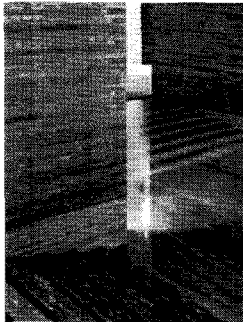
2) Peter Zumthor *Thinking Architecture*, Birkhauser, Basel, Boston, Birlin, p.17

3) Peter Zumthor *Thinking Architecture*, Birkhauser, Basel, Boston, Birlin, p.17

4) Nico Saieh, *Multiplicity and Memory: Talking about Architecture with Peter Zumthor*, Archdaily, <http://www.archdaily.com/85656/multiplicity-and-memory-talking-about-architecture-with-peter-zumthor/2010.11.02>

1) Peter Zumthor *Thinking Architecture*, Birkhauser, Basel, Boston, Birlin, pp.7-8

The Thermal Vals, in Switzerland is probably the key project through which Zumthor's projects started to receive much global attention. In this project, Zumthor is said to have re-interpreted the notion of



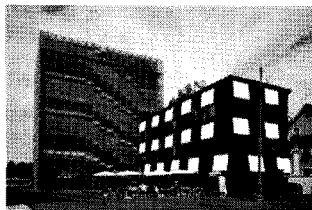
<fig 1> Thermal Vals, interior

bathing as a 'religious' act, a purification process through the emersion in the water and thus becoming a reminder of 'baptism' as well as an experience of being in a cave that has been transformed through architecture.⁵⁾ It is also known that Zumthor insisted on not having any clocks in the spa, as he

believed that time should be suspended while in the baths. However, two small clocks were mounted on brass posts after two months of opening, as a result of client's pressure. The building consists of 25 volumes in a series, built in 60,000 blocks of local Valser Quarzite slabs create an overall atmosphere of solidity and being deeply rooted in the locality - not only in terms of its physical location but also in terms of the use of local materials.(genius loci) The sequential experience of the space connects the users with their own memories and experiences that this project has become a prime example of how the sensory potential can be continuously related with the users through the atmosphere created by the material's haptic, olfactory and even the taste sense.

(2) Kunsthaus, Bregenz, Austria, 1997

This museum is located not far from the lake of Bregenz in a densely built city center. In contrast to the solidity of Thermal Vals, Kunsthaus appears very light with the extensive use of etched glass sheets for the four facades. The structural system for the facade

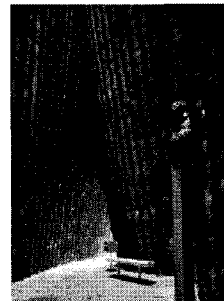


<fig 2> Kunsthaus, Bregenz, exterior view

is independent from the actual building which is in concrete. This was a winning entry in a design competition and also the only design proposal which included an open public plaza.

The museum building and the lower administration building frame the plaza which became an attractive meeting point for the locals. The museum with its outdoor plaza has become a new transition area between the tranquility of the lake and the busy city.

(3) Bruder Klaus Chapel, Germany, 2006



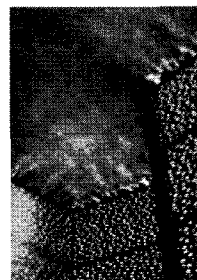
<fig 3> Bruder Klaus Chapel, interior

Located in a field in the farming village of Wachendorf, Germany, this is an unusual 'private' chapel for a family of farmers who were actively involved in the construction process.

The main mass is in cast concrete, which envelops a sort of a cave-like volume. From the outside, on approach, the building appears as an odd triangulated concrete block. However, through the triangle door the interior comes across as a surprise.

(4) Kolumba Museum, Cologne, Germany 2007

Kolumba Museum houses the archdiocese's art collection and shares its site with the ruins of a Gothic church that was bombed during the World War II and with a chapel by Gottfried Bohm built in 1950s. It is an interesting place of a combination of architecture which allows the visitor to experience two millennia of western culture in one building.



<fig 4> Kolumba Museum, interior

A discreet entrance opens onto the galleries that are distinct and accommodates the art in a custom made manner. But just as the art, Zumthor's architectural expression is sensitive enough that there is a feeling of art were made for the rooms. There are seventeen galleries of different proportions and different lighting conditions on three floors. Kolumba allows the visitors to immerse themselves in the presence of their memories and offers them their own experiences on their way.

3. Use of Materials

3.1. Materials and Architecture

The relationship between architecture and materials is very complex and cannot be regarded separately

5) 백홍렬·박길동, 피터 Zumthor 건축에서 빛의 구축성에 관한 연구, 대한건축학회 학술발표논문집 제21권 제1호, 2001.4.28, p.400

from the beginning of the history of architecture. However, often the concepts of use of materials have been more related with the structure or an element that takes a supporting role of the form making. Yet, in fact, the history of architecture is also the history of material development, invention and technology. Whenever there was advancement or a discovery of new materials, a new method of working, it became a new turning point in the development of architecture. An indication of a new possibility and a new form making always came with the discovery of the use of materials.

Before the industrialization and the development of transport, the building materials were always found locally. Stones came from a convenient quarry, timber from the closest forest and bricks baked using local clay, which made the building inevitably connected to the place, not only in terms of geographical connection but also in terms of psychological connection. With increased industrial efficiency and economic interest, people began to look for cheaper materials. But at the same time the close connection between the building and its place became lost. The building no longer had the geographical and psychological links with its locality.⁶⁾



In the current architectural climate, and the buildings are built very quickly which generally results in the debasement of materials. Materials and buildings have particular qualities that are altered with time. In terms of spatial experience, it has become less tactile, but more visual. In Zumthor's projects, he has a deep understanding of the nature and language of materials. Through his materials he creates a sensuous spatial experience that brings sight, touch and smell together. 'I see a rusty metal of the door, the blue of the hills in the background, the shimmer of the air over the asphalt... Everything I see, the cement slabs that hold the earth, the wires of the trellis, the chiseled balusters on the terrace, the plastered arch over the passageway they all show traces of wear, of use and dwelling. And when I look more carefully, the things I see start to tell me something about why, how and for what purpose they were made. All this comes to light, or is concealed,

within their form or presence... I like the idea that the house I build contributes to the atmospheric density of a place, a place which its inhabitants and passers-by will remember with pleasure'.⁷⁾

3.2. Peter Zumthor's selection of Materials

He wrote in his book, 'Peter Zumthor Thinking Architecture' that 'I believe that they(materials) can assume a poetic quality in the context of an architectural object, although only if the architect is able to generate a meaningful situation for them, since materials in themselves are not poetic'.⁸⁾ He uses the materials with a thought that is beyond the physical qualities or the superficial qualities, he delves deep into their tangibility, smell, and acoustic qualities and attempts to bring out specific meanings of certain materials in his buildings. He writes that 'If we succeed in this, materials in architecture can be made to shine and vibrate'.⁹⁾

<Chart 1> Zumthor's choice of materials and methods of construction

Projects	Image	Main materials used	Method of Construction
Bruder Klaus Chapel, Germany, 2006		Cast concrete with rammed earth	Cast in concrete around a cluster of 120 tree trunks which were burnt away.
Kolumba Museum, Germany, 2007		Specially manufactured Grey bricks (24x21.5x4cm)	Masonry construction

3.3. Construction Methods

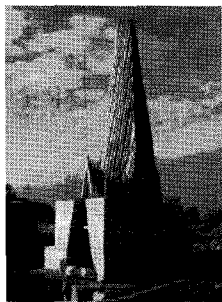
Peter Zumthor employs many different construction methods that is most appropriate for the given projects. Sometimes, the construction method is quite unusual, in the case of Bruder Klaus Chapel for example. The choice of materials and the construction method compliment each other. The pitched walls were initially formed by 112 spruce trees, forming a wigwam, <fig 9> that came from the client's farm and were slowly burned away, leaving blackened traces in the thick concrete. The undulating walls lean towards each other forming an teardrop oculus that is

6) Catherine Slessor The Architectural Review. London: may 2000 Bol. 207, Iss1239, p.42

7) Catherine Slessor The Architectural Review. London: may 2000 Bol. 207, Iss1239, p.42

8) Peter Zumthor Thinking Architecture, Birkhauser, Basel, Boston, Birkin, p.10

9) Peter Zumthor Thinking Architecture, Birkhauser, Basel, Boston, Birkin, p.10



<fig 5> Bruder Klaus chapel, under construction

open to the sky. The mass is made of 24 layers of poured and rammed concrete.

In Kolumba museum, Zumthor wrapped the ruins of the chapel and the museum in a perforated brick facade. The biggest volume that house the archaeological remains, has the double layered perforated walls in grey bricks(24x21.5x4cm) that

were specially manufactured for this project.

4. The spatial effect of the light

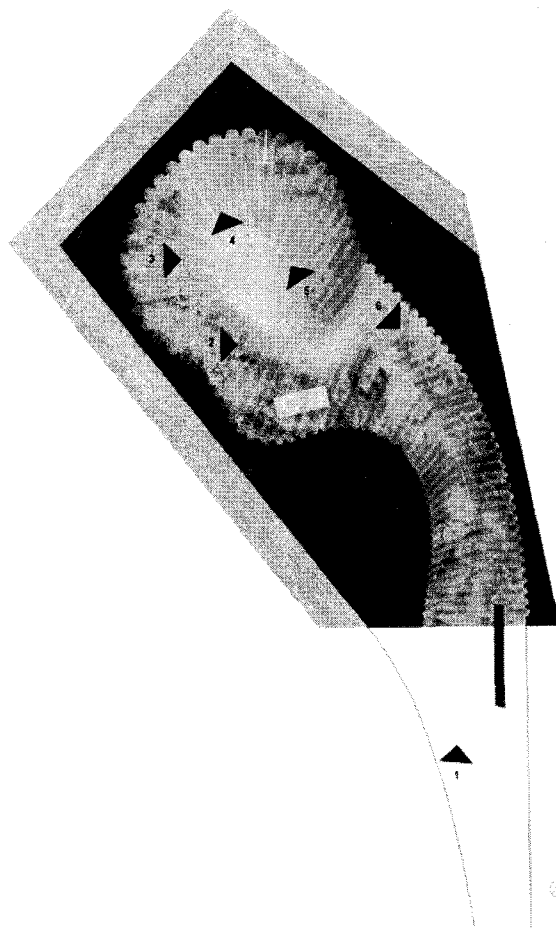
4.1. Use of light in Peter Zumthor's Projects

The topic of light in architecture is an enormous one that deserves to be studied in greater depths. The role of light in architecture, however, ranges from the cognitive to the poetic. In Zumthor's he uses the light for the latter. The ambience created is sensuous and becomes a poetic phenomena that causes a more emotional arousal that seems to touch the deepest part of the memory or even the soul. He is a master at how to catch a certain type of light, or capture a piece of sky and most carefully guide the light into the space, composed of material and surfaces. In doing so, some parts become extremely dark, some very bright and others change their characters throughout the day. The method is which he composes light in each project is unique which ranges from focused light to scattered and dimmed light. Henry Plummer's article on Building with light, he wrote, 'Even in its simplest form light is the most spectacular experience of the senses, with a restless intensity that causes static forms to leap to life at a perceptual level. The power of light to transform space and matter, from something inert and dead to something abundant with spirit, occur as if by magic, passing a spark and vitality to the darkened mass of things'¹⁰⁾, can be applied to describe Zumthor's projects.

In all of Zumthor's projects, the effect of light has a great impact. To a certain degree, the light plays a more visible role in the spatial experience, than the

physical forms of the space. In each project, he has devised a special ambience that evolves with the time and the aging of materials.

In Bruder Klaus Chapel, the light is introduced mainly through the oculus and very subtly through the small bottle-glass portholes which are embedded in the concrete wall. There is a shallow pool of water,



<fig 6> Bruder Klaus Chapel, Plan showing the positions of the camera







on a cast lead floor where a central alter might be, formed by rain and snow falling through the opening. The light from above is gently reflected in the pool of water.(camera position #5)

The textures of the walls and the quality of light from above as well as the wind and the rain create a somber spatial experience that is clbeing 'religious' and 'spiritual'.(camera position #2)

What is equally important as the light is the darkness, in this project, the single opening about 12 meters high surrounded by dark solid mass illustrate this well.(camera position #3) The dark walls with shimmering glass plugs bring to space an aura of

10) Henry Plummer, Building with Light, Light and Architecture. Architectural Design Magazine, London, 1997

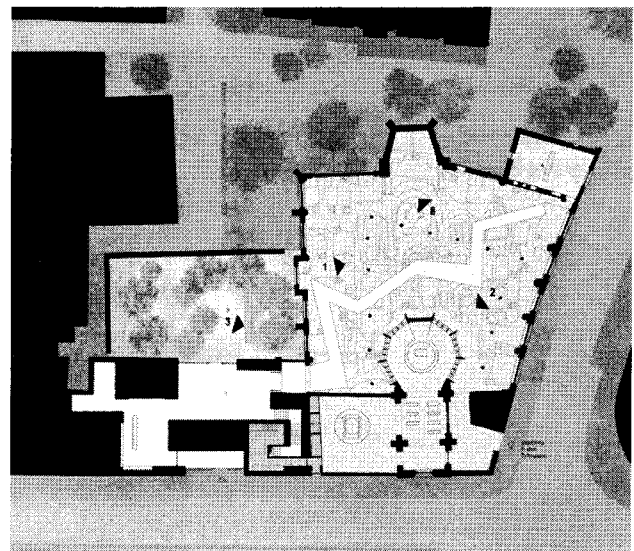
<Chart 2> Spatial Effect of the light in Bruder Klaus Chapel

Position No. & image	Design Concept/ Main constituent/ Perception	Material & Envelope	Characteristic of the light	Spatial Effect of the light
1 	Light revealing the form/ Concrete mass/ Perception of Form	The layers of the concrete are clearly visible, illustrating the method of construction. It has a monumental exterior quality with the surrounding landscape.	Daily changing light condition emphasizes the differently angled surfaces thus enhancing the perception of the form/ mass	On approach, the solid mass appears like a monument in the landscape, with a single opening which contrasts in dark shadow.
2 	Light suggesting movement and connection/ Curved and leaning walls/ Perception of space	The rough textures of the walls are heightened by the color and the slope of the surfaces. The length of the passage is also lengthened by the curve.	The light on the surface of the curving walls suggests movement into the center. The texture of the walls are emphasized.	The leaning blackened walls create a passage into the space. The light is introduced from above and through the door.
3 	Light forming a central focus and territory/ Single opening/ Perception of space	The tapering volume towards the opening makes it appear further away than it is in reality. The lines in the walls focused on the oculus emphasizes its presence.	The light falls directly from above, marking the central space. It connects the visitor to the light, sky and the heavens.	The small opening, towards the sky allows light, wind and rain into the space. The single ray of light which is very dream-like, contrasts with the solid qualities of the enveloping walls.
4 	Light forming a decorative, visual element / Glass plugs and solid wall/ Perception of space	The dark color of the walls and the shining crystal plugs create a contrast.	The shimmering light through the glass connects the space, deeply surrounded by concrete wall to the outside world.	Over 300 holes created by shuttering ties, filled with crystal plugs transfers light through the thickness of the concrete walls.
5 	Reflected light creating an amusing ambience / Water and concrete wall/ Perception of space	Solidity of the concrete and the reflection on the water make almost 'cave' like space that is removed from the context of the landscape.	The light that is reflected on the water is in constant movement which contrasts with the solidity and the heaviness of the concrete.	A shallow pool of water, directly below the oculus, created by collection of rain or snow, reflects the light back on to the curved walls.
6 	Light forming movement and direction/ Concrete wall, lead floor and doorway/ Perception of space	The textures of the concrete - reminiscent of the wooden trunks and the lead floor create a somber, muted and heavy atmosphere.	The light through the doorway along the line of the curving wall directs and generates movement.	The texture of the hand poured lead floor, gently disperses the light from the doorway.

mystery and induces space to become an area for contemplation that is totally removed and isolated from the context.(cameral position #4) The overall atmosphere is that of being in the most intimate and most protected place on earth, almost being in the womb again.

The quality of light in Kolumba Art Museum, Cologne, Germany is totally different from that of Bruder Klaus Chapel. The different spaces within Kolumba Museum have different qualities of light in order to accommodate ancient remains or modern collection of art. The overall textures of the materials are more controlled than that of Bruder Klaus Chapel and the juxtaposition of different materials and textures play an important role in the quality of light of the space. In the main volume on the ground floor, the light penetrates through the numerous perforations in the walls and diffused by the second layer of the wall, thus creating a mystical ambience which connects the historical past to the present day museum. <fig 7> showing camera position #8

When one enters the museum on the ground floor, one is first surprised by the darkness of the main exhibition area. Then gradually after adjusting to the level of luminosity, one can start to appreciate the sparkling qualities of the light through the double layered walls

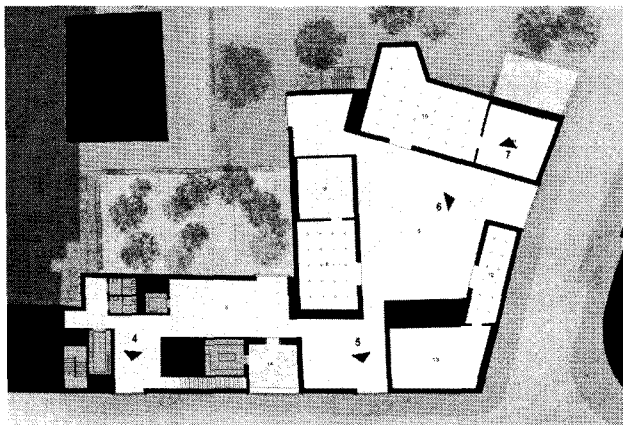


<fig 7> Kolumba Museum, Ground Floor – showing the positions of the camera

and the controlled artificial lighting that focus on the ancient remains. The circulation in this area is on a raised footpath that directs the viewer in a zigzag manner across the space. <fig 7> camera position #1

In a similar way to the experience of Bruder Klaus Chapel, when one stands on the footpath looking at the light falling on the walls and remains and the textures of the old cathedral and the new museum, the experience is almost spiritual. The space that has been composed of parts from different eras sharing the same source of light somehow makes the spatial experience which transcends time period of many centuries. <fig 7> camera position #2

The courtyard, which is almost like a secret garden hidden behind the volume of the Museum, composes a different atmosphere from that of the interior. It is the reversal of the interior. The experience, nevertheless is tranquil and composed. The materials of the walls from different periods are clearly seen,



<fig 8> Kolumba Museum, Second Floor - showing the positions of the camera




but does not suggest anything of the interior, which helps to maintain the interior experience as a surprise.

The new addition of the Museum is a complete contrast to the ground floor. The new galleries are composed of white wash walls with simply treated concrete ceilings. Natural light is introduced through the large windows at an elevated level, covered in translucent glass, thus diffusing the incoming light. <fig 8> camera position #7. At other moments the large openings appear at the end of the staircase, so that the visitor will meet the window as he/she reaches the second floor. This window is covered by a layer of translucent curtains that becomes a sensuous boundary that sometimes reveals the view of the town outside. <fig 8> camera position #4.

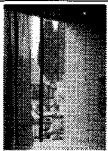
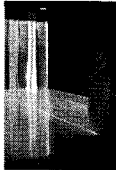

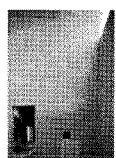
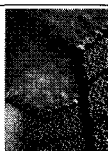
The locations of the windows are very much connected to the circulation pattern of the viewer and also with what the visitor will be seeing at that moment. As in the examples of camera positions #5 and #6, the introduction of light through the window, the pattern of the shadow or the gradual change of the color of the walls, become an exhibit themselves. The experience of these empty rooms is calm and subdued but with the changing light, the quality of the ambiance is continually changing. As with other projects by Zumthor, the rooms composed of very basic elements create a serene atmosphere, but never dull or static. Every one of these gallery rooms take on a different spatial quality with the movement of the sun and the quality of daylight but remain a perfect background for the exhibition of art works.

The experience of these empty rooms is calm and

<Chart 3> Spatial Effect of the light in Kolumba Museum

Position no. & Image	Design Concept/ Main constituent/ Perception	Materials & Envelope	Characteristic of the light	Spatial Effect of the light
1 	Light creating pattern/ Openings in the walls/ Perception of space	The late Gothic ruins and the newly added walls in brick form a solid envelope over the archaeological ruins.	Daily changing light condition create a pattern that is ephemeral and the structure is less visible.	View of the main volume- fairly dark with limited natural light and artificial lighting. The past is solemnly preserved.
2 	Light creating pattern/ Openings in the walls/ Perception of space	The stained glass panels and the ancient remains have been seamlessly linked by the light introduced by the holes in the new walls.	Daily changing light condition create a pattern that is ephemeral and the structure is less visible.	Through the double layers of the brick walls with numerous holes, the light is penetrated in a very sensitive way into a space that contains historical remains. The light quality changes with the movement of the sun.
3 	Light revealing the form/ Brick and stone walls/ Perception of form	View of the courtyard, illustrating the juxtaposition of the past and the present in terms of material and construction.	The light falling on the monolithic surfaces make the form appear more solid. The holes become patterns of shaded areas.	Exterior condition - The changing light emphasizes the material quality and the construction method from different eras.

<Chart 3> Spatial Effect of the light in Kolumba Museum

4		Light forming a surface/ Window and fabric curtain/ Perception of space	Translucent curtains diffuse the light from outside and at times gives glimpse of the city outside.	The light from the large glass opening falls on the surfaces of the walls, floor and ceiling emphasizing the 2d quality of the space.	The direct light is filtered by the layer of fabric and also the view is screened by it. As a connecting space, the lighting condition provide direction and movement.
5		Light forming a surface/ Window and fabric curtain/ Perception of space	Simple and bare walls with filtered light through the translucent curtains become a perfect background for the collection of art.	The light, shade and the pattern heighten the two dimensional quality of the space.	The light is screened and filtered by the curtains, creating a pattern on the floor. The changing patterns make this somber room a dynamic place.
6		Light forming a surface/ opening in the wall/ perception of space	White wash walls and floor make the exhibition rooms very modern and minimal - in contrast to the ground level.	The light through the large opening create a varied shades of brightness/ shade - creating areas for exhibition or circulation	In contrast with the ambiance of the ground level, upper level spaces are bare and airy with light coming in through large openings.
7		Light forming a surface/ opening in the wall/ perception of space	White wash walls and floor - clean and calm atmosphere.	The light through the opening, high up in the wall emphasize the source. The two dimensional qualities of the opening and the various surfaces are emphasized by the different degrees of light intensity.	The light from the high window make the space more spacious and tranquil.
8		Light creating pattern/ Openings in the walls/ Perception of space	Specially manufactured bricks in double layered perforated walls make a delicate boundary between inside and outside.	A vivid pattern is created by the openings in the walls, which change with the change of daylight. An ephemeral ambience is created with an endless variations.	Through the double layers of the brick wall, the light from outside filters through, creating a mystical ambience, connecting the past with the present day museum.

subdued but with the changing light, the quality of the ambience is continually changing. As with other projects by Zumthor, the rooms composed of very basic elements create a serene atmosphere, but never dull or static. Every one of these gallery rooms take on a different spatial quality with the movement of the sun and the quality of daylight but remain a perfect background for the exhibition of art works. The spatial experience and the effect of light in the spaces of Kolumba museum can be summarized in the <Chart 3> above.

5. Conclusion

The two contrasting projects were carefully chosen to illustrate the materiality and different methods of introduction of light through different types of construction methods. His use of materials and the method of construction are both sensitive and bold at the same time.

It is possible to conclude that Zumthor seeks to achieve both materiality and locality through his projects. Peter Zumthor's design philosophy and his design projects illustrate the more meaningful

characteristics of architecture. His projects seem to direct towards how a good building should be. In his projects he continues to explore the acoustic, luminous and aromatic properties of the material with exquisite sensitivity. The different types of light that are introduced in the spaces created can be identified as light as surface, pattern making and decoration, light indicating direction and movement, light for space making and light emphasizing the form.

The theme of materiality and the effect of light is a vast and interesting field in architectural research and it deserves to be researched more in depth in future studies.

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