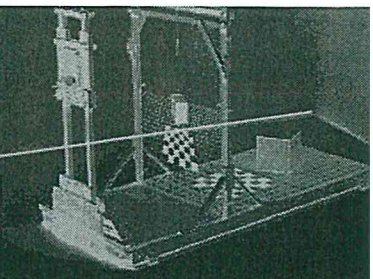


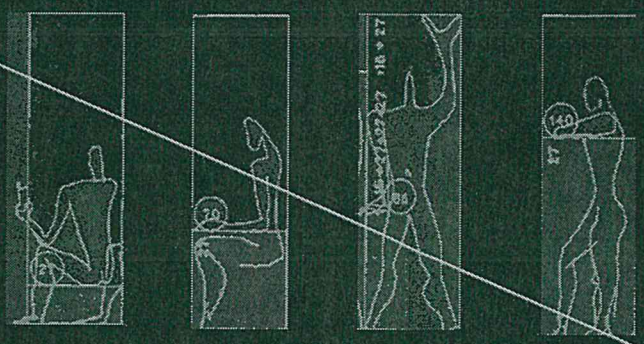
A Blind Sensibility

A Non Visual Experience of Architecture

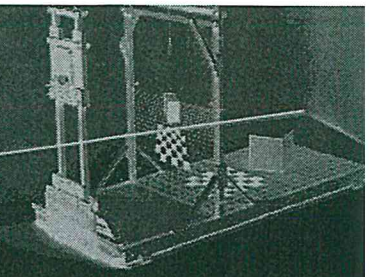
RAIC Syllabus Program D9 - Thesis

Final Thesis Document
Volume 2

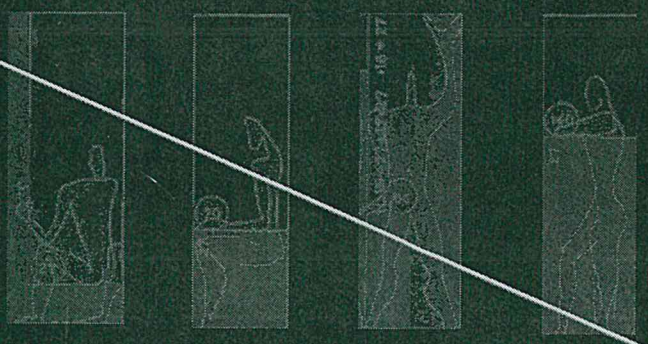
Appendicies (including Demonstration Project), Bibliography, List of Illustrations and Glossary of Terms



A Blind Sensibility –
A Non Visual Experience of Architecture



APPENDIX 'A'
Demonstration Project



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A Blind Sensibility –
A Non Visual Experience of Architecture

THE FUNDAMENTAL DIFFERENCE BETWEEN **BUILDING AND ARCHITECTURE** IS A CONCERN FOR HOW THE MIND OF AN INHABITANT IS ENGAGED AND STIMULATED BY **THE BUILT FORM.**

A Blind Sensibility –
A Non Visual Experience of Architecture

A1 **Introduction Demonstration Project – Spa Relaxation Center**

The **intention of the thesis** is to determine how a deeper experience of architecture can be provided by investigating the modalities of a spatial experience (senses). In response to the preliminary investigation, the senses other than sight were focused on. This further investigation was guided by how the blind experience architecture. The result is how to provide an architectural experience without a reliance on the sight system. This is referred to as **A BLIND SENSIBILITY**. Refer to the research paper preceding (chapters 1 to 8).

The next step was to develop an **architectural program** that could demonstrate the research findings in a design project. A project type related to Roman Bath was selected. Research into Roman, Turkish and modern Scandinavian baths was conducted to observe their precedence. This research formed the demonstration project program.

Next, an **exploration of each sense** was conducted to determine how they could be appropriately applied to architecture. This exploration formed the design concept of "intersection, transition and rest" to be utilized in the final design.

A **site** was then selected and design development began.

The **architecture** evolved from a primary consideration for the experience of the inhabitant. A series of "EVENTS" were developed to engage an isolated sensory system of the inhabitant.

Once the architecture or experience was provided to the inhabitant the **built form** was focused on.

The following large format pages are reductions of the presentation material used to present the project. As such the first four pages cover topic information, research information, conclusions, and demonstration project options. The nest two present precedent architecture and architectural concept applied to the project. The final pages cover site information, urban design approach, demonstration project, Parti, plans, sections, elevations, presentation renderings, and detailed sensory events where the mind and body engagement of inhabitant with architecture occurs.

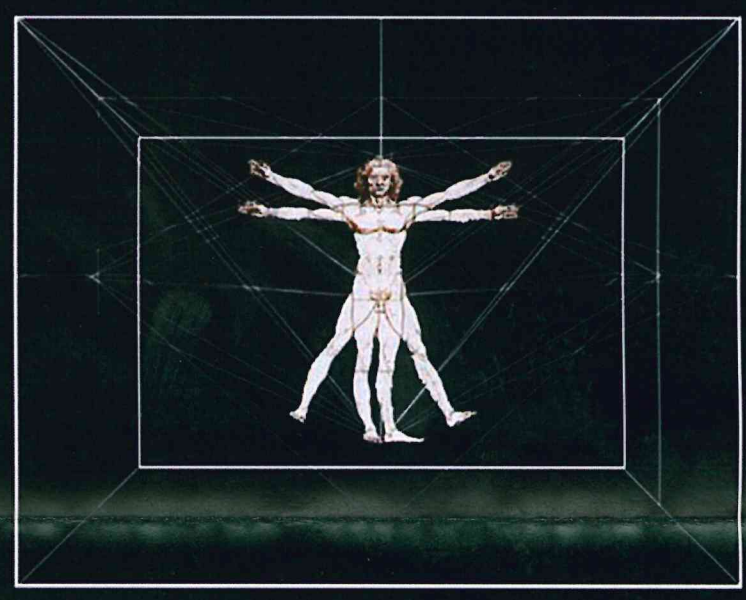
A BLIND SENSIBILITY

A NON VISUAL EXPERIENCE OF ARCHITECTURE

TOPIC

THE FUNDAMENTAL DIFFERENCE BETWEEN BUILDING AND ARCHITECTURE IS A CONCERN FOR HOW THE MIND OF AN INHABITANT IS ENGAGED AND STIMULATED BY THE BUILT FORM.

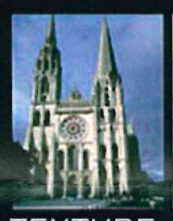
Thesis Statement:
Sight, Hearing, Smell and Haptics are the dialogues engaging humanity with architecture. Architecture as a visual art is biased toward Sight but in order to hold a complete and discernible experience for humanity as the nucleus of architecture, it must acknowledge all the senses. Therefore, investigating the blind experience of architecture will short circuit the Sight bias and reveal how the other senses foster a mind and body connection thus balancing the overall sensory application.



Historical Precedence:

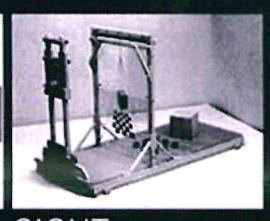
SIGHT

TIME

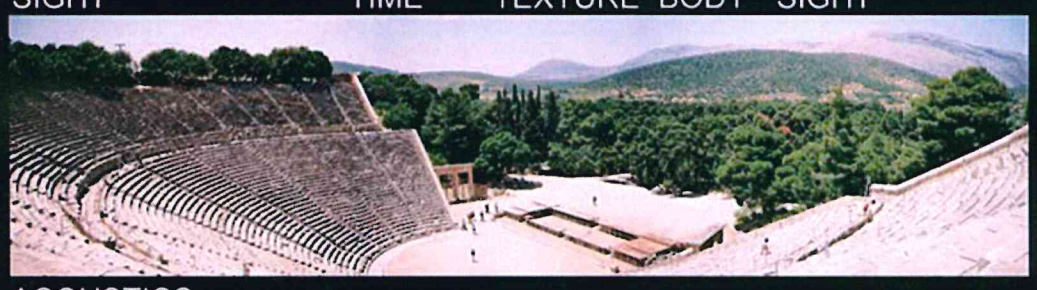


TEXTURE

BODY

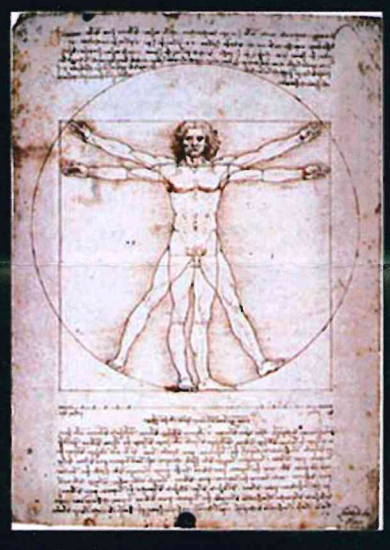


SIGHT



ACOUSTICS

Epidaurus Theater



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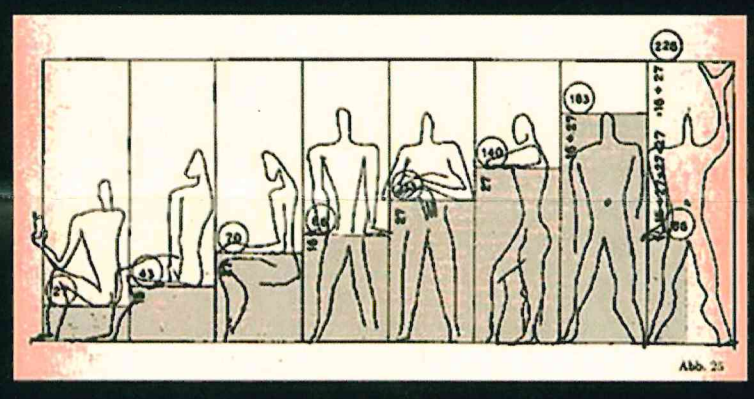

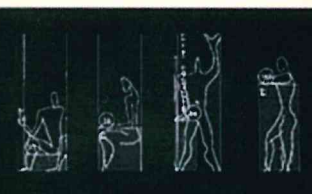

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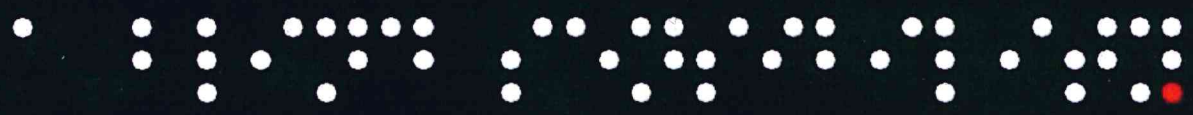
Presentation board #1
Topics covered on board:
Thesis Topic, Foundation and Statement

Board used at D9A - Research presentation May 2007 and D9B - Program and Design Development (Demonstration Project) presentation May 2008

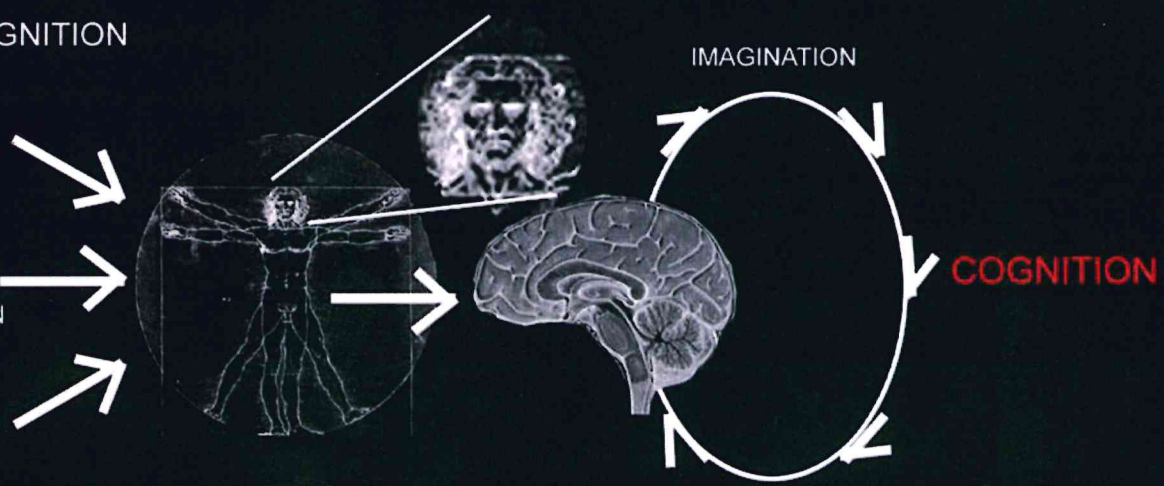
A BLIND SENSIBILITY

A NON VISUAL EXPERIENCE OF ARCHITECTURE



Our senses are the modalities of spatial comprehension. Our imagination and experience help make sense of the information in the brain. This process develops a cognitive structure (schema) of the world.

PATH TO COGNITION



Cognition Requires the Senses, Memory and Imagination.

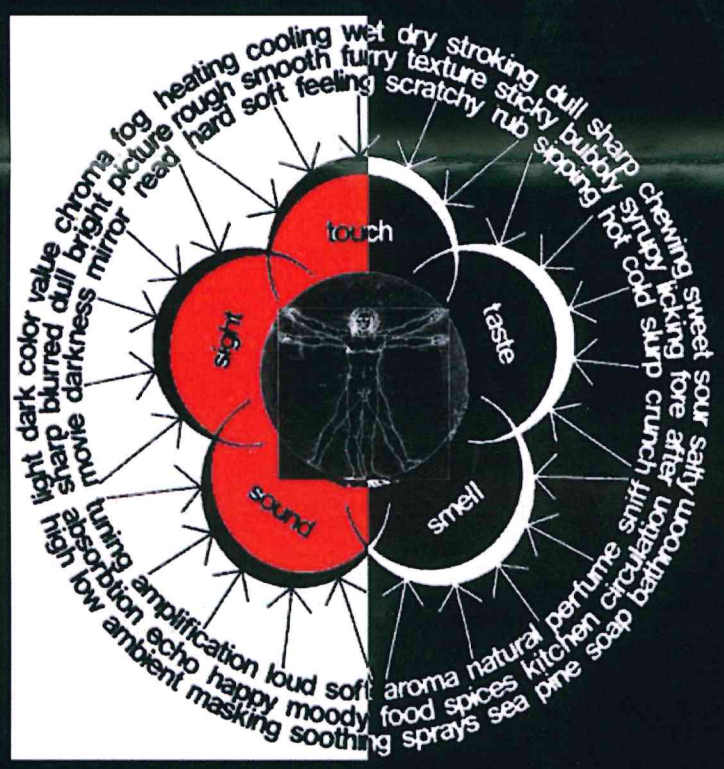
BRAIN, BODY, THE SENSES AND THE PATH TO COGNITION

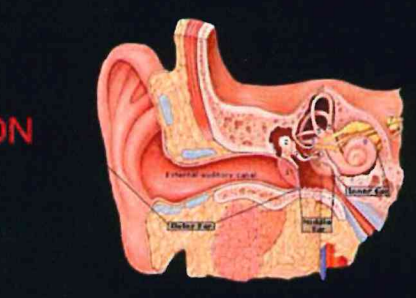
Our sensory nerves react to events. An event happens when the sensory norm (threshold) is exceeded.

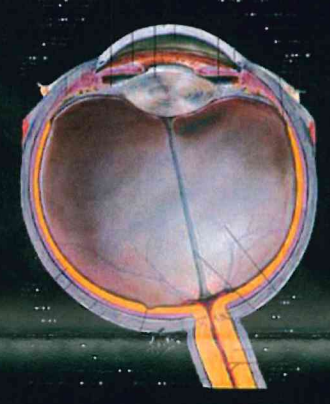
Conversely, our sensory system can become accustomed to the surrounding sensory levels if they are consistent.

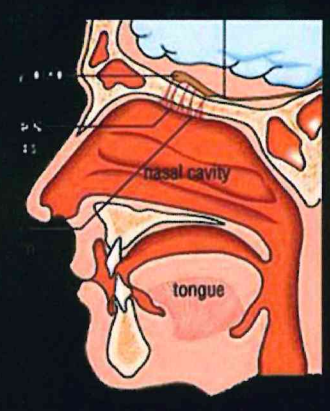
SIGHT BIAS IN ARCHITECTURE

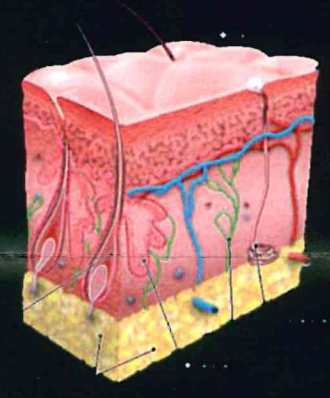
Due to the dynamics of the sight system and what is available to the architect, contemporary architecture is undeniably biased toward the sense of sight. In addition, the only aspect of the other senses taught in **architecture schools relate to** the elimination of negative aspects of each sense such as noise reduction and odour removal.











"Among the critical fault-lines within architectural practice and discourse is that which privileges sight, conceiving of architecture as primarily a visual art form. Despite the multi-sensorial, embodied nature of our Being in space, architectural discourse has been largely silent where senses other than the visual are impacted"

2006 Ryerson University Cross-Disciplinary Conference pamphlet

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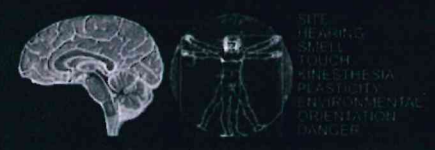
Presentation board #2
Topics covered on board:
Bran Body, The Senses and Path to Cognition

Board used at D9A - Research presentation May 2007 and D9B - Program and Design Development (Demonstration Project) presentation May 2008

A BLIND SENSIBILITY

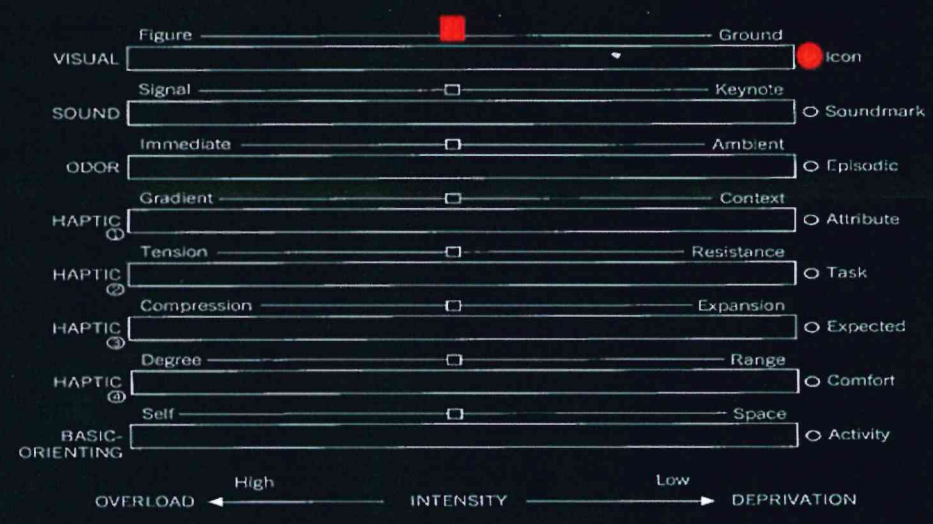
A NON VISUAL EXPERIENCE OF ARCHITECTURE



SENSORY SCALE

The language to describe the sensory qualities of space is inadequate. Like describing a wine, we use descriptive words to attempt to articulate the sensory experience.

■ The square marks the position between the criteria (above each bar) for each category (left hand of bar) and the ● circle marks the intensity of the element (right hand of bar).



A BLIND SENSIBILITY

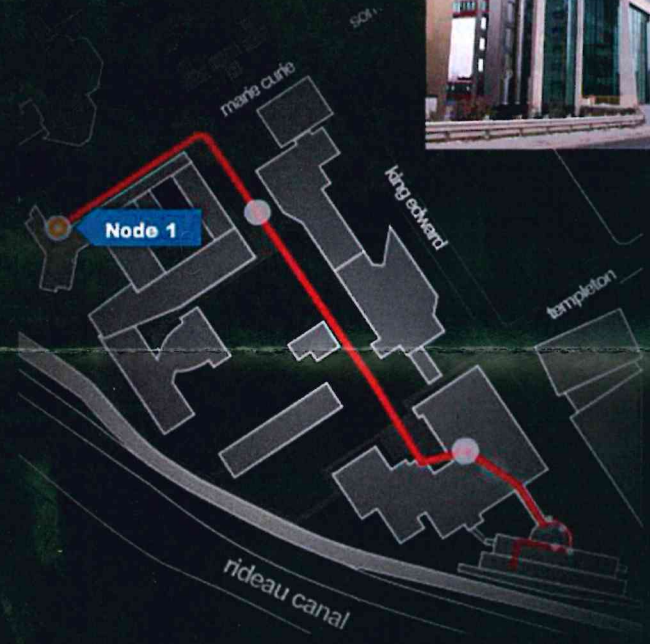
Hypothesis 1 - who better to guide the research into the senses other than sight than the blind community. As they encounter architecture every day with little or no sight they can help expand the mass of resources (compendium) available to draw from for the other senses.

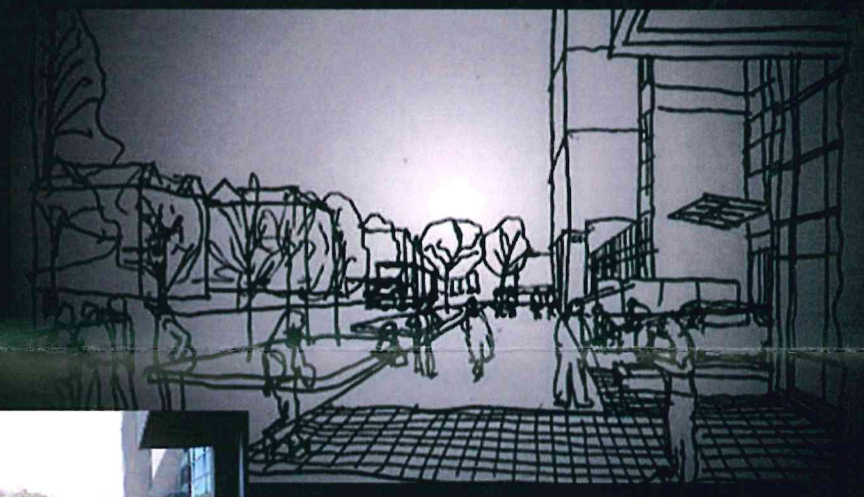
Result 1: Investigating the blind experience was meant to reveal how an architectural experience can be provided through the senses other than the sight system. However, it was difficult for a blind individual to think of an experience let alone one specific to the other sensory systems. What was revealed is what must be provided if a sensory system other than sight is to be utilized.

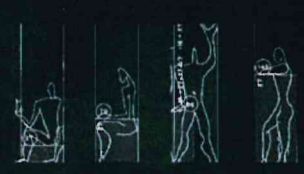
Hypothesis 2 – architecture a blind person finds engaging can also be engaging to a sighted person. However, a space a sighted person finds engaging will more often than not offer little to a blind person.

Result 2: SITE building is a critically acclaimed piece of architecture. It is highly stimulating for the visual and tactile senses. However, the blind experience of SITE is unsettling. The wide corridors and meandering circulation make navigation difficult and exhausting. Also, Darold Lindquist (blind man) listed, after coaxing, supermarkets (smell) and pubs (acoustics) as enjoyable environments. As, there has been acclaimed architecture of each program type one can confidently agree with the hypothesis

A BLIND WALK







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Presentation board #3
Topics covered on board:
Thesis Position, Research
Hypothesis, and Blind Walk

Board used at D9A - Research presentation May 2007 and D9B - Program and Design Development (Demonstration Project) presentation May 2008

A BLIND SENSIBILITY

A NON VISUAL EXPERIENCE OF ARCHITECTURE

CONCLUSIONS

A BLIND SENSIBILITY

BLIND WALK AND RESEARCH FINDINGS

In response to the blind walk and blind research, the senses can be organized into three categories:

1. Reactive Senses - they must be provided for in order to navigate and feel comfortable (safe).
2. Active Senses - can be utilized to provide an architectural experience
3. Reactive or Active - are primarily required for navigation and comfort but can be stimulated sparingly and for a short period of time to provide an experience.

ARCHITECTURAL PRECEDENCE

There is little empirical knowledge available for the senses other than sight however many architects have designed buildings with primacy given to a sensory system other than sight. The following case studies provide examples of what can be achieved while designing in search of a whole sensory experience.

The Essential Senses and the Experiential Availability

SENSORY SYSTEMS	Essential (Reactive)	Reactive-Active	Experientially Available (Active)
SIGHT SYSTEM		•	
HEARING SYSTEM			•
SMELL SYSTEM			•
HAPTIC SYSTEM(s)			
Tactility			•
Plasticity	•		
Kinesthesia		•	
Environmental Gage		•	
Danger	•		
Provision Importance	1st	2nd	3rd
	function		experience

Definitions:
Reactive senses respond to stimuli also described as passive senses.
Active senses seek stimuli also described as aggressive senses.
Reactive-Active senses can function both ways.

Haptic Senses:
Tactility (texture), Environmental Gage (temperature and humidity), Danger Perception (pain), Plasticity (spatial comprehension) and Kinesthesia (muscular/movement).


haptics


acoustics


texture


all


sound


all

D9B PROJECT OPTIONS

Option 1 – SCHOOL FOR BLIND KIDS
Pro – logical transition from research to design project.
Con – Designing a school for blind kids involves many accessibility items that may infuse the project program making it difficult to focus on the findings of the research.

Option 2 – ACTIVITY CENTRE FOR W ROSS MacDONALD SCHOOL
Pro - logical transition from research to design project.
Con – This project involves the intentional contradiction of the research findings.

Option 3 – ROMAN BATH (CHOSEN PROJECT)
Pro – With this program type circulation is simple and functionality is static thereby relieving the project program to concentrate on the research findings.
Con – transition from research to design project seems odd until one considers the item above.

REFER TO:
www.ablindsensibility.com

MULTIMEDIA PRESENTATION OF:
1. RESEARCH POWER POINT PRESENTATION
2. BLIND WALK (FLASH PRESENTATION)
3. DEMONSTRATION PROJECT FLY THROUGH

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Presentation board #4
Topics covered on board: Research Conclusions, "A Blind Sensibility", Architectural Precendence and Demonstration Project Options

Board used at D9A - Research presentation May 2007 and D9B - Program and Design Development (Demonstration Project) presentation May 2008

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A2 Strategy

Three design projects were discussed as possible demonstration projects. It was determined that a Roman Bath project would be appropriate to demonstrate the theories and conclusions resulting from the thesis research. Refer to Conclusion presentation board for list of pro and cons for each project explaining the choice.

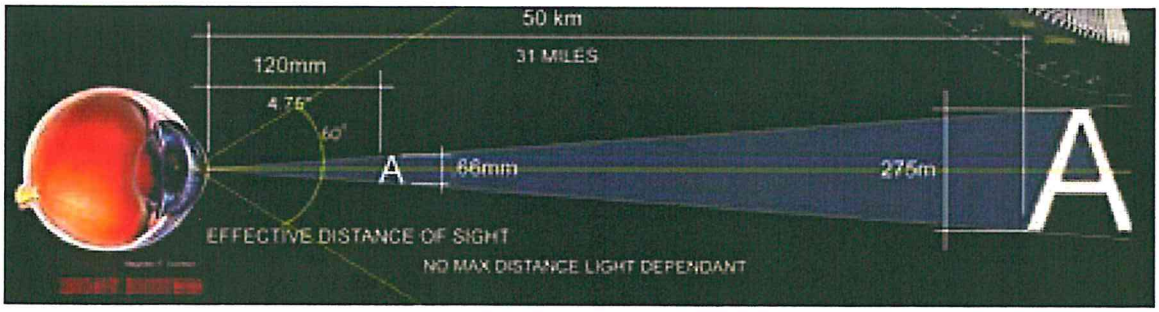
Sensory Revitalization

Intention:
To demonstrate through an architectural design project how a total sensory experience can be fostered with focus on the senses other than sight. 3 projects were conducted to accomplish; the first, determine a concept that would apply the research findings to architectural form; second, research precedence to determine the program for the demonstration project ; finally, find a site and develop architectural demonstration project.

A3 Project 1: Sensory Thresholds – Exploration of Research Conclusions Leading to Architectural Form Producing Concepts

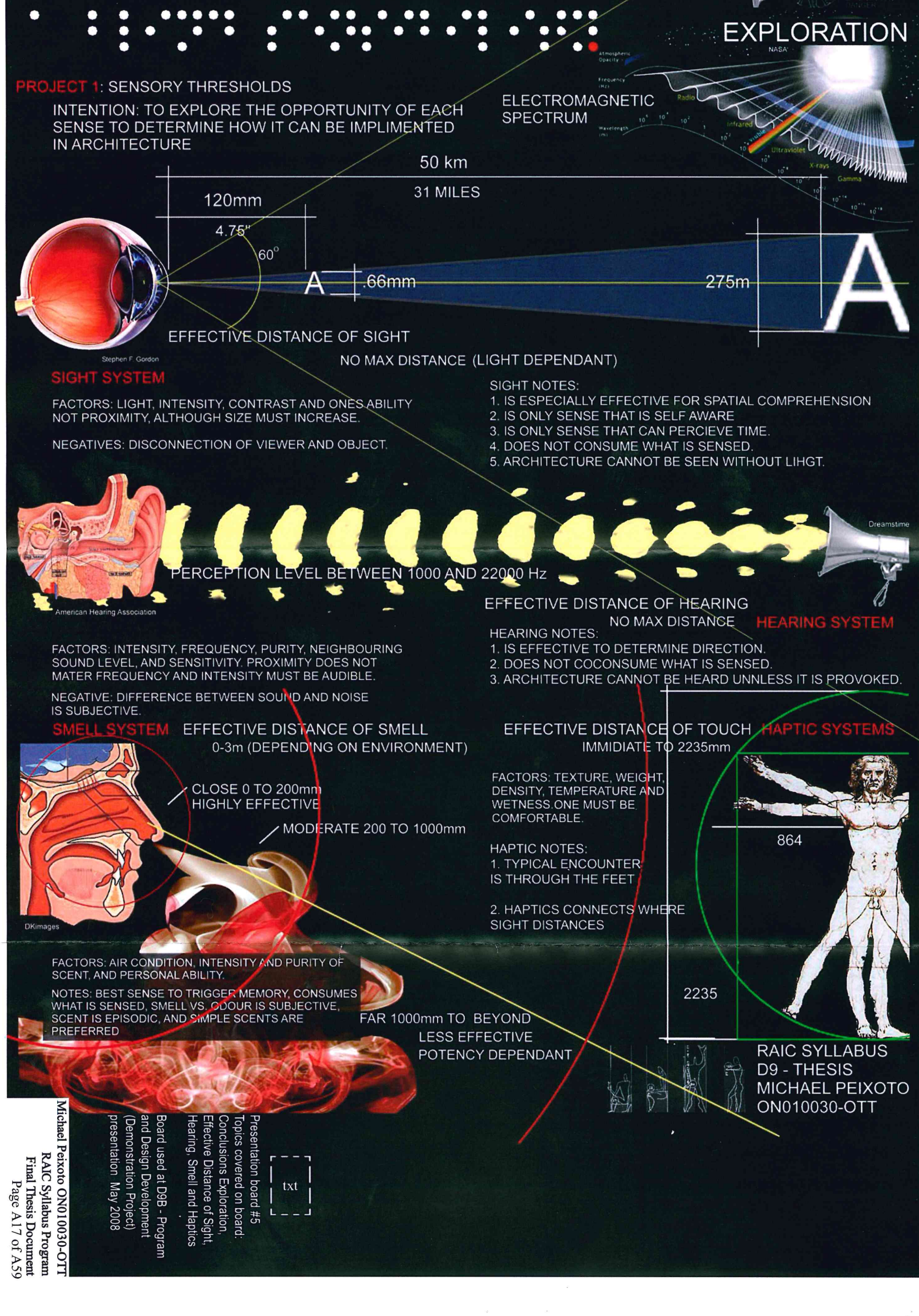
To explore the essential elements (physical, social, psychological and spiritual) of each sense in isolation and present an architectural or physical expression of the metaphysical implications of each. The intention is to explore the relationship between the mind and body of an inhabitant within architecture, to isolate each appropriate sense and determine the opportunities each present. The information gained was implemented in the final demonstration project.

Appropriate senses of architecture experience are sight, hearing, smell, tactility (texture), kinesthesia (muscular/movement), plasticity (spatial comprehension) and environmental gage (temperature and humidity). The effective distance of each sense was explored in order to determine how they might be applied in an architectural example. This led to the design concept employed in the project "intersection, Transition and Rest". The items related to the visual system, presented above, are graphically represented. The concept deals with the idea that all senses intersect at the tip of our out reached hand (approximately 865 mm from our centers).



A BLIND SENSIBILITY

A NON VISUAL EXPERIENCE OF ARCHITECTURE



PROJECT 1: SENSORY THRESHOLDS

INTENTION: TO EXPLORE THE OPPORTUNITY OF EACH SENSE TO DETERMINE HOW IT CAN BE IMPLIMENTED IN ARCHITECTURE

SIGHT SYSTEM

FACTORS: LIGHT, INTENSITY, CONTRAST AND ONES ABILITY NOT PROXIMITY, ALTHOUGH SIZE MUST INCREASE.

NEGATIVES: DISCONNECTION OF VIEWER AND OBJECT.

SIGHT NOTES:
1. IS ESPECIALLY EFFECTIVE FOR SPATIAL COMPREHENSION
2. IS ONLY SENSE THAT IS SELF AWARE
3. IS ONLY SENSE THAT CAN PERCIEVE TIME.
4. DOES NOT CONSUME WHAT IS SENSED.
5. ARCHITECTURE CANNOT BE SEEN WITHOUT LIHGT.

HEARING SYSTEM

FACTORS: INTENSITY, FREQUENCY, PURITY, NEIGHBOURING SOUND LEVEL, AND SENSITIVITY. PROXIMITY DOES NOT MATER FREQUENCY AND INTENSITY MUST BE AUDIBLE.

NEGATIVE: DIFFERENCE BETWEEN SOUND AND NOISE IS SUBJECTIVE.

HEARING NOTES:
1. IS EFFECTIVE TO DETERMINE DIRECTION.
2. DOES NOT COCONSUME WHAT IS SENSED.
3. ARCHITECTURE CANNOT BE HEARD UNNLESS IT IS PROVOKED.

SMELL SYSTEM

FACTORS: AIR CONDITION, INTENSITY AND PURITY OF SCENT, AND PERSONAL ABILITY.

NOTES: BEST SENSE TO TRIGGER MEMORY, CONSUMES WHAT IS SENSED, SMELL VS. ODOUR IS SUBJECTIVE, SCENT IS EPISODIC, AND SIMPLE SCENTS ARE PREFERRED

HAPTIC SYSTEMS

EFFECTIVE DISTANCE OF TOUCH

FACTORS: TEXTURE, WEIGHT, DENSITY, TEMPERATURE AND WETNESS.ONE MUST BE COMFORTABLE.

HAPTIC NOTES:
1. TYPICAL ENCOUNTER IS THROUGH THE FEET
2. HAPTICS CONNECTS WHERE SIGHT DISTANCES

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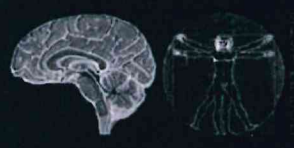
Presentation board #5
Topics covered on board:
Conclusions Exploration,
Effective Distance of Sight,
Hearing, Smell and Haptics

Board used at D9B - Program and Design Development (Demonstration Project) presentation May 2008

A BLIND SENSIBILITY

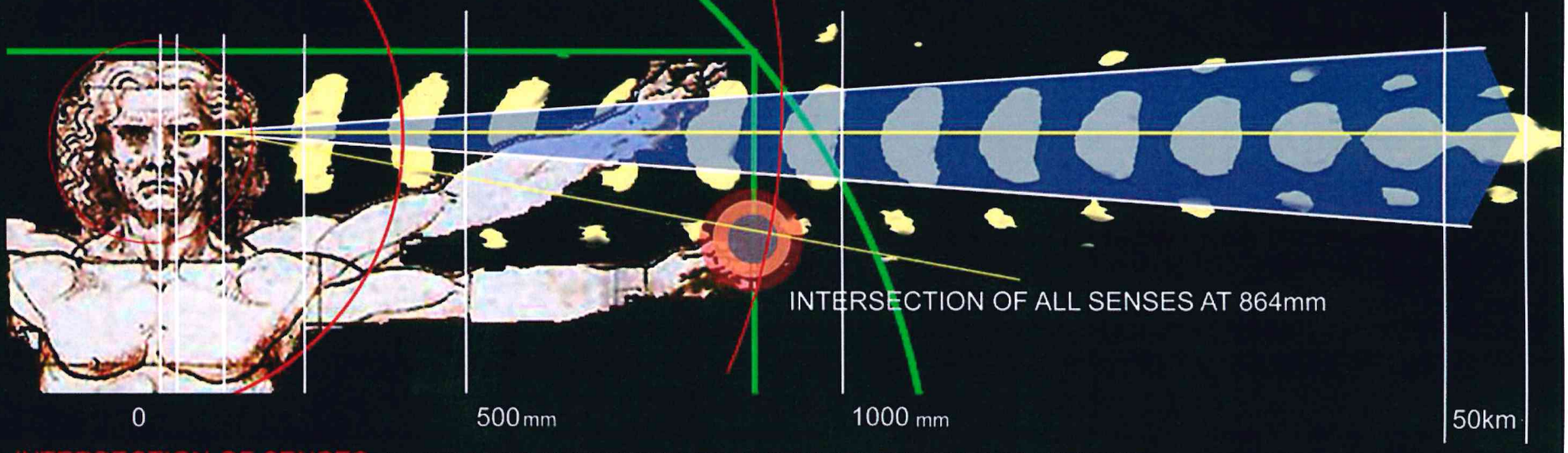
A NON VISUAL EXPERIENCE OF ARCHITECTURE



CONCEPT

CONCEPT BOARD

HOW ONE CAN APPLY THE RESEARCH FINDINGS TO ARCHITECTURE



INTERSECTION OF SENSES (OVERLAY OF INFORMATION FROM SENSORY THRESHOLDS EXERCISE)

SENSORY FACTORS AND CONCEPTS:

SENSORY PERCEPTION REQUIRES A COUNTER CONDIITON TO CONTRADICT.

IF ALREADY STIMULATED A NERVE CANNOT REGISTER ANOTHER EVENT.

THE MIND AND BODY REQUIRE REST PERIODS - SENSORY CLEANSING.

SCENT IS ATMOSPHERIC AND IF THERE IS AN OPENING NEAR HIGHER THAN ONE'S NOSE THE SCENT WILL ESCAPE.

SOUNDSCAPES, SMELLSCAPES, HAPTIC-SCAPES AND LANDSCAPES.

DESIGN CONCEPT

INTERSECTION, TRANSITIONS AND REST

TO EXPLORE IN PHYSICAL FORM THE POSSIBILITIES OF EACH SENSE TO PROVIDE A CONNECTION OF INHABITANT WITH ARCHITECTURE.
INTENTION: FOCUS ON THE SENSES OTHER THAN SIGHT WHERE APPEARANCE IS A RESULT OF A FOCUS ON THE OTHER SENSES.

DESIGN PROJECT: "SENSORY REVITALIZATION - A ROMAN BATH (PROJECT 3)

IS TO BE:
- A PLACE WHERE TIME STANDS STILL.
- WHERE ONE CAN RETREAT FROM THE INFORMATION AGE, THE BOMBARDMENT OF MEDIA AND TECHNOLOGY.
- A SANCTUARY TO ESCAPE THE TENSIONS OF EVERYDAY LIFE.
- A PLACE TO CLEANSE THE BODY MIND AND SOUL.
- AN IMPORTANT CULTURAL CENTRE SERVING AS A PLACE OF SOCIAL GATHERING AND RITUAL CLEANSING.

BATH PROCESS

Caracalla BATH - ROME ITALY

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Presentation board #6
Topics covered on board:
Demonstration Project Concept
of Intersection, Transition and
Rest, and Demonstration Project
Program Type and Research

Board used at D9B - Program and Design Development (Demonstration Project) presentation May 2008

A Blind Sensibility –
A Non Visual Experience of Architecture

A4 Project 2: Critical Analysis – next section of handouts.

Description
A comparative study of the following architectural examples was provided. The intention is to allow this exercise to inform the functional and built program for the demonstration project.

Roman Bath (Thermae) - Caracalla

Turkish Bath (Hamam) - Bey Hamam in Turkey

Le Nordik Scandinavian Spa – Gatineau, Quebec

Objectives: This portion focuses on the ritualistic aspects, the functionality, program areas, use of material, and especially how each stimulates a connection (mind and body) of inhabitant with the build form (architecture). Determine the linkages between all the projects. Use the information retrieved in the critical analysis to develop the spatial and functional programming for the demonstration project.

A Blind Sensibility –
A Non Visual Experience of Architecture

Roman Bath:
Bathing and the Bath House played a major part in Ancient Roman culture and society. It was part of the daily regiment for men of all classes, and many women as well. Bathing in Rome was a communal activity, conducted for the most part in public facilities either a Thermae or Balneum. The difference between the two is size and a Thermae has an outdoor gym. Republican bathhouses often had separate bathing facilities for women and men, but by the First Century AD mixed bathing was common. In addition to bathing food, drink, and sex were also for sale at these Ancient Roman bathhouses.

Most Roman cities had atleast one bath house which was the centre of public bathing and socialisation. Commonly located within or near city centres. There were commonly three rooms a Caldarium (Hot Bath), a Tepidarium (Temperat Beth), and a Frigidarium (Cold Bath). A few also had a Sudatorium (Steam Bath) and or a Laconicum (Sauna).

The bathhouses were heated from below with fires built in floor cavities (See Figure 2.1 below). Due to heat distribution the different tempurature rooms logically radiated from the heat source. To explain, each Thermae had at least one furnace used to heat the cavities below the floors. The room closest to the furnace was always the Hot Bath. The next room would be the Temperate Bath and this would be followed by the Cold Bath. In some cases, if a Steam Bath or Sauna was present they would be parallel or near equal in distance to the Hot Bath. This also represents the intention of the bath house which is to bath in hot, begin to sweat and then plunge in cold to close your poores and release toxins from the skin.

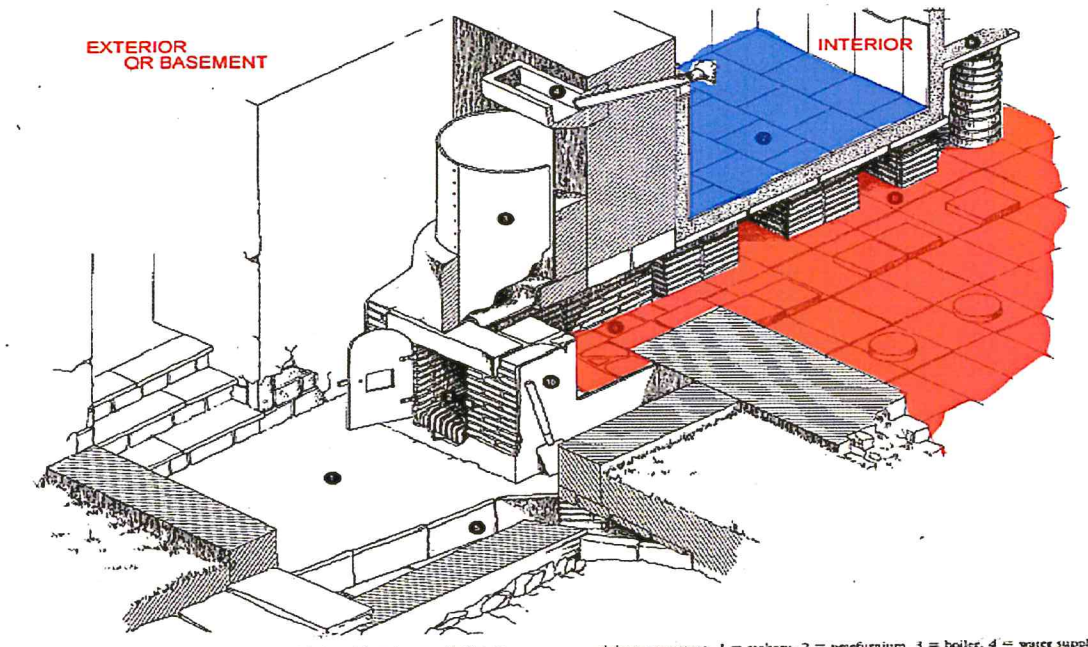


Fig. 21. Section through stokery and pool in caldarium. There is a metal boiler encapsulated in concrete and, underneath this, a praefurnium with connection to the hypocaust. The opening could be closed with a damper when the room reached the right temperature. *1* = stokery, *2* = praefurnium, *3* = boiler, *4* = water supply, *5* = drain, *6* = heating duct, *7* = alveus, *8* = suspensura, *9* = room floor, *10* = boiler support. (Degbomont 1984 pl. 3.)

Fig 2.1 Example of floor assembly with furnace to heat cavity. Red represents hot cavity below floor assembly and the blue represents the bath.

Typical organization of a Thermae was logical and ordered given the complex systems that were required to facilitate their function. They were often organized along an axis and symmetrical in plan (see figure 2.2). The typical construction was thick masonry walls with sophisticated wall and floor assemblies that allowed heat to migrate.

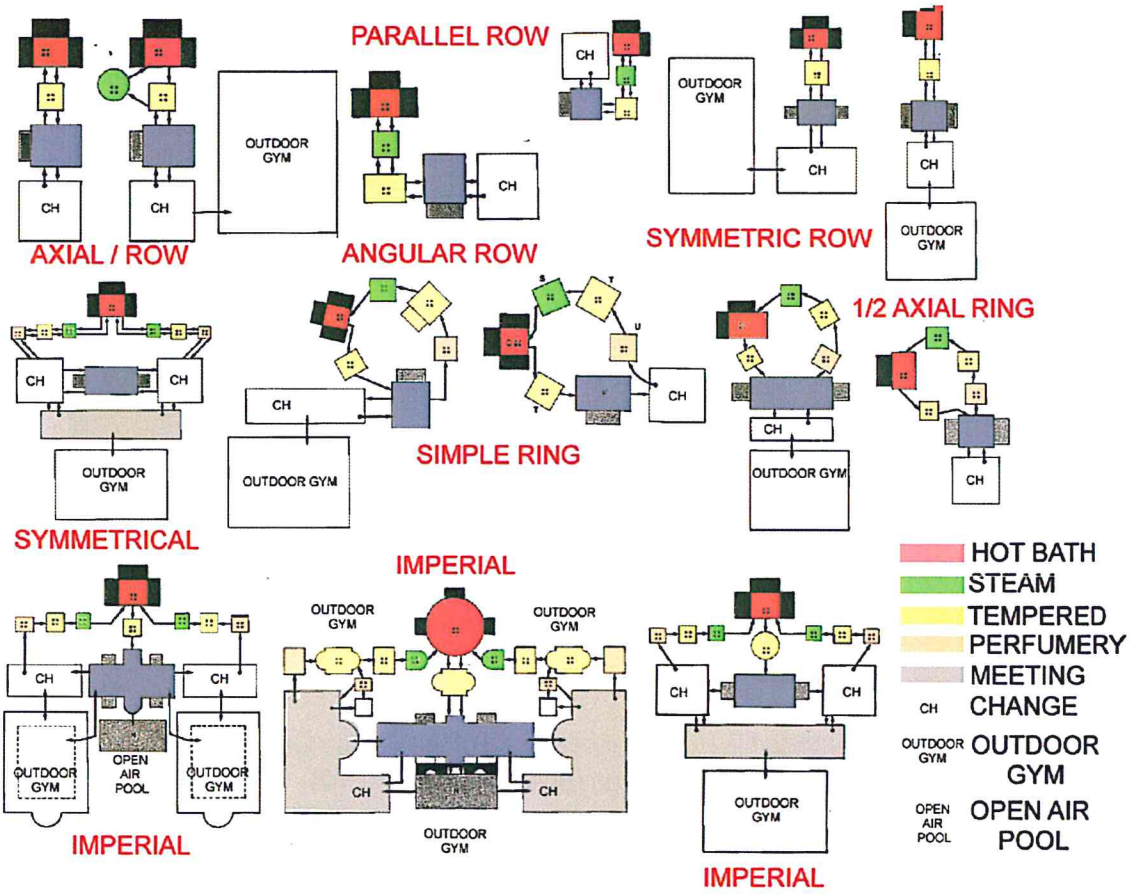


Figure 2.2 examples of Roman Bath functional schemes.

The following are examples of Thermae. The first is large and located within Rome Italy the second is quite small and purposely chosen to reflect a contradiction in size.

Baths of Caracalla (Rome Italy)

Figure 2.3 – Artist interpretation model of Caracalla.
Picture from www.maquettes-historiques.net

The Baths of Caracalla are located in Rome directly south of the Roman Coliseum. It was once approximately 110,530 m2 including the porticus (Building @ 25 080 m2). It is currently in shambles but still used frequently as a gathering place. It is also used for outdoor concerts and functions such as weddings. The following pictures show the large brick walls and textured facades that create a nice backdrop for such occasions.

Figure 2.4 – Interior Caracalla showing state of partitions and texture of masonry walls.
Picture from www.Italyguides.It

Figure 2.5 – Interior of Caracalla reflecting mass of masonry construction.
Picture from www.kalpana.it

Figure 2.6 – Interior of Caracalla showing thickness of masonry walls and ornament on floor. Picture from www.dkimages.com

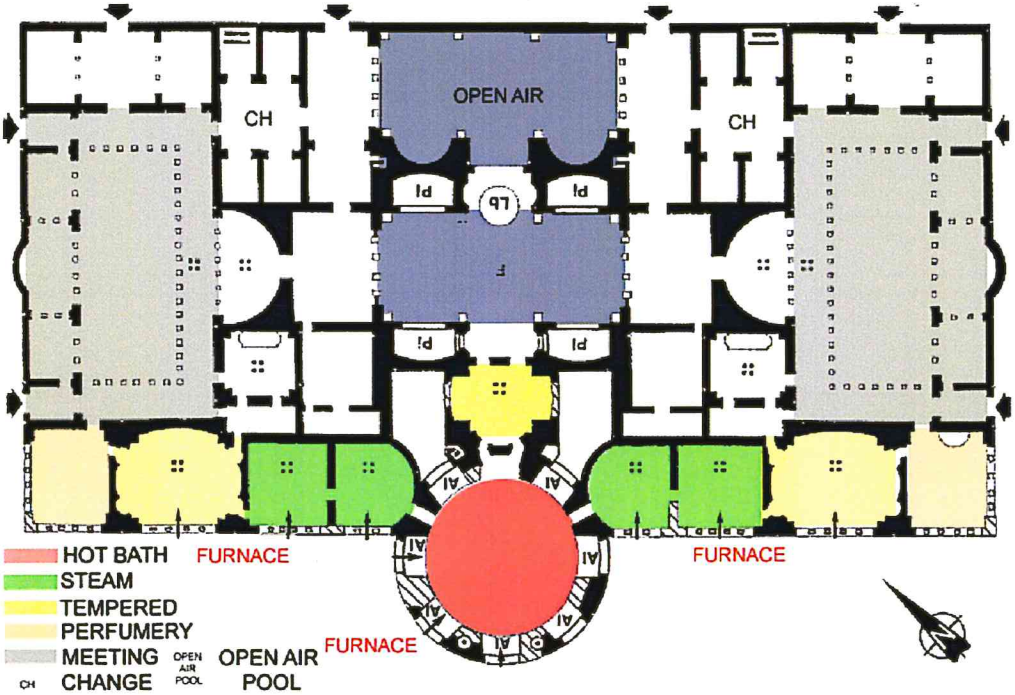


Figure 2.7 – Floor plan of bath showing scale of rooms and functional organization.

Bath of Welzheim (Welzheim, Germany)

The Welzheim bath is much smaller in comparison with Caracalla. It was built as a private Balnea and is the smallest on record. The overall size size 300 m2. It offers the three basic baths (hot, tempered and cold) only (refer to the following plan showing functionality and layout).

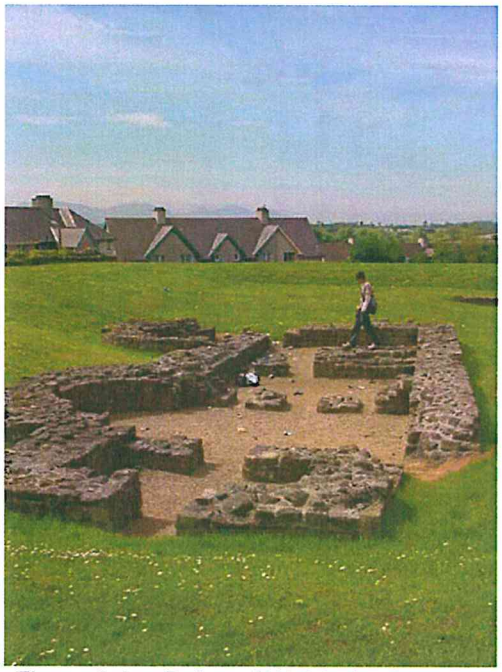


Figure 2.8 – Ruins of Welzheim Bath still reflects layout of rooms and thickness of walls.

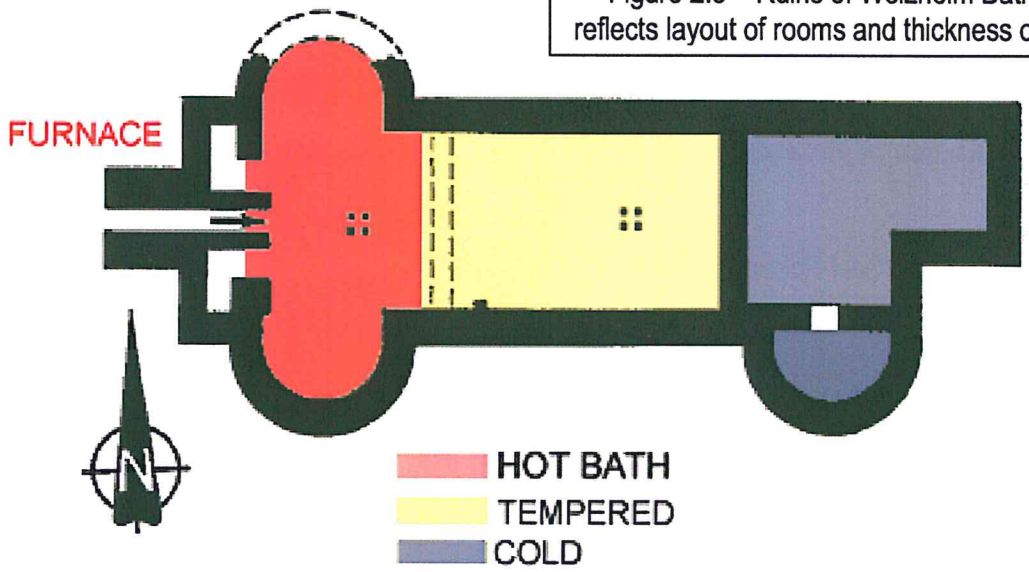


Figure 2.9 – Functional layout of Welzheim Bath.

The following image places Welzheim bath and Caracalla side by side and at the same scale.

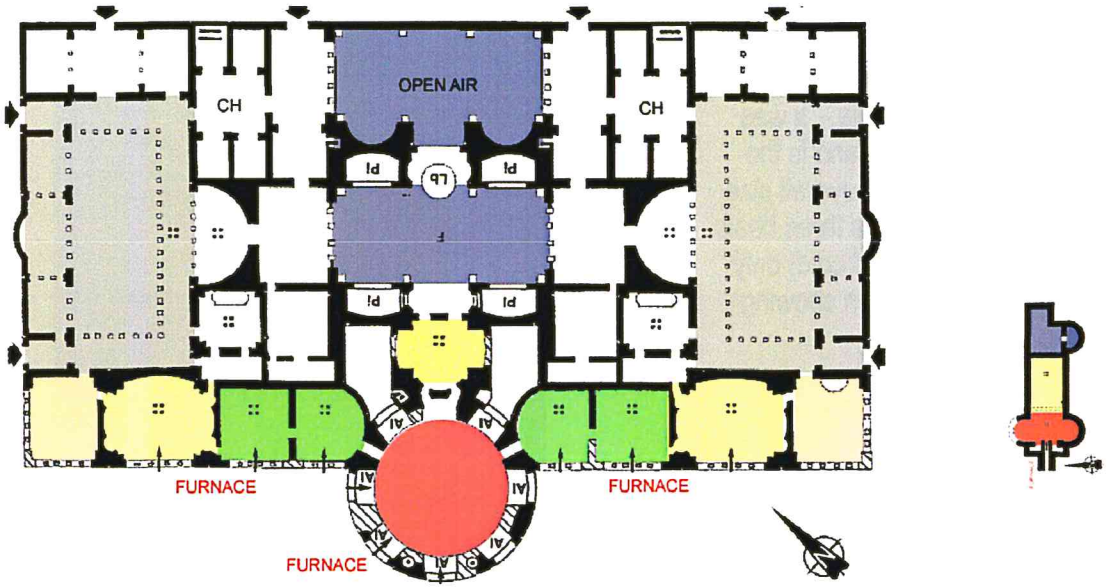


Figure 2.10 – Welzheim and Caracalla baths shown at same scale to reflect difference in size.

A5 Project 3: Program for a Recreational / Relaxation Centre in Urban Setting "Sensory Revitalization" – presented below.

Program:
Program for a Recreational / Relaxation Centre in Urban Setting "Sensory Revitalization"

Theoretical Description:
To explore in physical form the possibilities of each sense in providing a connection of inhabitant with architecture. The intention is to focus on the senses other than sight where appearance results from a focus on the other senses.

Project Description:
The recreation center / bathhouse is to be located within an urban setting near a business district. The services provided are similar to Roman and Turkish bath houses – a sanctuary to escape the tensions of everyday life, cleanse the body, mind and soul. The center will play an important role in the culture serving as a place of social gathering and ritual cleansing. As an architectural expression it will represent what can be achieved when consideration for the other senses takes precedence over sight in the first place. The centre is to hold the experience of the inhabitant, or a

connection of inhabitant with architecture, as the nucleus for its organization. The bath is to be a retreat from the information age, the bombardment of media and technology in general.

Program:

Administration (office and reception): 50 s.m .

Interior (based on investigation of Thermae and Hamam):

Interior:	
Major composition – Six rooms / areas	
Caldarium / Hotbath	25 s.m.
Tepidarium / Tempered Bath / Warmbath	20 s.m.
Frigidarium / Coldbath	15 s.m.
Sudatorium / Steambath	20 s.m.
Laconicum / Sauna	20 s.m.
Rest Areas (2)	20 s.m. total
Dark Retreat (2)	20 s.m. total

Support Rooms:	
Male Change Rooms / Showers	40 s.m.
Female Change Rooms / Showers	45s.m.
Laundry Facilities	20 s.m.
Storage / service / loading / garbage	50 s.m.
Meeting Space	15 s.m.
Massage Rooms / Treatment Rooms (2)	20 s.m. total
Mech and electrical space @ 25%	50 s.m.

Occupant load at approximately 60 people.

Tag Line:

Jump in and invigorate your body and spirit. "Balneum Hamam" is a place where time stands still. It is a place where one can retreat from the information age, the bombardment of media and technology in general. It is a sanctuary to escape the tensions of everyday life and to cleanse the body, mind and soul.

A6 Demonstration Project - Design Description

The thesis determined how a deeper experience of architecture can be provided by investigating the modalities of a spatial experience (senses). In response to the preliminary investigation, the senses other than site were focused on. This further investigation was guided by how the blind experience architecture. What was determined is how to provide an architectural experience without a reliance on the sight system. This is referred to as **A BLIND SENSIBILITY**. This determination was utilized and reflected on the following Demonstration Project.

The intention of the following section is to be read while reviewing the presentation boards. This section is to provide the narrative that was used during the final presentation. Reviewing the presentation boards while reading this narrative should provide the necessary information to comprehend the design. The sensory scaler introduced in the thesis research is utilized in the presentation boards to help articulate the sensory characteristics of the developed "events". Also on the presentation boards is a series of vignettes intended to present other areas or items of interest from a sensory experience point of view such as door handles or handrails.

Site Approach

It is important to note that the community for which this demonstration project is developed is the blind community. As discussed in the research paper this is a community with a different hierarchy for the senses. However because the project is in an urban setting it also has to respond to the typical North American hierarchy for the senses. To explain, refer to the site presentation board following, the site is located in Ottawa, Canada on the cusp of the Byward market and a residential neighbourhood known as Lower Town. Located on the corner of St. Patrick Street and Parent Street. St. Patrick turns into one of the major vehicular arteries to cross the Ottawa River into the province of Quebec. This means during rush hour St. Patrick is quite busy but off business hours and weekends it is a typical residential street with little to no business on the street near the site.

Parent Street is one with two different characters. To the south and near the Byward market it is a commercial street but to the north beyond the site it is quintessentially residential. As such, the site or more correctly the intersection is an entry node into the commercial district (Byward Market). Also, St. Patrick clearly defines the edge or extent of the commercial district (refer to presentation boards for site size and zoning information).

Beyond the items above the site was chosen for the project because of the inherent qualities that appeal to the senses. To explain, the neighbouring buildings are clad with stone, brick and wood. Each material is visually pleasant but also appeasing to the Haptic System and Smell Systems (refer to research for more information). The Notre Dame Basilica on the corner of St. Patrick and Sussex is the backdrop for the site. Visible from the site and intersection but also with the bells ringing every hour this offers a Hearing System event.

Regarding the Demonstration Project design it was important to respond the fact that the site places the project on the cusp of a commercial and residential neighbourhood. It must balance the context of neighbouring high-rise office and commercial buildings with the houses also sharing the sites property lines. Refer to the Parti diagram on the presentation board the intention was to also allow the project to mark the intersection to express the concept of a gateway into the commercial district. This was accomplished by placing the functions not requiring privacy in a glazed cube at the intersection. The corner treatment of the project is dynamic and glassed but this also allows the interior activity of the spa to enliven the intersection (refer to Charcoal Perspective on presentation boards). The project responds to site context with a self-imposed set back implemented on the St. Patrick façade to match the set back of the neighbouring houses. The loading area was placed behind the building to hide the associated activities from pedestrian experience. The building edges are straight to provide defendable façades. A boulevard was created with the residual space resulting with the self-imposed setback. The hope is if the neighbouring houses were demolished and medium density commercial buildings placed in their place this would serve as precedence and repeated. Nicely buffering with trees the commercial edge to the church and residential neighbourhood. The trees within the boulevard also provide privacy for the second floor outdoor garden (see second floor plan or St. Patrick elevation)

The entrance point was placed mid block responding to the precedence set by the neighbouring buildings. This also allowed the entrance to be separated from the residential neighbouring buffering one from the other. In addition responding to the experience of the Blind Walk research recessing the entrance while maintaining a regimented building definition pronounces the entrance for blind comprehension (refer to Blind Walk research in research paper and multimedia material available through www.ablindsensibility.com). To further this concept and allow it to express an architectural response the architecture is set upon a *plinth.* This plinth is sloped toward the entrance point. Effectively, a blind person encountering the building they would be directed to the entrance first by the simple definition of the architectures edges but the slope would also communicate direction.

Architectural Parti

The Parti diagram is also useful when discussing the architectural form. As previously described the architecture is comprised of three volumes each more transparent closer to the intersection. The form on the street is transparent and houses the public functions. It is concrete framed with storefront glassing between the columns and below the cornice. Although not intended it resembles the roman baths and temples studied in the thesis research and architectural precedence projects. Further, this volume is articulated by sloping the glass toward and in order to punctuate the intersection (see elevations on presentation boards).

Regarding the spa functions volume, to clearly define the point of entry into the spa area a large volume was created, that also houses the core services, elevator and washrooms. This large volume or "the core" is visible on the elevations and plan as one enters the spa functions. Also concrete construction but this volume is clad in rusted milled steal.

The spa functions are housed within a concrete framed large volume clad with stone (matching the neighbouring buildings). This volume is beyond the core volume mentioned above and appropriately attached to it.

The spa volume and the public transparent volume were separated to provide an opportunity to for the change rooms to express on the exterior. Refer to the elevations, clad in wood the change rooms can be seen between, and within the transparent volume and against the opaque spa volume.

Also, in relation to the Parti diagram, it was important to have as much transparency with the design as possible while still providing the privacy required for the patrons walking around robed or in bathing suites. In order to combat the fortress appearance that would result by placing them on the street. Therefore, the private functions were placed away from the public street. To further express the difference of public to private procession. The progression is marked with texture. Firstly, the public spaces are smooth and glass is the primary material. Secondly, the change rooms, as the portal one must travel from public space to private is clad with wood. The spa volume, as the private area, is primarily finished with rough stone.

The Parti diagram nicely translates the basic structure of the design three volumes each with more transparency as they near the entrance / intersection and house functions that require less privacy. However, as the site is located on a commercial street a large blank façade would be read as fascist. Especially given the function of the building. Therefore, the large spa function volume, furthest from the intersection, was split down its center with a visual corridor. However, rather than intending to connect the interior with an exterior vista it is intended to permit light into the spa area and provide a perception of passage of time (only perceptual through our Sight System – see research paper). The problem here is how do you permit windows when the patrons are walking around robed? Therefore the window on Parent (commercial street) has a sill that is above the eye level of someone standing on the sidewalk. The remainder of the window, visible on the elevation, is accomplished with spandrel panel with rusted milled steel below. The width of the window is approximately the width of a person's shoulders. Therefore only someone with the intention to be seen and thus standing in the center of the window at the glass would be seen. The window on the south elevation is problematic due to the large building on the west. In order to impede ones ability to see within the spa function from an office the window is segmented into three parts. The middle part is completely transparent and repeats the dimension and approach explained for the Parent elevation window. The outer two segments are frosted and permit light to penetrate but one within is not visible from the outside. Refer to presentation boards for rendering showing back spa window.

Regarding both windows, in order to allow the light to penetrate the interior the window extends past the typical ceiling line and connects to a skylight essentially creating a window well or recess. As this window faces north it is intended more as a punctuation of the façade rather than a means to allow light into the interior. These windows combined with skylights over the center of the spa create gesture that is intended to break the presence of the large volume.

The Parti diagram reflects the simple organization of the architecture. To respond to the blind research it is ideal that the circulation be simple and comprehensible to a blind individual. The demonstration project implements an approach that can be explained with two sentences; first, a north-south axis leasing to a circular ramp that transitions from the first floor to the second where once one reaches the top, if desired, the ramp will take them back to where they began. Second, the spa functions are organized off this path with the same direction for entry. Also, refer to the research where blind "concepts" are discussed, this is why the principles employed in the spa interior are basic and familiar concepts. In other words simple stairs, ramps, swing doors, benches and single door elevator (where the point of entry is the exit point).

Additionally to the blind research the path desired for the spa was based on the path of the Imperial Villa. The ramp, similarly to the Imperial Villa path, employs the means of circulation and transition but also contradicts the inhabitant's expectations and engages their senses. The circulation is part of the experience and not merely a means to get from point A to B.

Elevations

The composition of the elevations is meant to be calming. In relation to its public responsibility, it is meant to be stand-alone architecture but with careful consideration for site context without needless expressive forms that would contradict the research and thesis intention. The materials used were chosen by first considering their sensory qualities available for the senses other than sight. As a result, the form is calculated and balanced. In response to how inappropriately sized the neighbouring office building is the heights of the demonstration project volumes relate to those of the neighbouring houses. The materials used are similar to those on the neighbouring buildings and each offers a Haptic and Smell experience. The materials used are stone, brick, wood and rusted milled steel. Refer to the elevations, the gray areas with horizontal lines represent stone material, the red and brown panels are rusted milled steel, the orange panels represent marine grade plywood, and the gray panels associated with the transparent volume is concrete. The window frames of the transparent volume are clear anodized curtain wall frames but the windows in the spa area are framed with rusted milled steel. These frames extend past the roof and parapet line to punctuate the large opaque volumes punctuations. The plinth of the architecture is architectural concrete.

Plans

The plans nicely express the parti explained above. The simple circulation and separation of private, semi-private and public functions is evident on the Main Level plan (see Parti and elevation explanation above for more material). The materials used on the interior are a continuation of the exterior materials (see elevation explanation above). The walls are finished with wood, stone or

rusted milled steel. In addition the floors are concrete, wood or loose stone (see rooftop garden). As explained in the research the natural materials have an inherent scent that in combination provide a unique *smellscape* for the spa. A water trough with recessed lights lines the spa procession. The interior of the architecture evolved from a consideration for the interaction of inhabitant with architecture. A series of events were developed to provide specific instances where a sensory event can occur (more on this below).

To explain the plan, as previously explained the organization of the plan is based on an axial path leading to a circular ramp transition from one floor to the next. The spa functions are organized off the ramp but are centered on the large tempered pool. The water in the tempered pool is created by mixing the water from the cold podium found when one first enters the spa volume and hot bath accessed from within the tempered bath or at the ramp midpoint. This hot bath, at the ramp midpoint, is also the source for the waterfall as water exceeds the depth of this hot bath it flows over the stonewall into the temperate pool below. The intention for placement of the cold podium is for a visitor to arrive through the entry doors and dowse oneself with cold water to engage their perceptual systems. Refer to presentation boards for perspective plan showing procession of cold bath, to temperate pool and to hot bath.

As explained in the research (refer to thesis research for more information) the waterfall provides a constant sound mark that can be used for a blind individual to navigate. In addition as the demonstration project is a spa meant for relaxation an inhabitant's duration or exposure is long. Considering the street noise associated with the urban sight the white noise would be required to eliminate the perception. This is provided with the waterfall and water troughs lining the circulation path (coloured blue on floor plans).

There are two staircases flanking the temperate bath and these lead to the rest areas at the ¼ and ¾ ramp points. These stairs also provide vegetation important to help with sound absorption and provide organic smells. The vegetation also helps soften the appearance of the interior environment. The staircases are wide and serve a secondary function as benches.

Further, in regard to noise control, in order to respond to the inevitable reverberant field created by the hard surfaces of a spa the design utilizes three concepts. Firstly, the waterfall creates white noise. This raises the constant sound level and eliminated low and medium noise. Secondly, the interior is divided into small-enclosed spaces below a large ceiling volume. This provides a free field for sound to travel away from the source so it can be absorbed by the third concept. As previously discussed, plenty of vegetation in the spa area is intended to absorb noise. It is also important to consider the intended function. As a spa the patrons would expect the requirement for quiet.

The spa process involves a visitor procession from hot bath to cold bath or shower and then rest. As such the functions along with ramp path are organized to this procession. For the hot baths there are 2 hot baths (hot tubs) located at the ramp ½ point and below (the walls of the lower form the edges f the one above), 1 steam room (south-east corner of spa volume) and 1 sauna (north-

west corner of spa volume). The cold sources are cold podium (entry into spa volume), cold bath (just beyond cold podium) and cold showers (across from sauna and steam rooms). The rest areas include 2 dark retreat rooms (located behind the concierge desk), 2 lay down rooms (rest rooms 1 and 2) isolated from rest of spa with 1 dedicated to hearing system (south-west corner of spa volume) and 1 to smell system (north-east corner of spa volume), and miscellaneous resting areas provided by benches (stairs and top of stairs under spa volume windows). It is important to note that the derobe areas outside the rest rooms for sound and smell help isolate the rest rooms from the rest f the spa but also provide a perceptual cleansing area for the inhabitant. There is also a café at the top of the ramp (south-west corner of spa volume above lower function) where one can lounge and read a book if desired (refer to event explanation below for more detail). In the summer time, or if inclined during the winter, the rooftop garden is also intended to be used as a rest area. The garden has foot pools to soak ones feet during a restful contemplation.

To explain how the dark retreat rooms work, two dark retreat rooms (refer to research for explanation of Buddhist practice of "dark retreat") are included with the project program and located behind the concierge desk. The duration of exposure would be between 5 to 15 minutes. These rooms would provide the ultimate disconnection from the stresses of life. They function with the help of technology. While the door is open a light within the floor turns on to provide circulation light. The inhabitant sets a time within the room for the duration of their stay. At the maximum of 15 minutes the door would release, light levels gently raise and music begins to play. There is a comfortable chair within the room that can recline into a bed.

The reception desk is placed between the admin area and at the change room entry point. The intention was to develop a plan that could be served by as few employees as possible. With the reception desk location, the café on the second floor and the concierge desk in the spa only three employees are required during hours with little inhabitants. Placing the concierge desk in the middle one the spa functions allows the needs (fresh towels or more water) of an inhabitant to be serviced with ease.

The plan was developed so that the space could be serviced (dirty towel pick up and general cleaning) with little disturbance to the inhabitants. Each level can be accessed from the elevator and supplies stored in the basement. Placing the reception / loading dock where it is ensures no perception to the inhabitants. It is important to note that the loading dock area is labeled as reception as this is also the point where employees enter the building. The materials loaded through this point would typically be laundry and cleaning materials. The finishes of this area are far nicer than a typical loading dock area. The admin area is located next to the loading area and near the reception desk for obvious reasons. Also, the admin is located where it is to facilitate the Membership area where people joining the spa can be impressed by the facility and want to pledge their support.

The intention of the Lounge within the entrance vestibule and Partner Waiting Area are for individuals either waiting for the rest of their party to arrive at the spa or get changed in the change room.

Regarding the question of genuine versus plastic raised in the research each sensory system is appeased with a natural root. For sight, the interior is lit with natural light and only artificial light used is what is required for circulation. As previously explained natural light penetrates through the windows and skylights. For the hearing system, the waterfall and water troughs provide sound with gravity. For the smell system, the natural materials used are unfinished, when appropriate, allowing their inherent scents to emit. For haptic system, the project circulation utilizes a sloped ramp.

Regarding the building systems as previously explained the structure is concrete. The foundation, columns and beams are concrete. The first floor slab and roof slab are also concrete. The intermediate floor (second floor) is basic wood structure (refer to presentation boards for cross section). All mechanical systems service the building either through the four shafts within the spa volume or through the shafts shown in the "core" volume (housing stair, elevators, washroom and mechanical shafts). All main level rooms are serviced from the basement level and all second floor rooms are serviced from the underside of the roof slab. With most inhabitants walking around roved or on bathing suites and more than likely wet it is ideal to eliminate airflow across their skin. This is achieved by radiant floor heating in the areas with concrete floors. The spaces are exhausted from below the ceiling line. For example in the spa volume the exhaust happens at the ceilings highest points (top of window wells) and through the four shafts shown on the floor plans.

Events

Events were developed throughout the design in areas where an engagement between inhabitant and architecture could occur. The process required first understanding the typical condition and then considering how as "event" can be created.

The first event presented on the presentation boards is that of the arrival. The vestibule is intentionally sized to fit one person. Its width is the perceptual distance of a person with outreached arms (see Sensory Thresholds exercise and research paper for more information). Its length would be mandated by code. The metaphor of the first event is that of perceptual cleanser. The intention is to disconnect a visitor with the stresses of their life. Refer to presentation board for more information such as description and characteristics.

The second event is the door into the spa functions. It provides a haptic, sight, and sound experience. When one leaves the change rooms and is about to enter the spa they must first walk through these monumental doors that mark the start of their spa experience. The metaphor of this event is that of a large stone in front of a cave. The doors are large rough-cut stone doors hung from a guide with rollers. Opening the doors would require reasonable effort (haptic system engaged) and the noise would be a low rumble (hearing system engaged). Refer to presentation board for more information such as description and characteristics.

The third event deals with the rooftop garden. It provides an all encompassing and somewhat chaotic sensory experience because it is uncontrolled. Metaphor for this event is rooftop gardenscape. It is intended for an individual to use the rooftop as a rest station. The rooftop will

have vegetation growing and a Zen like atmosphere. As the site is located in an urban context street noise must be dealt with. As the site has a tall neighbouring building privacy must be provided for those using the rooftop garden. The resultant design cuts street noise with the form acting as a baffle while permitting the bells from the church to be heard. The location of the rooftop garden on the south-west corner of the building places it furthest away from the tower on the east. The architecture itself blocks line of site to most of the garden.

The fourth event deals with the typical spa circulation. This provides a haptic experience but is meant mostly to cleanse the perceptual palate. The metaphor for this event is solitude equals rest. The intention is to provide the circulation path for one individual only as a means to ensure one cleanses their perceptual palate before entering the next spa function. As such the dimension of the circulation are 1.7m wide or the width of our outreached hands and 2.4m tall or the height of our reach. Refer to the presentation boards for description and characteristics of this event.

The fifth event covers the rest areas to sound and smell systems. The metaphor for the sound room is that of river bed. The idea here is beside the cushioned seats designed for an individual to lay down there are water troughs with pebbles. When the water washes over the pebbles it would make the sound of a river bed. Refer to presentation boards for characteristics and further description.

The sixth event covers the sauna room. This is intended to provide a haptic experience. The metaphor for this room is soft comfort and it is responding to the typical condition of saunas with right angles and sharp edges. This sauna has rounded seats formed to conform to the body. Refer to presentation boards for characteristics and further description.

The seventh event deals with the cold baths. This area is intended to cleanse the perceptual palate. These areas are intended to be plunge pools. The duration is quick so it is sized only for one person at a time. Constructed like adobe construction that is formed with rounded edges rather than straight ones (evolved from rather than carved into). Refer to presentation boards for characteristics and further description.

The eighth event covers the steam bath area. These areas are dedicated to the scent system, as steam is a great vehicle for scents. Refer to presentation boards for characteristics and further description.

The ninth event covers the doors of the building and along the spa path. Doors serve as an opportunity for a haptic experience. Refer to presentation boards for characteristics and further description.

The tenth event is the hot bath and it involves a sound experience. The two different hot bath environments provide different acoustic experiences. This event deals with the one located within the large spa volume. The metaphor for this space is intimate conversation where an individual

can speak to a partner near by and not feel as thought they are bothering someone else. Refer to presentation boards for characteristics and further description.
The eleventh event covers the temperate pool area. The metaphor for this event is gathering communal area. It is intended to be the heart of the spa with the longest duration of stay. Refer to presentation boards for characteristics and further description.

The twelfth event deals with the smaller enclosed hot bath. The metaphor for this room is whisper room. It is a small entirely hard surfaced room. Anyone speaking in this room would be self conscious of their voice and this would induce absolute quiet. Refer to presentation boards for characteristics and further description.

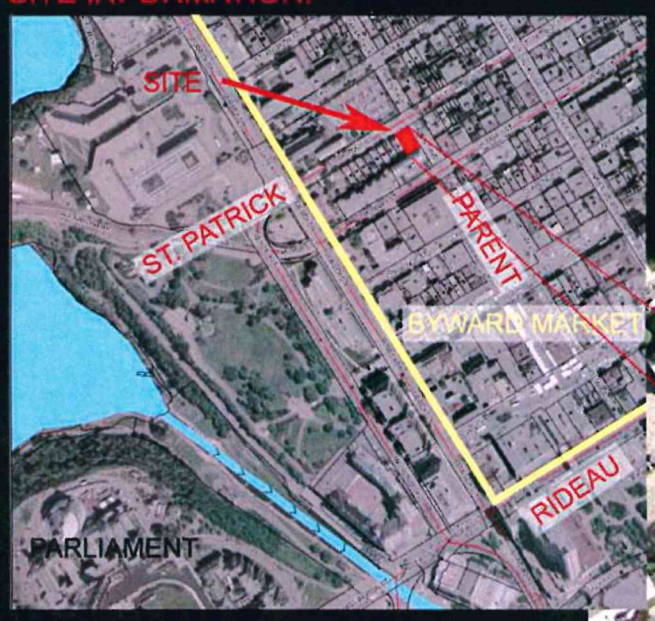
Refer to the following pages for reductions of presentation boards used during the final Thesis presentation in May 2008. Following the presentation board reductions is the Demonstration Project Conclusions.

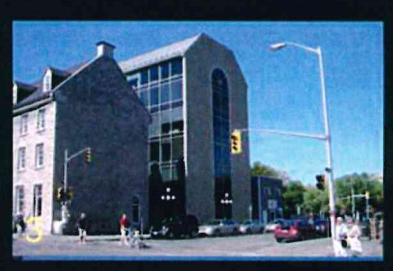
A BLIND SENSIBILITY

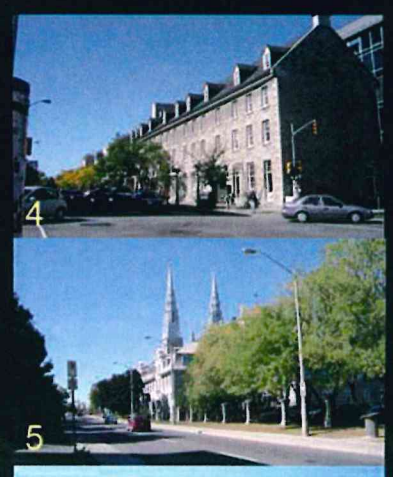
A NON VISUAL EXPERIENCE OF ARCHITECTURE

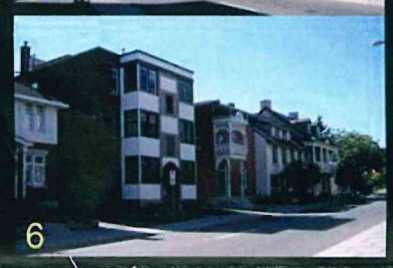
DEMONSTRATION PROJECT

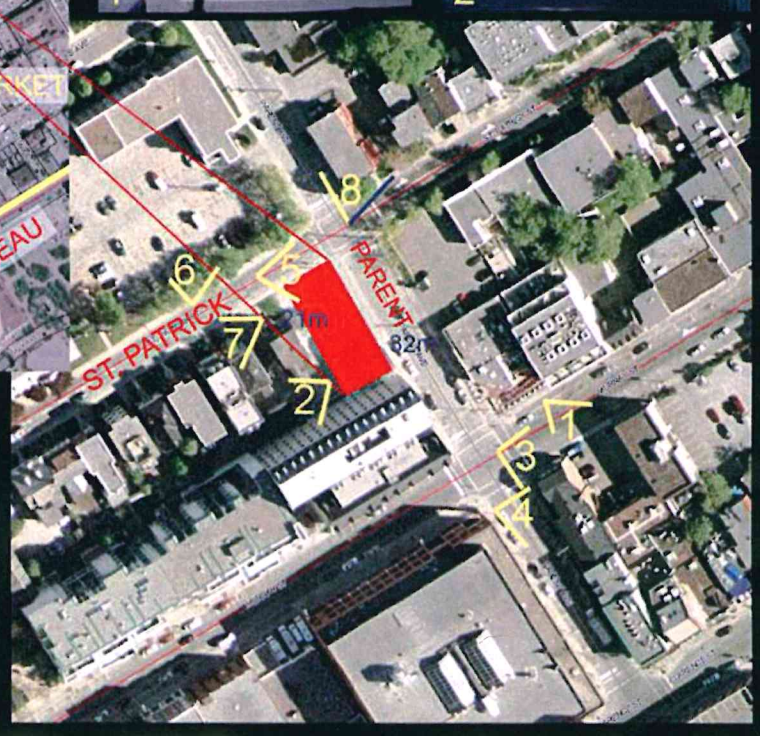
SITE INFORMATION:









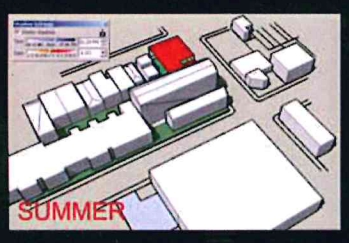


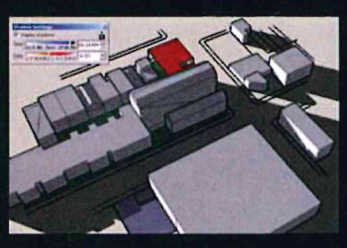
SITE DATA:

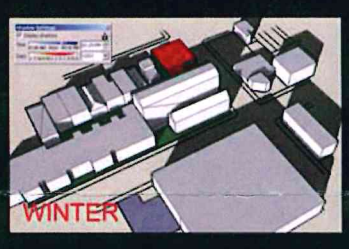
SITE AREA @ 672 m2 OR 7140sq.ft
FRONTAGE ON PARENT 35 m
ON ST. PATRICK 24 m
MAX HEIGHT @ 11m OR 36'-0"
PARKING: 0 SPACES REQUIRED
FSI: NO MAX
SETBACKS: 0-LOTLINE (1 SELF IMPOSED)

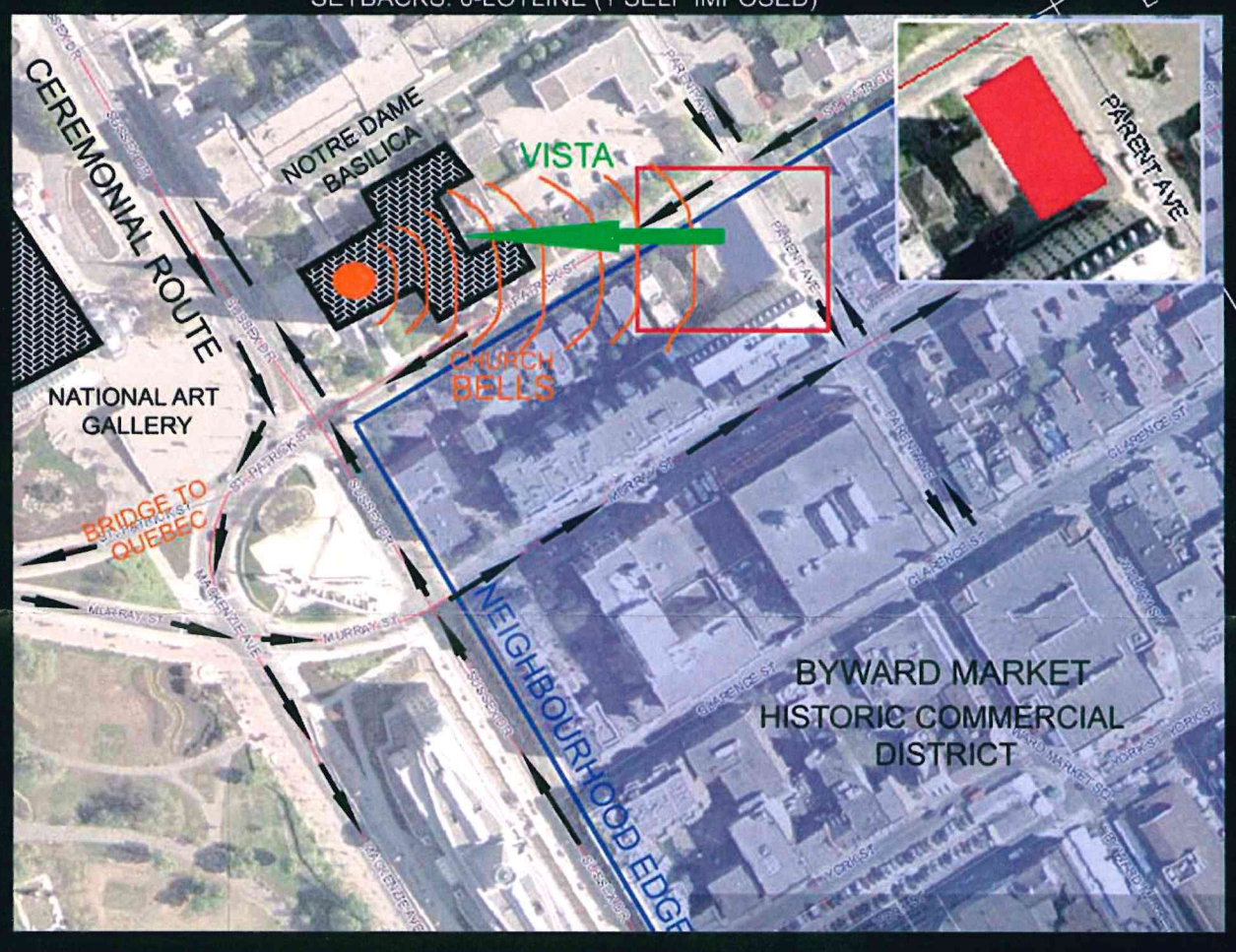
HIGH TRAFFIC COMMERCIAL STREET (ENTRANCE NODE)

HIGH TRAFFIC COMMERCIAL STREET (NEIGHBOURHOOD EDGE DEFINITION









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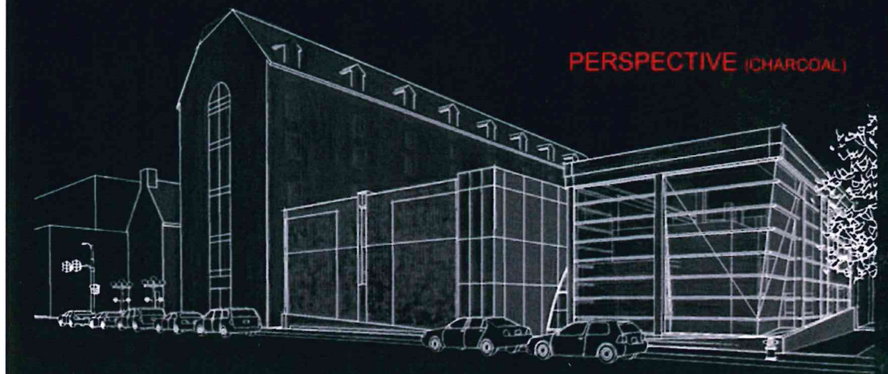
Presentation board #7
Topics covered on board:
Demonstration Project Site and Urban Design Approach

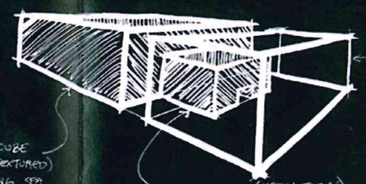
Board used at D9B - Program and Design Development (Demonstration Project) presentation May 2008

A BLIND SENSIBILITY

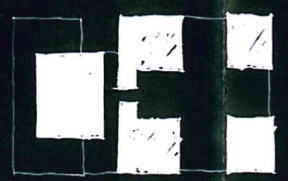
A NON VISUAL EXPERIENCE OF ARCHITECTURE

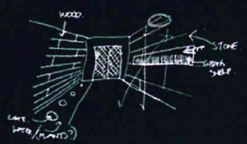
PERSPECTIVE (CHARCOAL)

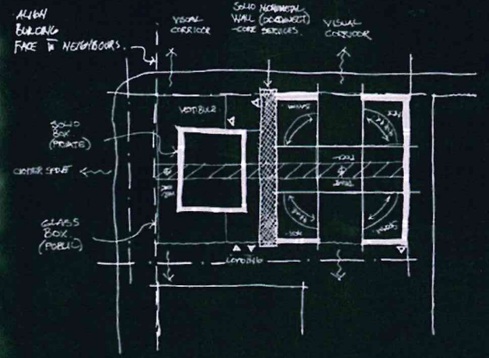




PARTI







ROOM NAMES:

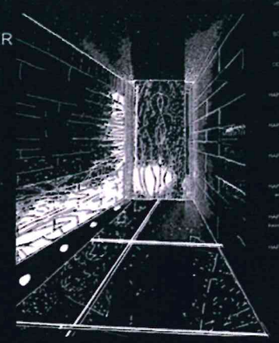
AD	ADMINISTRATION	MR	MEETING ROOM
CA	CAFE	R	REST
CB	COLD PLUNGE BATH	RA	REST (SOUND)
CS	COLD SHOWER	RE	RECEPTION
CP	COLD PODIUM	REC	RECEIVING
CH-M	MALE CHANGE ROOM	RG	ROOF GARDEN
CH-W	FEMALE CHANGE ROOM	RO	DEROBE AREA
CO	CONCIERGE DESK	RS	REST (SMELL)
D	DARK RETREAT ROOM	SA	SAUNA
ELC	ELECTRICAL	SEQ	SPA EQUIPMENT
ELV	ELEVATOR EQUIPMENT ROOM	ST	STORAGE
EQ	GENERAL EQUIPMENT ROOM	SM	STEAM
HOT	HOT BATH	SV	PRE-SPA VESTIBULE
LA	LAUNDRY	TMP	TEMPERATE BATH
LO	LOUNGE	TR	TREATMENT ROOM
LPS	PARTNER WAITING AREA	WE	WELCOME DESK
MCH	MECHANICAL ROOM	WM	MEMBERSHIP AREA

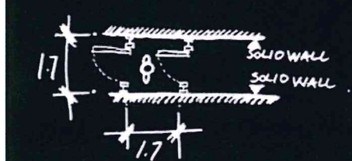
FIRST EVENT - ARRIVAL

METAPHOR: REST AND CLEANSING - VESTIBULE AS PERCEPTUAL CLEANSER FORCES INHABITANT TO BREAK THE TENSION OF EVERYDAY LIFE.

DESCRIPTION: TWO LARGE WOODEN DOORS IN SUCCESSION. ONLY ONE PERSON IS PERMITTED AT A TIME.

CHARACTERISTICS: DARK AND QUIET ROOM. SMELLS OF WOOD AND STONE. TEXTURES OF STONE AND WOOD.



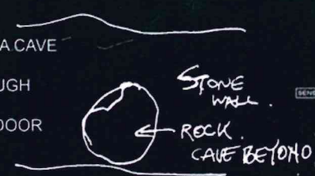


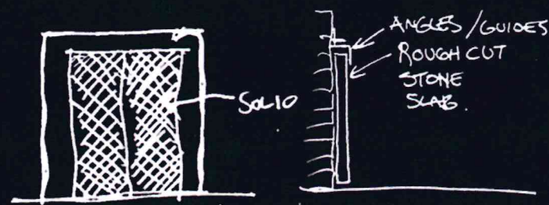
SECOND EVENT - SPA DOOR

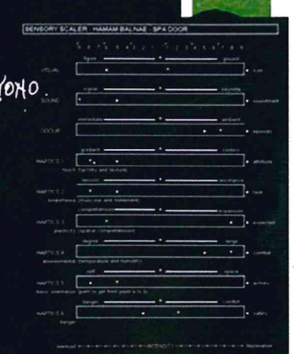
METAPHOR: STONE IN FRONT OF A CAVE

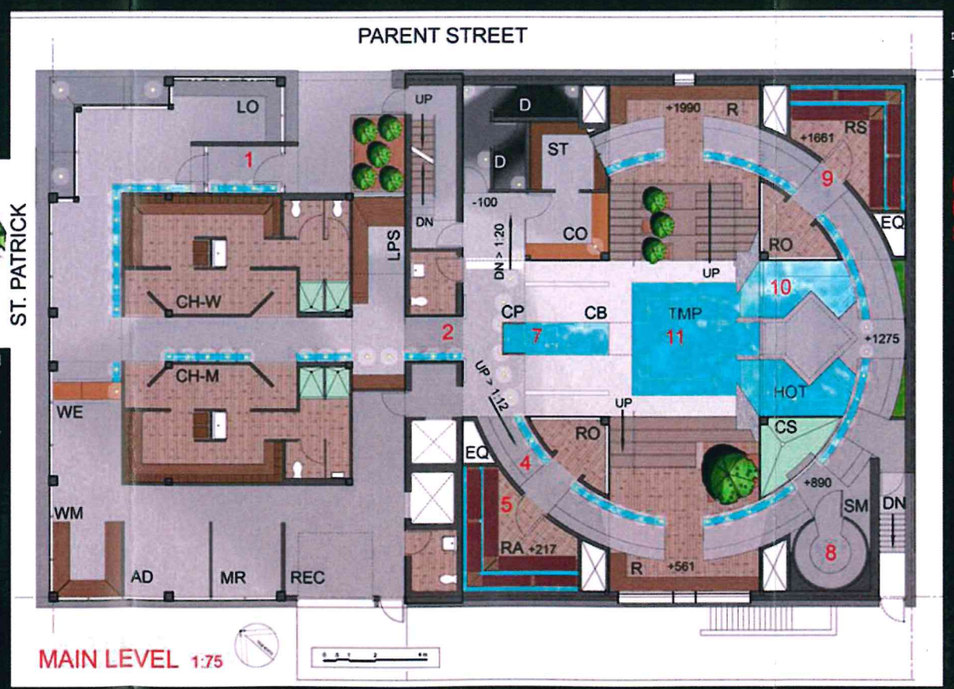
DESCRIPTION: MONUMENTAL

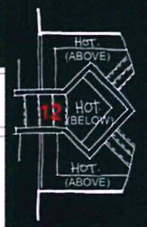
CHARACTERISTICS: 2 LARGE ROUGH CUT STONE DOORS ON ROLLING TRACK. RUMBLING NOISE WHEN DOOR OPENS. WOOD LINED WITH SOFT CORNERS..











HOT TUBS EXPLANATORY SKETCH

txt

Presentation board #8
Topics covered on board:
Project Parti, Main Level Plan, Events One and Two, Perspective Rendering From Intersection of Parant and St.-Patrick, and Room Name Legend

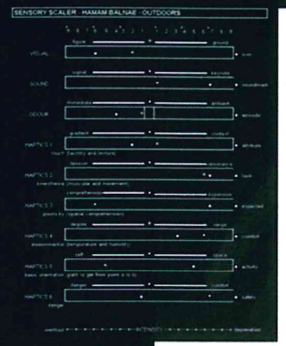
Board used at D9B - Program and Design Development (Demonstration Project) presentation May 2008

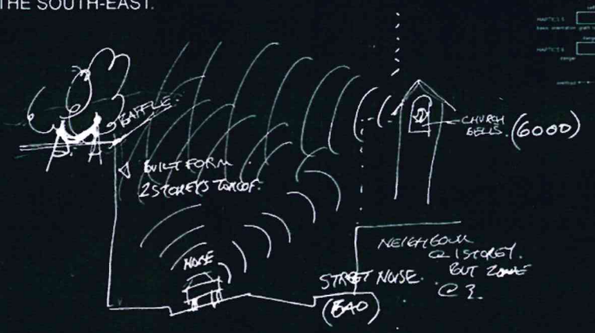
A BLIND SENSIBILITY

A NON VISUAL EXPERIENCE OF ARCHITECTURE

THIRD EVENT
- ROOFTOP

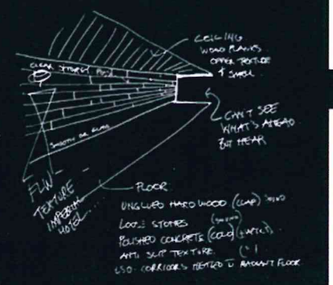
METAPHOR: OUTDOOR GARDENSCAPE
DESCRIPTION: STREET NOISE MUST BE ELIMINATED AND PRIVACY FROM NEIHBOURS. TO BE MONUMENTAL
CHARACTERISTICS: BUILT FORM CUTS STREET NOISE BUT PERMITS CHURCH BELLS. BUILT TO PROVIDE PRIVACY FROM NEIGHBOURING TOWER TO THE SOUTH-EAST.

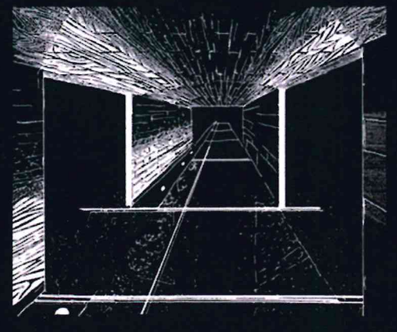


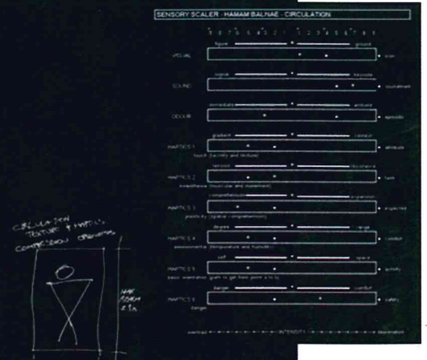


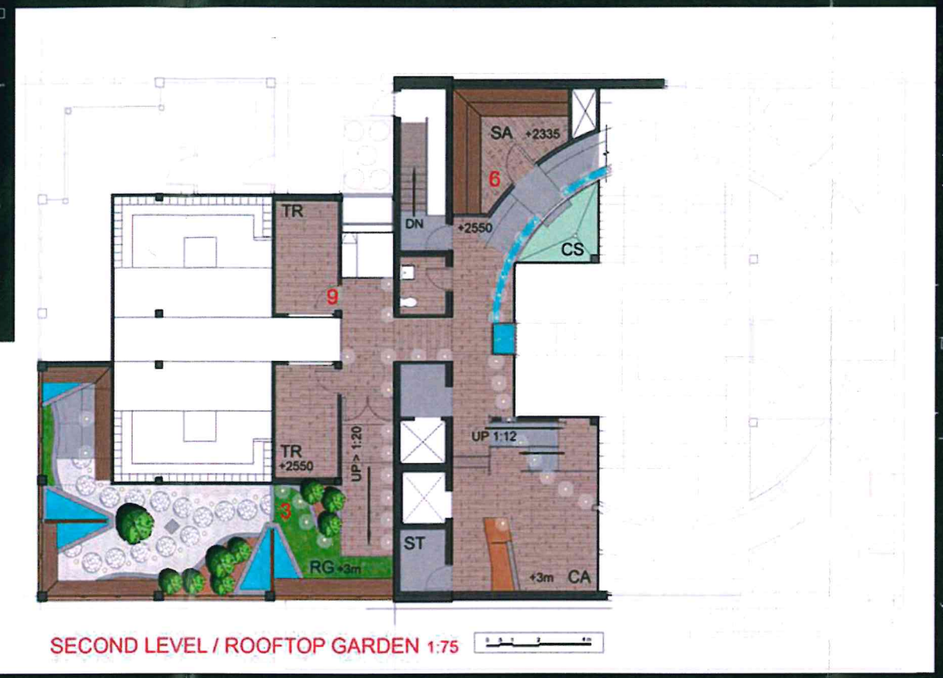
FOURTH EVENT
- TYPICAL CIRCULATION

METAPHOR: SOLITUDE = REST
DESCRIPTION: 1.7 m WIDE, 2.3 m TALL, CEILINGS ARE NATURAL WOOD (TEXTURE AND SCENT), FLOOR IS EITHER UNGLUED WOOD (CLAPPING), LOOSE STONES, OR POLISHED CONCRETE.
CHARACTERISTICS: DARK AND QUIET, SMELLS OF WOOD AND STONE, PROGRESSION FROM PUBLIC TO PRIVATE SPACE IS MARKED WITH TEXTURE. LIGHTING THROUGHOUT TO PROVIDE NO MORE THAN CIRCULATION LIGHTING.

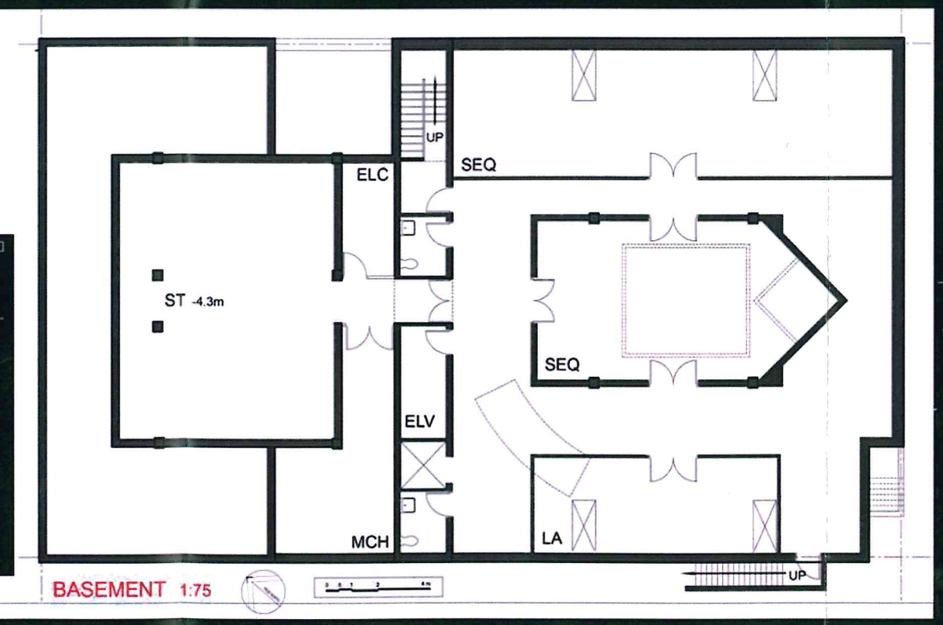




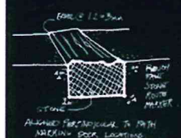


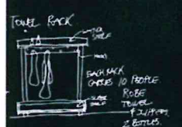


SECOND LEVEL / ROOFTOP GARDEN 1:75

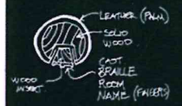


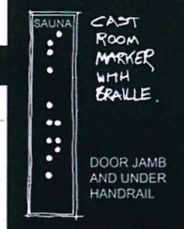
BASEMENT 1:75





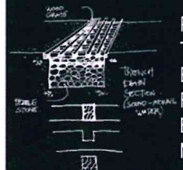
DEROBE TOWEL RACK





DOOR JAMB AND UNDER HANDRAIL

ROOM NAME MARKERS



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Presentation board #9
Topics covered on board: Events Three and Four, Second Floor and Roof Top Plan, Basement Floor Plan, and Miscellaneous Vignettes

Board used at D9B - Program and Design Development (Demonstration Project) presentation May 2008

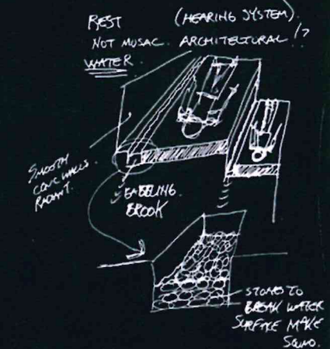
A BLIND SENSIBILITY

A NON VISUAL EXPERIENCE OF ARCHITECTURE

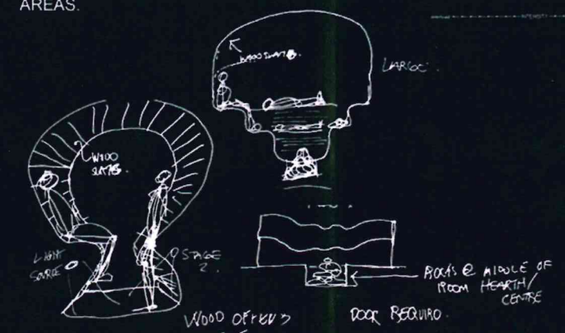
FIFTH EVENT
- REST AREAS (SOUND AND SMELL)

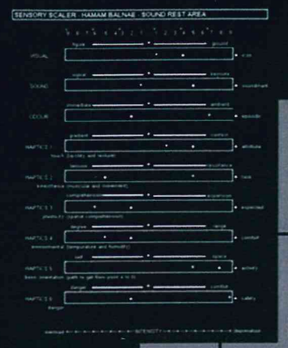
TYPICAL CONDITION: QUIET AND COMFORTABLE AREAS, HIGH TEMPERATURE, ISOLATED FROM OTHER AREAS, DOORS MUST CLOSE QUIETLY, THE FLOOR MUST NOT MAKE A NOISE, RADIANT FLOOR HEATING.

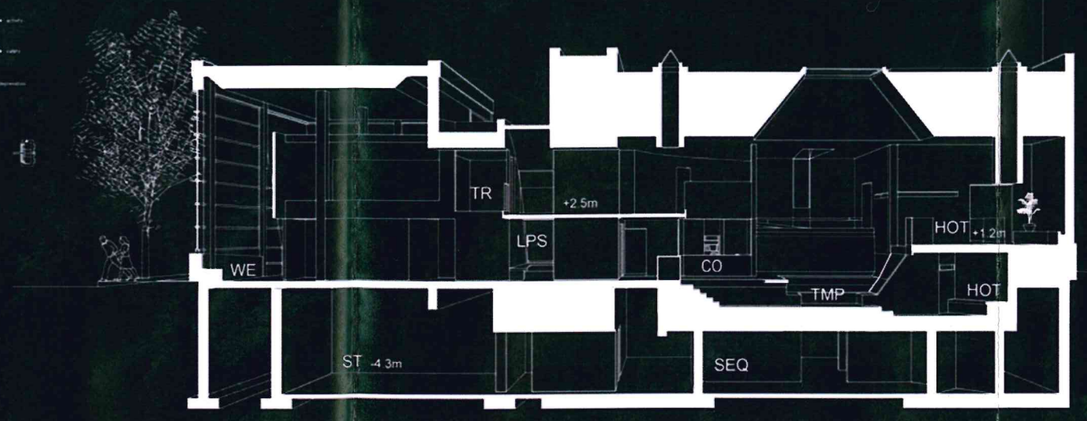
SOUND:
METAPHOR: RIVER BED
DESCRIPTION: WATER RUNNING THROUGH SPACE TO PROVIDE WHITE NOISE AND AUDITORY LANDMARK.
CHARACTERISTICS: CUSHIONED BEDS WITH WATER TROUGH BESIDE EACH BED.



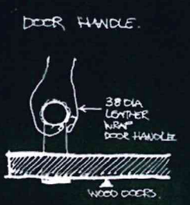
SIXTH EVENT
- SAUNA (HAPTICS)
METAPHOR: SOFT/COMFORT
DESCRIPTION: WOOD LINED WITH SOFT CORNERS..
CHARACTERISTICS: SEATS FORMED TO FIT SHAPE OF BODY. INTIMATE TO GROUP AREAS.

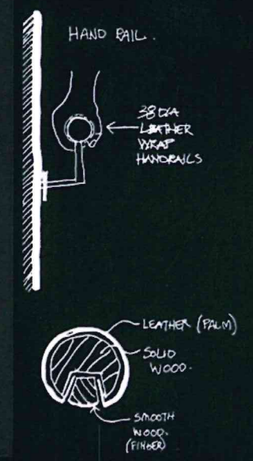






SECTION / PERSPECTIVE THROUGH CENTRAL CIRCULATION SPINE





HAND AND DOOR RAIL DETAILS (TACTILITY)

txt

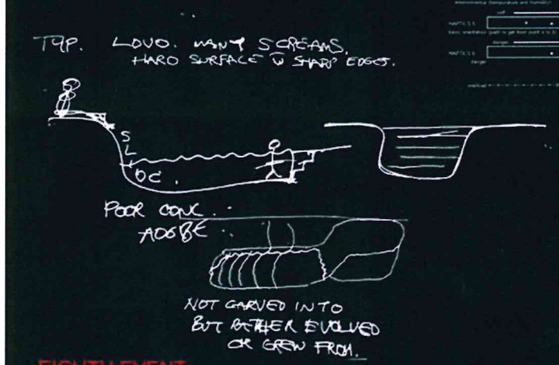
Presentation board #10
Topics covered on board:
Events Five and Six, Site Plan, Building Section / Perspective 1, and Miscellaneous Vignettes

Board used at D9B - Program and Design Development (Demonstration Project) presentation May 2008

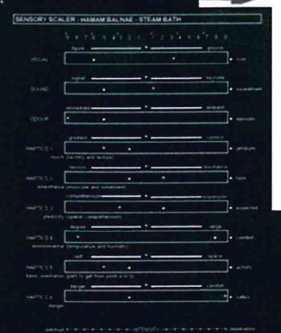
A BLIND SENSIBILITY

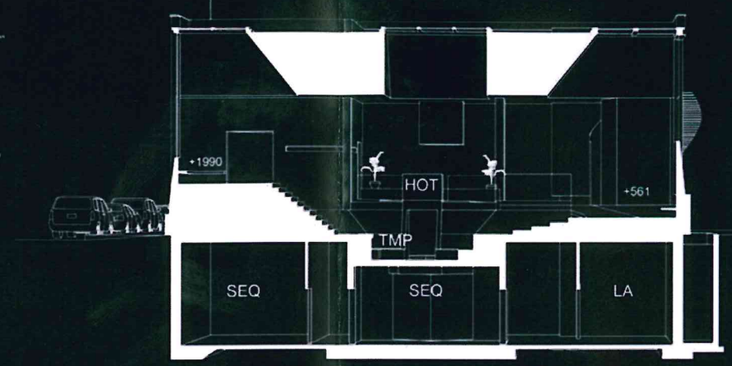
A NON VISUAL EXPERIENCE OF ARCHITECTURE

SEVENTH EVENT
- COLD BATH (INTERSECTION)
METAPHOR: PLUNGE POOLS
DESCRIPTION: SIZED FOR ONE AS DURATION IS QUICK.
CHARACTERISTICS: POURED CONCRETE LIKE ADOBE CONSTRUCTION NOT CARVED INTO BUT RATHER EVOLVED FROM.

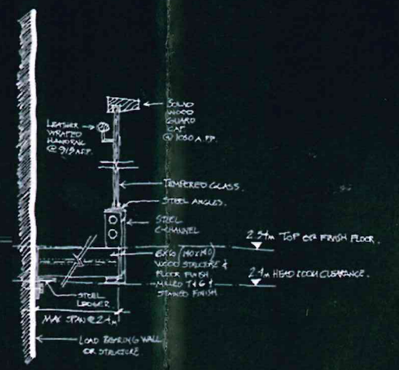


EIGHTH EVENT
- STEAM BATH (SCENT)
METAPHOR: SCENT STACKS
DESCRIPTION: TALL GLASS TUBE FILLED WITH STEAM\
CHARACTERISTICS: SMALL GLASS TUBES WITH GLASS DOORS.

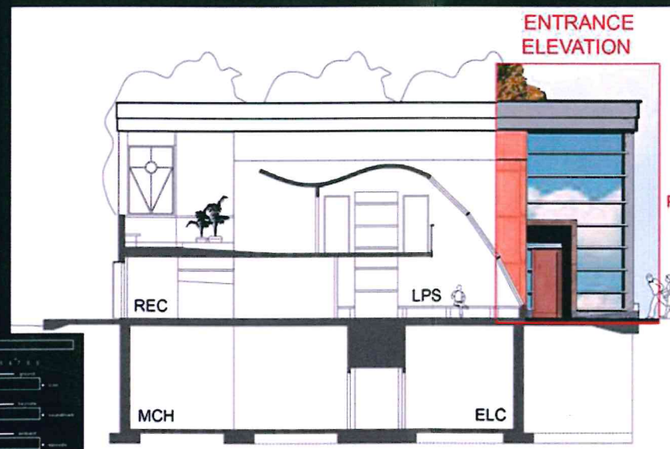




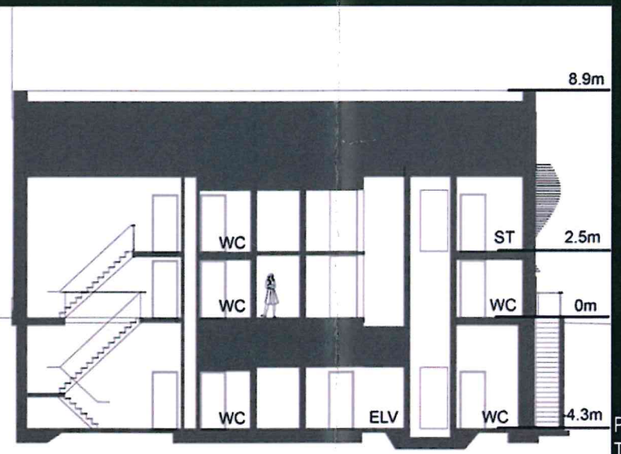
PERSPECTIVE / SECTION THROUGH SPA



INTERMEDIATE FLOOR STRUCTURE / GUARD RAIL SECTION



BUILDING SECTION THROUGH PARTNER WAITING AREA 1:75



BUILDING SECTION THROUGH SERVICE CORE 1:75

RAMP SECTION 1:75

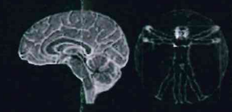
txt

Presentation board #11
Topics covered on board: Events Seven and Eight, Perspective Section 2, Building Section 2 and Building Section 3, Ramp Section, and miscellaneous vignettes.

Board used at D9B - Program and Design Development (Demonstration Project) presentation May 2008

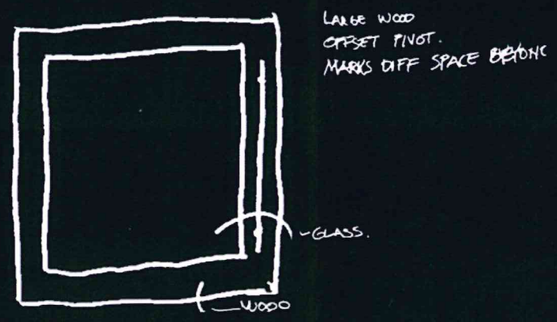
A BLIND SENSIBILITY

A NON VISUAL EXPERIENCE OF ARCHITECTURE



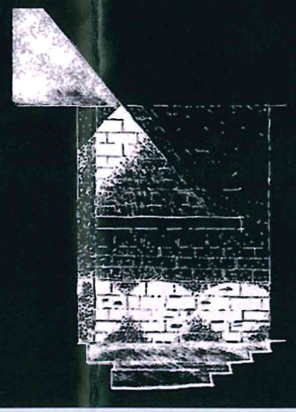
NINTH EVENT - TYPICAL DOORS (HAPTICS/SOUND)

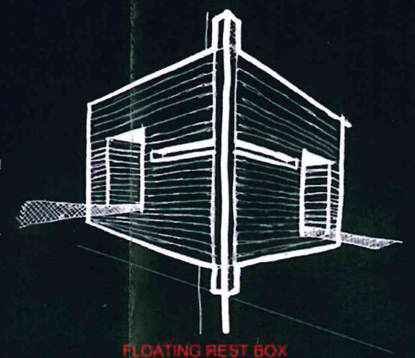
METAPHOR: ARCHITECTURAL HANDSHAKE
DESCRIPTION: LARGE WOODEN DOORS WITH OFFSET PIVOT HINGES.
CHARACTERISTICS: FUNCTIONALITY HEIGHTENED AWARENESS OF DIFFERENCE.



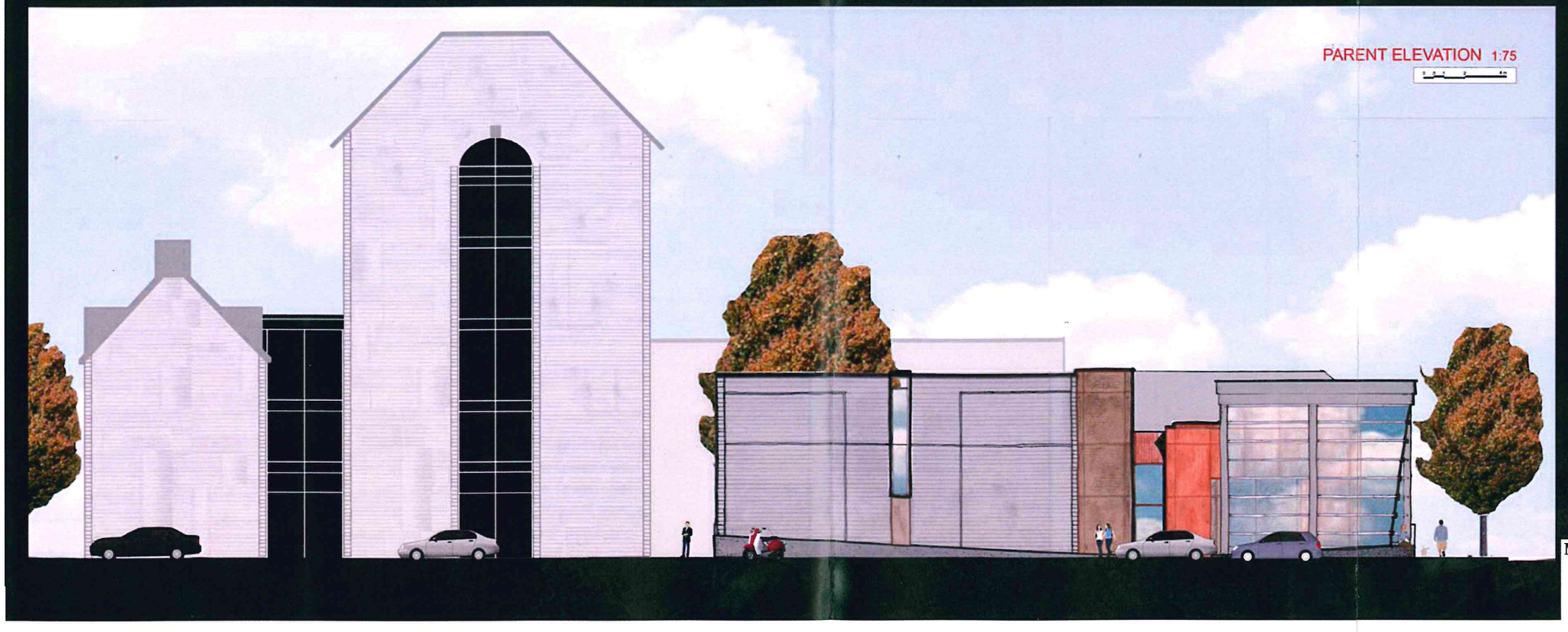
TENTH EVENT - HOT BATH 1 (ACOUSTICS)

METAPHOR: INTIMATE CONVERSATION
DESCRIPTION: CLOSE ENVIRONMENT ALLOWING CONVERSATION
CHARACTERISTICS: HARD TEXTURED SURFACES, LARGE VOLUME OF SPACE AND WATER THRESHOLD





FLOATING REST BOX AND BRIDGES



txt

Presentation board #12
Topics covered on board: Events Nine and Ten, Parent (front) Elevation and miscellaneous vignettes.

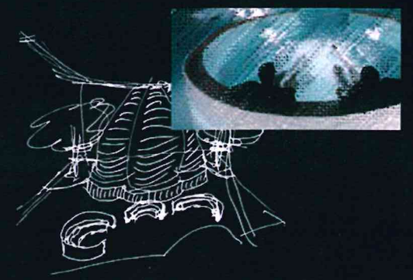
Board used at D9B - Program and Design Development (Demonstration Project) presentation May 2008

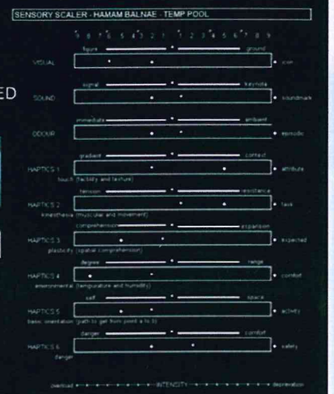
A BLIND SENSIBILITY

A NON VISUAL EXPERIENCE OF ARCHITECTURE

ELEVENTH EVENT
- TEMPERED POOL

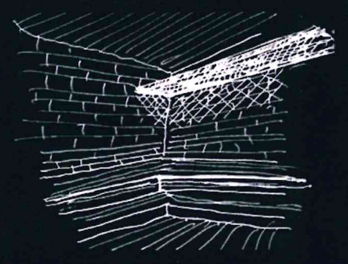
METAPHOR: GATHERING COMMUNAL AREA
DESCRIPTION: LARGE GATHERING AREA AT HEART OF SPA
CHARACTERISTICS: LARGE POOL ORGANIZED AGAINST TEXTURED WALL

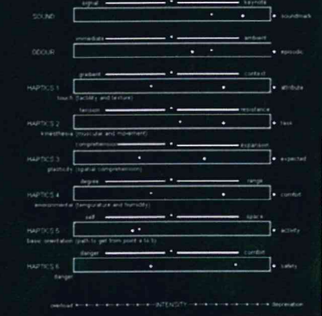


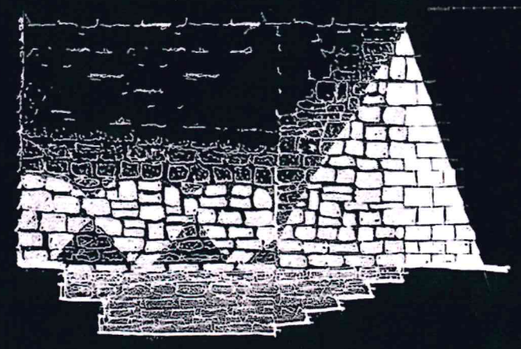


TWELFTH EVENT
- HOT TUB 2 (ACOUSTICS

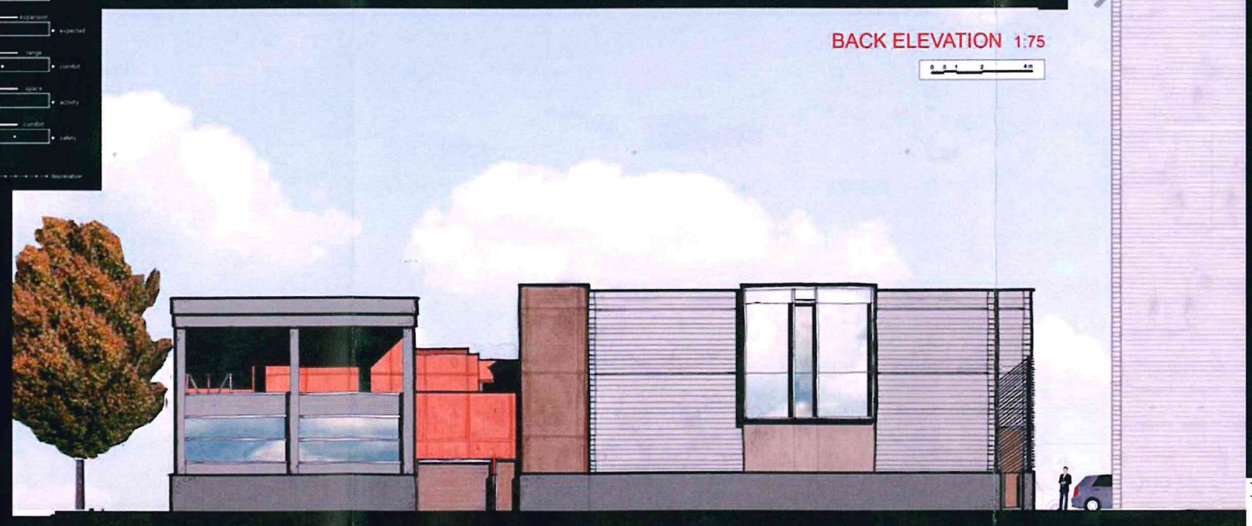
METAPHOR: (SOUND) WHISPER ROOM
DESCRIPTION: CLOSE ENVIRONMENT BUT WITH HIGHLY REFLECTIVE SURFACES INDUCING QUIET
CHARACTERISTICS: HARD SURFACED AND HIGHLY TEXTURED WALLS.



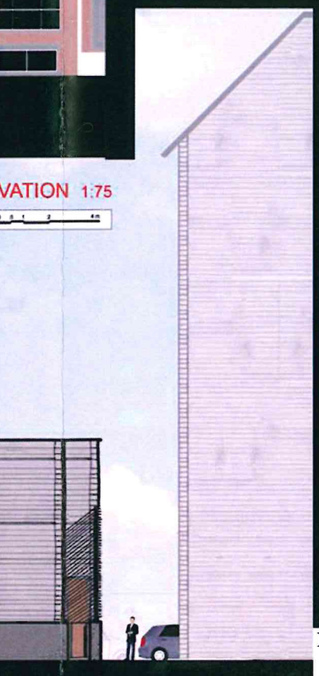




ST. PATRICK ELEVATION 1:75



BACK ELEVATION 1:75



txt

Presentation board #13
Topics covered on board: Events Eleven and Twelve, St. Patrick Elevation and Back Elevation, and miscellaneous vignettes.

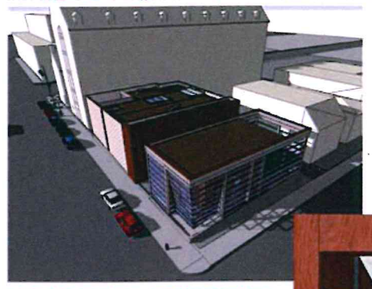
Board used at D9B - Program and Design Development (Demonstration Project) presentation May 2008

A BLIND SENSIBILITY

A NON VISUAL EXPERIENCE OF ARCHITECTURE

0 LOT LINE ELEVATION 1:75

IMAGES FROM FLY THROUGH ANIMATION REFER TO WWW.ABLINDSENSIBILITY.COM FOR ANIMATION



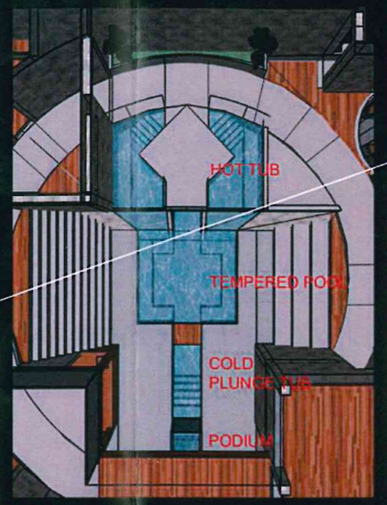
BIRDS EYE VIEW - FROM CORNER OF PARENT AND ST.PATRICK

ENTRANCE RECESS

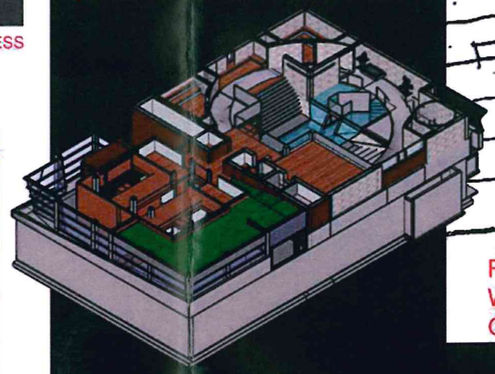
CENTRAL SPINE TOWARDS SPA

INTERIOR OF SPA AREA - FROM BEHIND COLD PODIUM

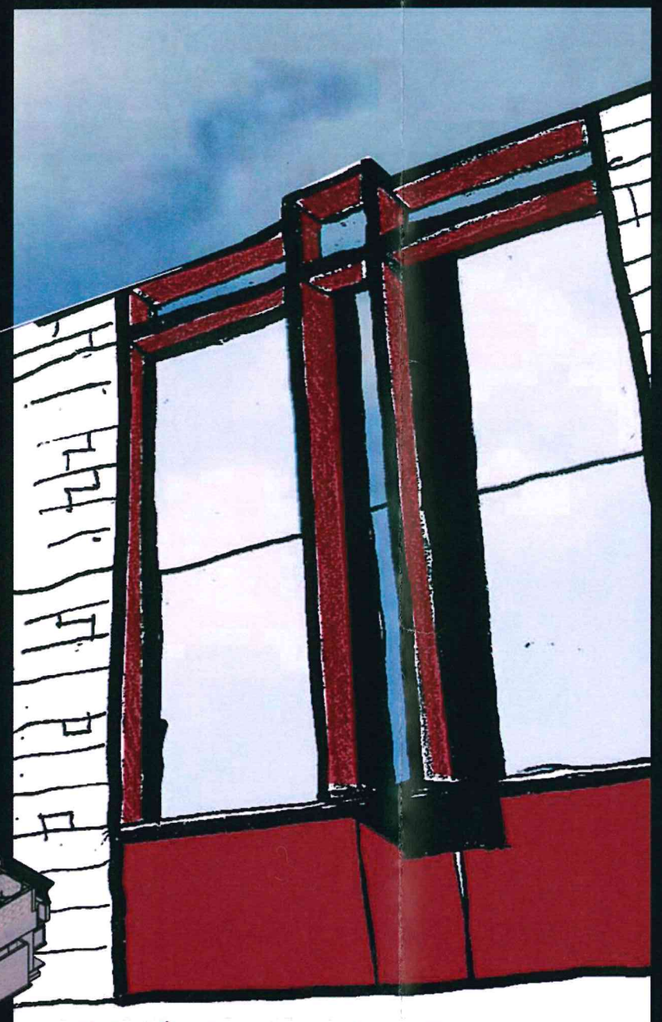
INTERIOR OF SPA AREA - LOOKING TOWARD COLD PODIUM AND CAFE



RENDERING - TUB PROCESSION (COLD PODIUM TO HOT TUB)



ISOMETRIC MODEL (SECOND LEVEL CUT)



RENDERING SHOWING BACK SPA WINDOW, STEEL MULLIONS, FROSTED GLASS AND CLEAR GLASS PANELS

RAIC SYLLABUS
D9 - THESIS
MICHAEL PEIXOTO
ON010030-OTT

txt

Presentation board #14
Topics covered on board:
0-Lotline Elevation, Tub Procession Rendering, First Floor Isometric Model, Spa Back Window Rendering , Vignettes of Project Walk Through Animation

Board used at D9B - Program and Design Development (Demonstration Project) presentation May 2008

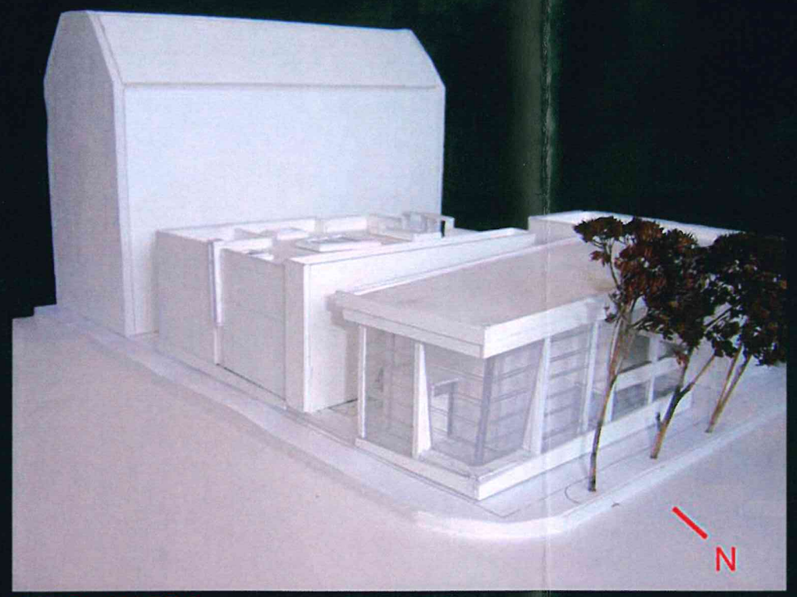
A BLIND SENSIBILITY

A NON VISUAL EXPERIENCE OF ARCHITECTURE

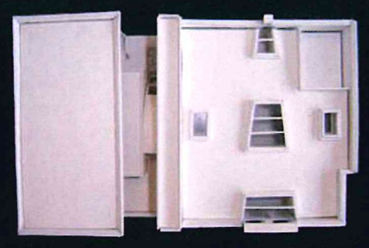
MODEL PICTURES

MODEL IMAGE 1 - FROM PARENT

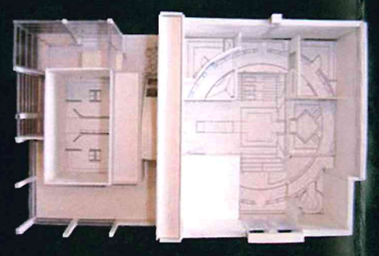
MODEL IMAGE 2 - FROM CORNER OF PARENT AND ST. PATRICK



MODEL IMAGE 3 - BIRDS EYE FROM INTERSECTION

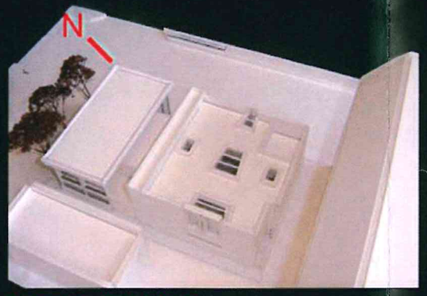


MODEL IMAGE 6 - ROOFTOP



MODEL IMAGE 7 - INTERIOR OF MODEL

MODEL IMAGE 4 - BIRDS EYE FROM WEST CORNER



MODEL IMAGE 5 - BIRDS EYE FROM SOUTH CORNER

MODEL IMAGE 8 - INTERIOR OF SPA

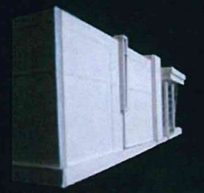


IMAGE 9 - APEARANCE FROM PARENT STREET

IMAGE 10 - SPA FRONT WINDOW

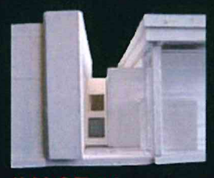


IMAGE 11 - FRONT ENTRANCE

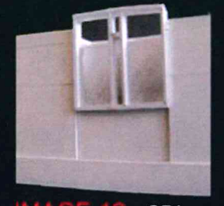


IMAGE 12 - SPA BACK WINDOW FROSTED GLASS AND CLEAR GLASS PANELS

RAIC SYLLABUS
D9 - THESIS
MICHAEL PEIXOTO
ON010030-OTT

txt

Presentation board #15
Topics covered on board:
Pictures of Architectural Model

Page assembled for Final Thesis Package but model was built for and shown at D9B - Program and Design Development (Demonstration Project) presentation May 2008

A7 Demonstration Project Conclusion:

The thesis determined how a deeper experience of architecture can be provided by investigating the modalities of a spatial experience (senses). In response to the preliminary investigation, the senses other than site were focused on. This further investigation was guided by how the blind experience architecture. What was determined is how to provide an architectural experience without a reliance on the sight system. This is referred to as **A BLIND SENSIBILITY**. The determination was utilized and reflected on the preceding Demonstration Project.

The final design **explored each sense** to determine how they could be appropriately applied to architecture. This exploration formed the design concept of "intersection, transition and rest". The architecture evolved from a primary consideration for the experience of the inhabitant. A series of "**EVENTS**" were developed to engage a sensory system of the inhabitant. Any visual characteristics of the building were considered only after all the other senses were appeased.

The **design is successful** because it focuses on and demonstrates the findings of the thesis research. In this case, the design is a result of designing with A Blind Sensibility.

The **thesis is successful** because it takes a theoretical position, provides research determining an appropriate application of the theory in architecture and then demonstrates it in the built form.

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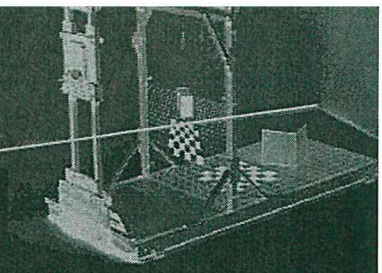
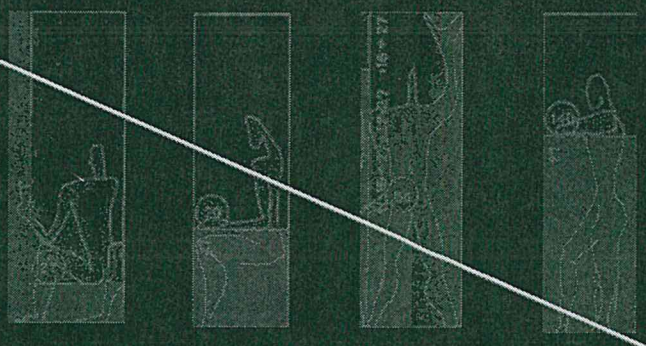
A Blind Sensibility –
A Non Visual Experience of Architecture



APPENDIX 'B'
Anatomy of Our Sensory Systems



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Appendix B – Anatomy of Our Sensory Systems

Sight System – Body Part "The Eyes"[1]

We see through our eyes and how we see is light rays enter the eye across the cornea. The cornea and lens focus an image of the outside world onto the retina. Light is absorbed by photopigment into two classes of receptors, rods and cones. The rods are stimulated by dim lighting and the cones by day or bright conditions. The retina then communicates with the brain by converting patterns of light into neural information.

The lateral geniculate nucleus, and the primary and secondary visual cortex of the brain is where the neural information is processed. According to this Gestalt (mentioned above) there are six main factors that determine how we group things according to visual perception: Proximity, Similarity, Closure, Symmetry, Commonality and Continuity.

Hearing System – Body Part "The Ear"[2]

Anatomy of the ear. The folds of cartilage surrounding the ear canal are called the *pinna*. The sound waves enter the ear canal and are amplified from between 3 and 12 kHz. The eardrum is at the end of the ear canal where the middle ear begins. The middle ear is coprised of the tympanum (eardrum) and the ear cavity (air-filled middle ear cavity) with a series of delicate bones (the malleus or hammer, incus or anvil and stapes or stirrup) these are called ossicles. The oval window converts lower-pressure sound vibrations into higher-pressure sound vibrations. Higher pressure is necessary because the inner ear beyond the oval window contains fluid rather than air. The auditory reflex of the middle ear protects the inner ear from damage. The wave form information of the middle ear is then converted ybti impulses in the ochlea.

The inner ear is comprised of cochlea (three fluid filled sections) the basilar membrane, hair cell (Corti) auditory nerve, sound (processed) must then travel through parts of the brainstem where further processesing occurs. The processed information eventually reaches the thalamus, and then it is relayed to the cortex. The primary auditory cortex is located in the temporal lobe of the human brain.

Smell System – Body Part "The Nose"

Olfactory sensory neurons communicate with the brain through the *olfactory* nerve or cranial nerve. The information results in a projection into the amygdala[3]. The amygdala is involved in responding

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[1] Gregory, Richard L. 1998. *Eye and brain; the psychology of seeing.* Toronto, Ontario. Oxford University Press.

[2] Kandel, et al Principles of Neuroscience. Fourth ed. pp 591-624. Copyright 2000, by McGraw-Hill Co.

[3] Section of brain linked with processing and storing information as memory and rationalizing emotional reactions. Amunts, Katrin (October 2005). "Cytoarchitectonic mapping of the human amygdala,

to odour. The response can be emotional and autonomic. Through the smell system information is easily stored in long term memory and has strong connections to emotional memory. It has been shown that each individual odour can render a specific spatial map of excitation in the *olfactory* bulb. It is possible that through odour encoding, the brain may be able to distinguish specific spatial conditions.

Haptic System – Body Part "The Skin"

Thermoception is the sense of our environement (tempurater and humidity) in relation to architecture we are concerened with these and not the concept of homeostatic thermoceptors which communicate with the brain our internal body temperature.[4]

Nociception is the part of our *haptic* system that perceives danger of or actual damage of our skin through pain. The three types of pain receptors are cutaneous (skin), somatic (joints and bones) and visceral (body organs). Pain is a distinct phenomenon that is difficult to find its relavence to archtecture. Like the other senses pain response is uniques to the individual. [5]

Equilibrioception or vestibular system is the portion of our *haptic* system that perceives balance is related to fluid filled cavities in the inner ear. This also includes the sense for "direction" or orientation. This is how we sense left, right, up, down, back, front (in relation to movement), wide, narrow, or how we sense that a *space* is tall or short. [6]

Proprioception is the term for the apect of the *haptic* system that deals with kinesthetics. Kinesthetic perception is the modality of body awareness. Body awarness is important especially in relation to architecture but if addressed correclty we are unaware of this sense. We are unconsciously aware of our body parts and our body within *space*. This can be demonstrated by closing your eyes and waving your hand eratically. If one has a properly functioning proprioceptive sense they will know the exact location of their hand at all times.[7]

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hippocampal region and entorhinal cortex: intersubject variability and probability maps". *Anatomy and Embryology* p210.

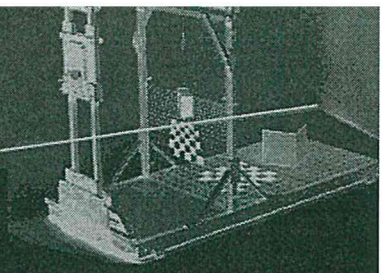
[4] Information based on documents available at www.*haptic*s-e.org/

[5] ibid

[6] ibid

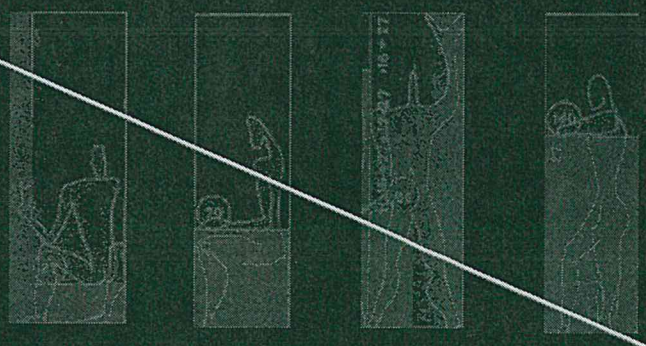
[7] Robles-De-La-Torre G. "The Importance of the Sense of Touch in Virtual and Real Environments". IEEE Multimedia 13(3), Special issue on *Haptic* User Interfaces for Multimedia Systems, pp. 24-30. (2006)

A Blind Sensibility –
A Non Visual Experience of Architecture



APPENDIX 'C'

Record of Architectural Examples and Materials Using Scaling System from Chapter 6



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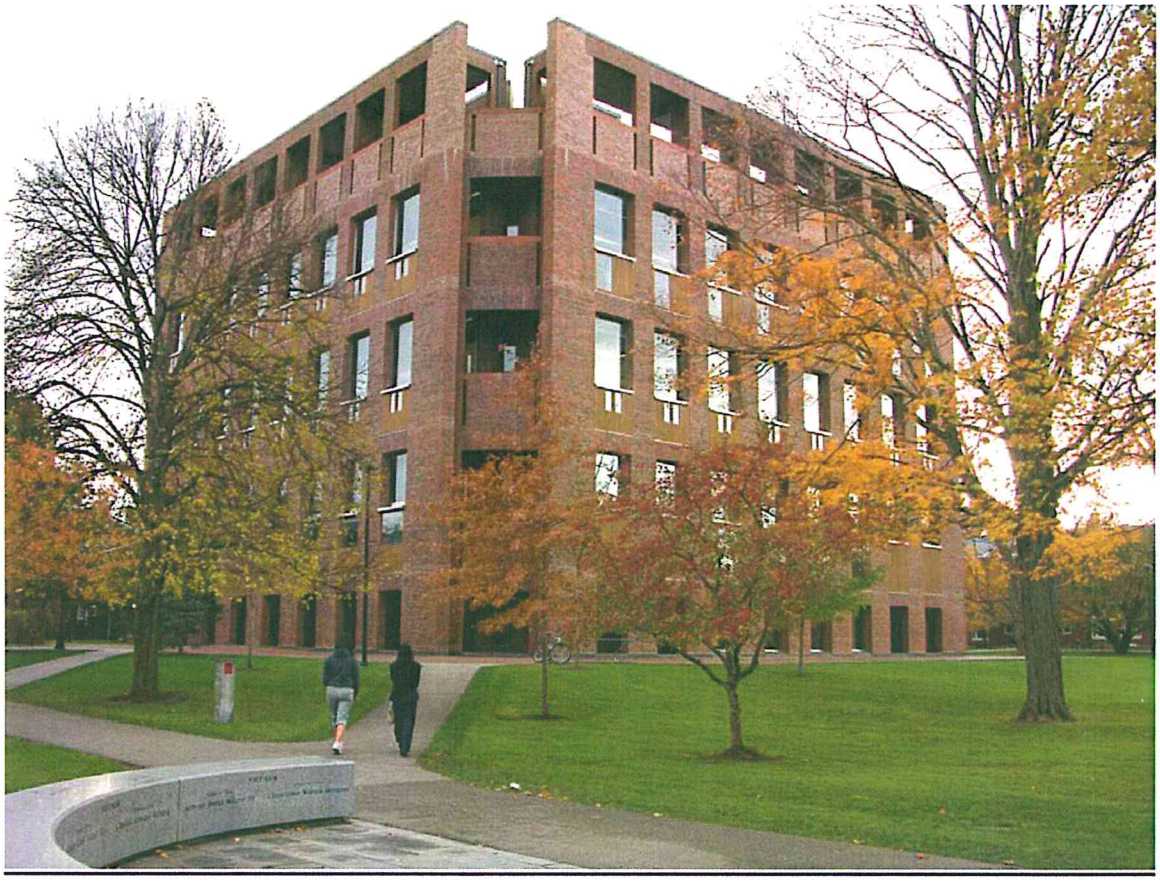
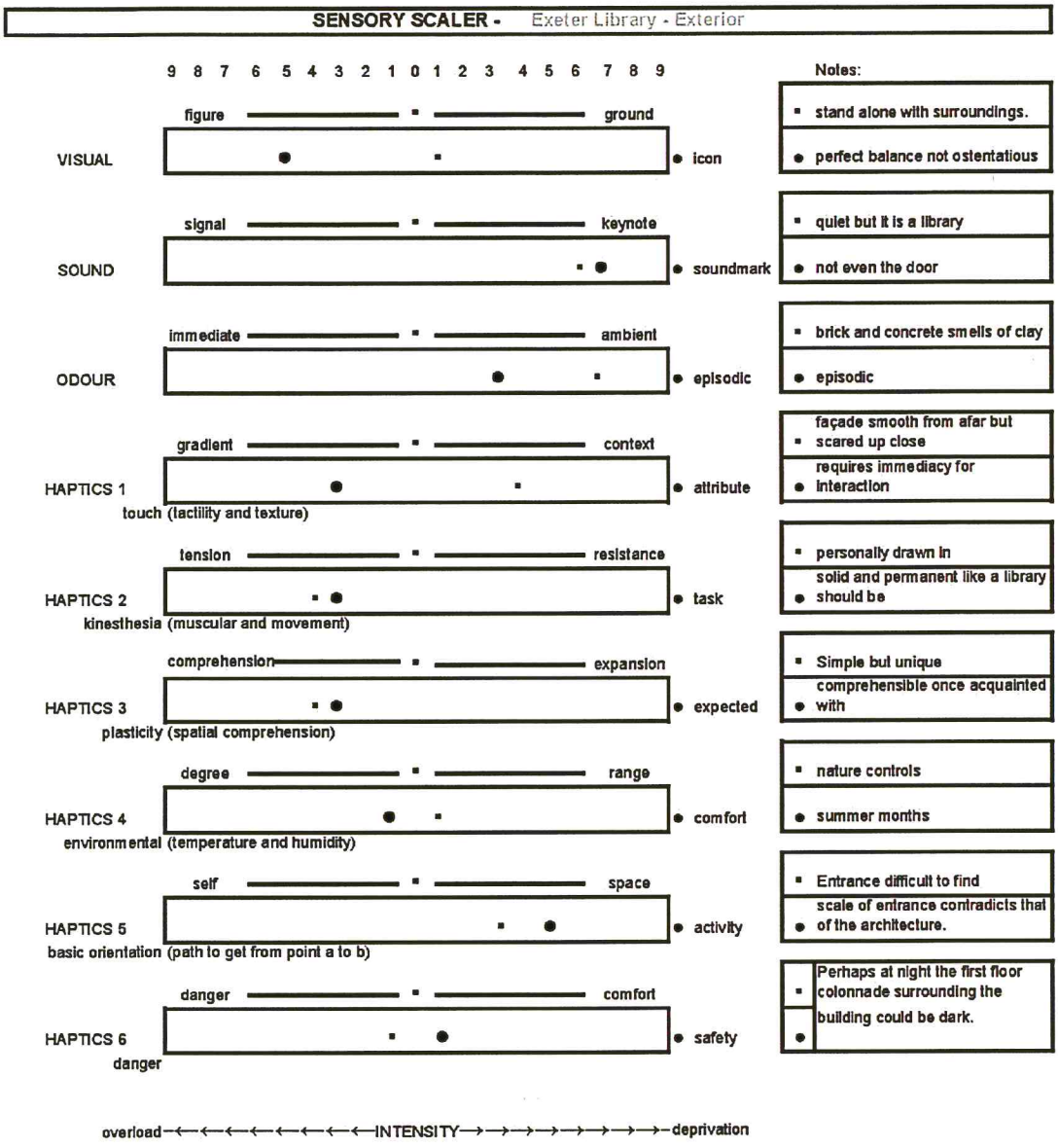
Appendix C – Record of Architectural Examples and Materials Using Scaling System from Chapter 6



In August of 2007 Louis Khan's Exeter Library was reviewed using the sensory scaler. The results are presented on the following images.

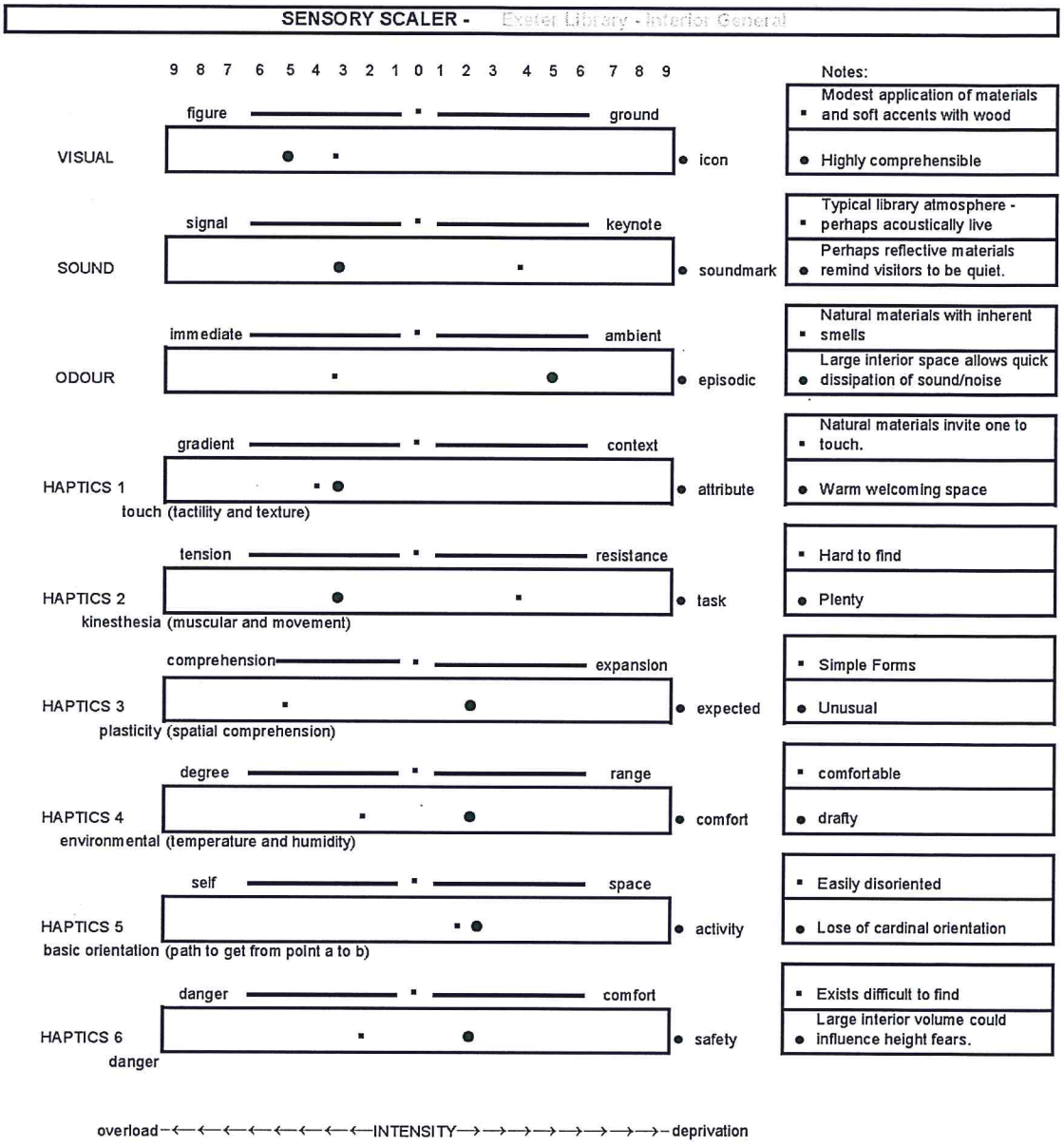
A Blind Sensibility –
A Non Visual Experience of Architecture

Image Appendix 'C' 1.1 - Exterior of Exeter Library



General Notes: Materials used: red to brown brick, black granite plinth, stainless steel or aluminum windows and doors, and finished woods.
Interventions: bird screen at corners, water down spouts, mortar repair ignoring tooled detail, sloppy caulking, conduit at 4 corners on exterior of building, and window flashings.
Interesting details: granite base, brick soldiers, imperfect brick, granite allowed to span corners and mark thresholds, wood inlay around windows, brick lintels increase in size with each window above the other, set back from road nicely staged the building, and although its a concrete structure it appears to be brick.

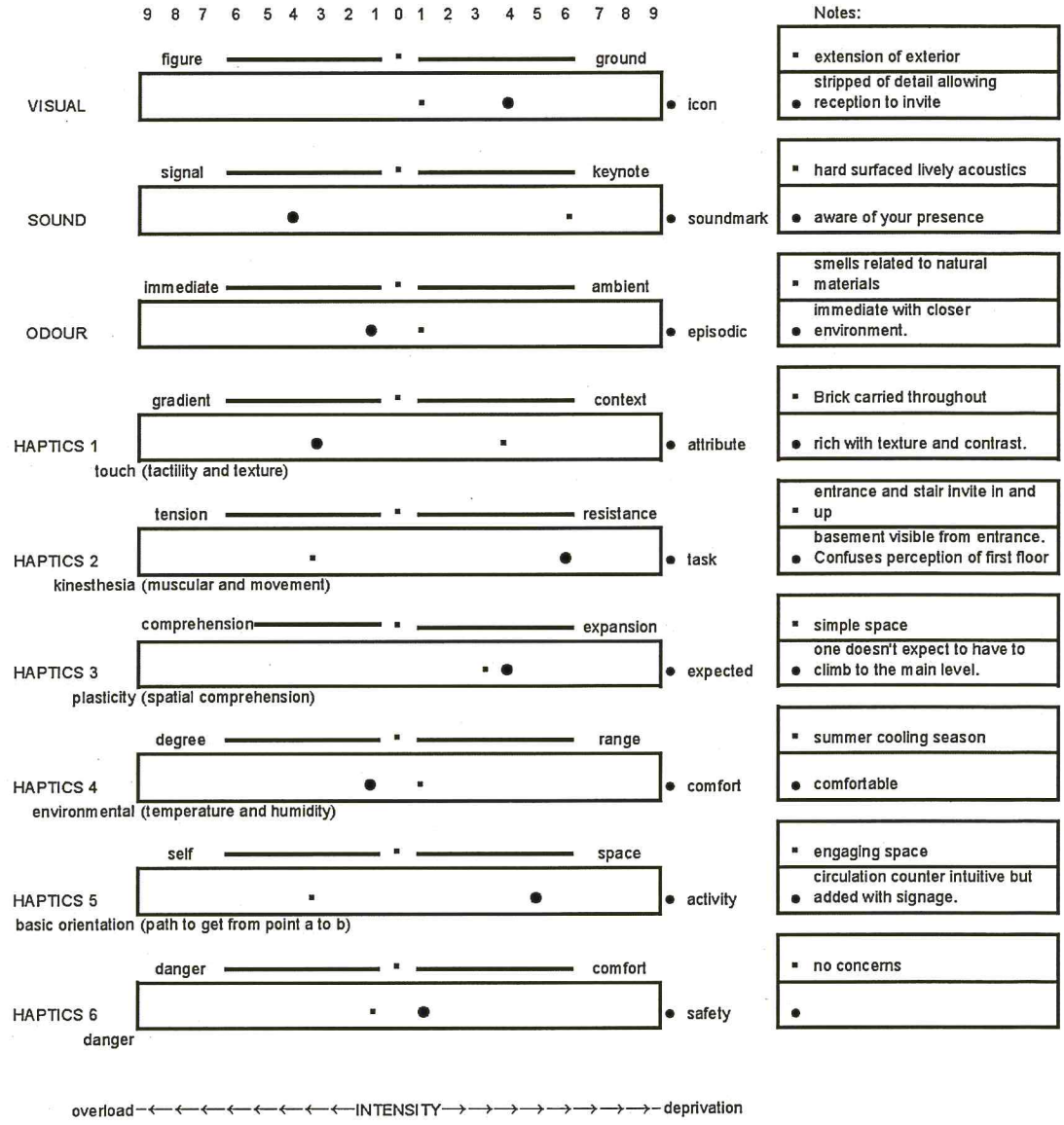
Image Appendix 'C' 1.2 – Interior in General



General Notes: Materials used throughout are brick, concrete, wood, granite, glass, carpet and limestone. Essentially, exterior materials are continued in the interior.
Circulation is difficult for first time visitor. Elevators are hard to find. Circulation desk on second level is disconnected from entrance.
Basement level is better connected to exterior.
Monumentality and weight expressed throughout.
Structure: is highly rationalized. Also, hidden when mundane but expressed when interesting.

Image Appendix 'C' 1.3 – Entrance Vestibule / Level

SENSORY SCALER - Exeter Library - Entrance Vestibule / Level

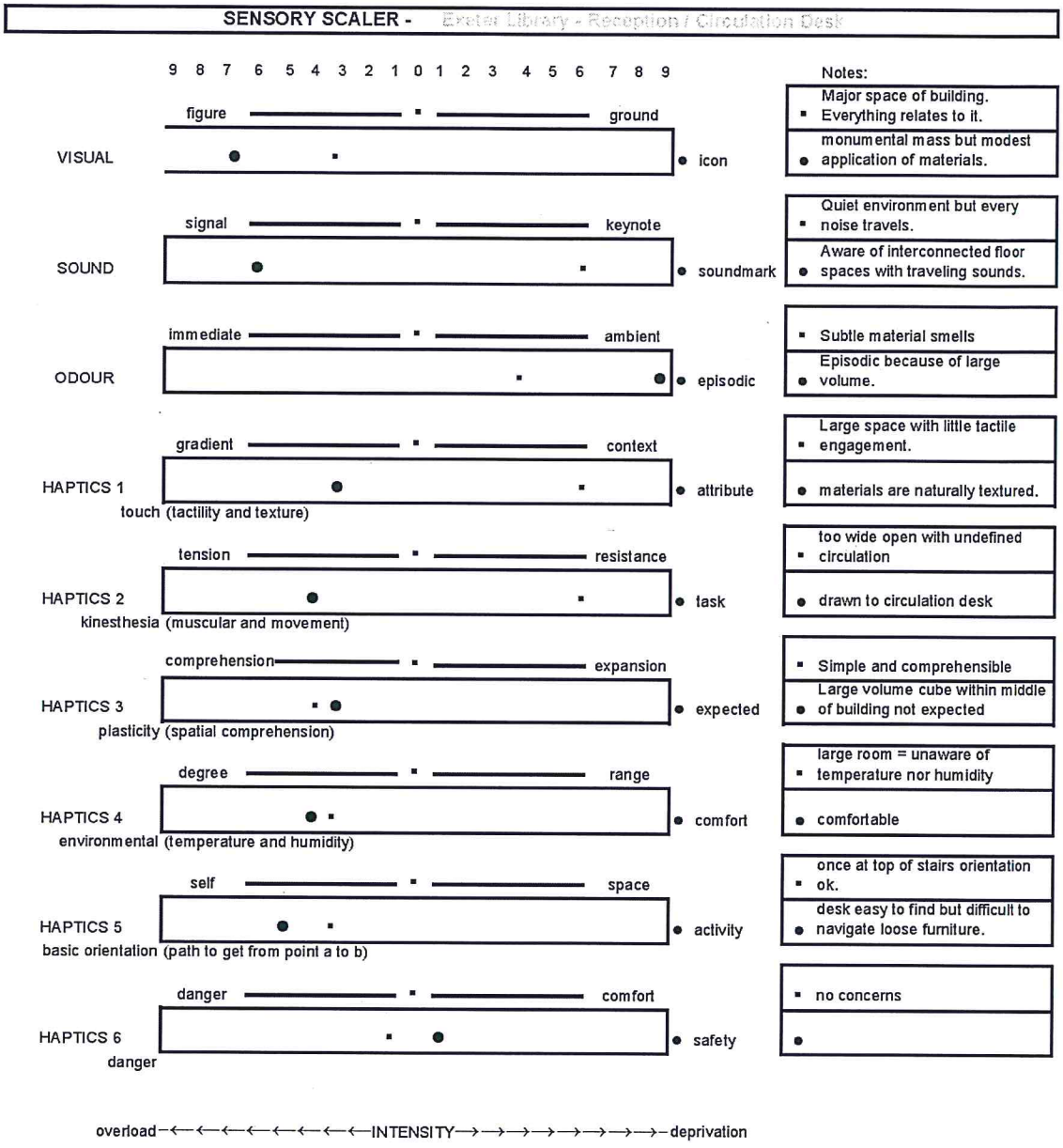


General Notes: Limestone floor at stair heading up to circulation desk.

handrail with limestone imperfections incredible tactile experience.
mechanical systems are loud but ductwork is nicely integrated with interior.
door handle into the building was pedestrian, expected, and boring.

A Blind Sensibility –
A Non Visual Experience of Architecture

Image Appendix 'C' 1.4 – Reception / Circulation Desk



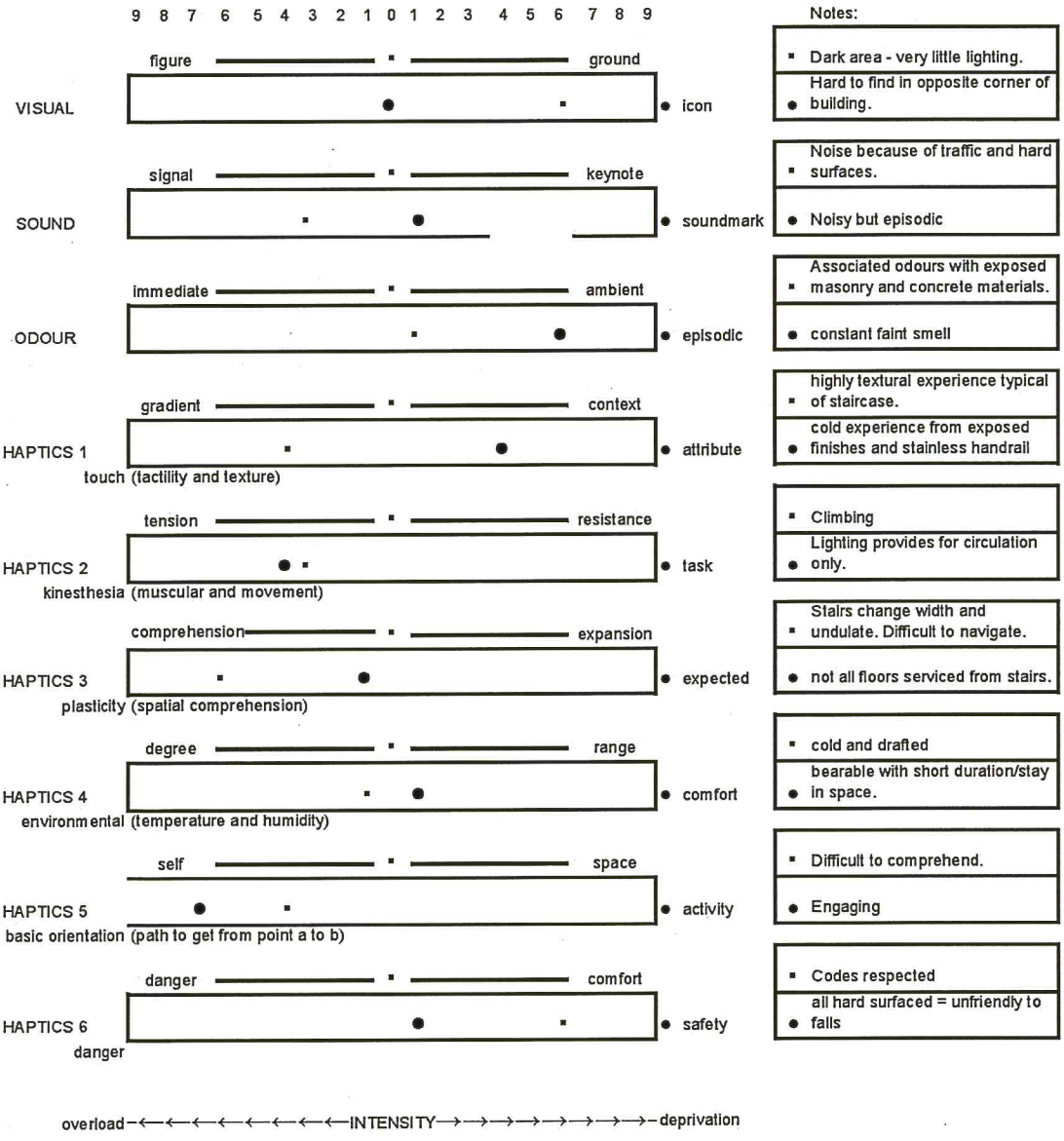
General Notes: Limestone floor should be loud but large space with interconnected floors allows sound to wonder.

Materials are: concrete, brick, wood, stainless steel, carpet, granite, limestone, and glass.
navigating the floor to get to the circulation desk was difficult due to loose furniture placement.
Overall circulation from circulation desk to other parts is difficult. Also noted the elevator was difficult to find.

A Blind Sensibility –
A Non Visual Experience of Architecture

Image Appendix 'C' 1.5 – Main Stair

SENSORY SCALER - Exeter Library - Main Stair

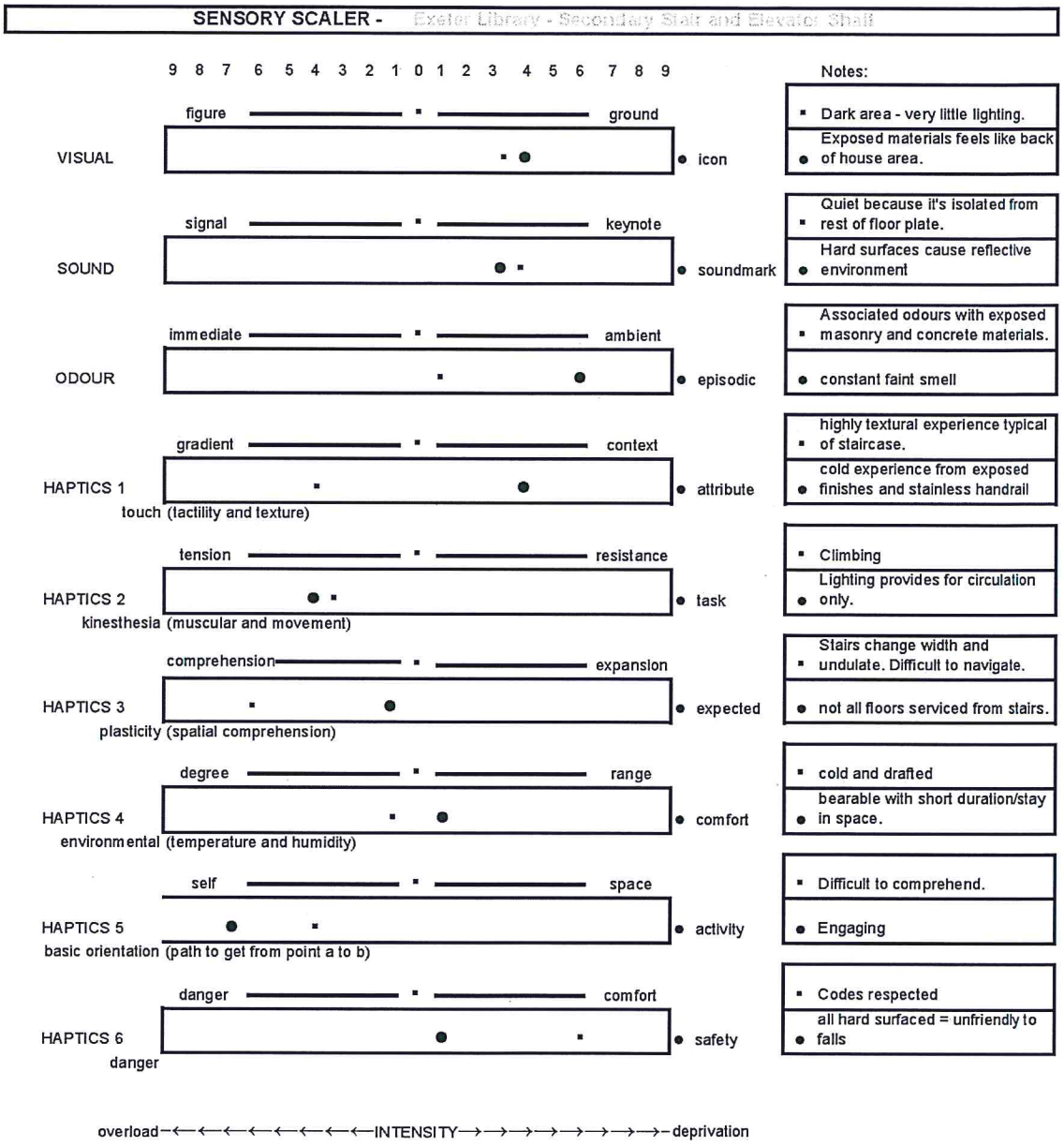


General Notes: Concrete structure with slate inlays.

Handrails are stainless steel and simple.
Slate inlay is a nice detail

A Blind Sensibility –
A Non Visual Experience of Architecture

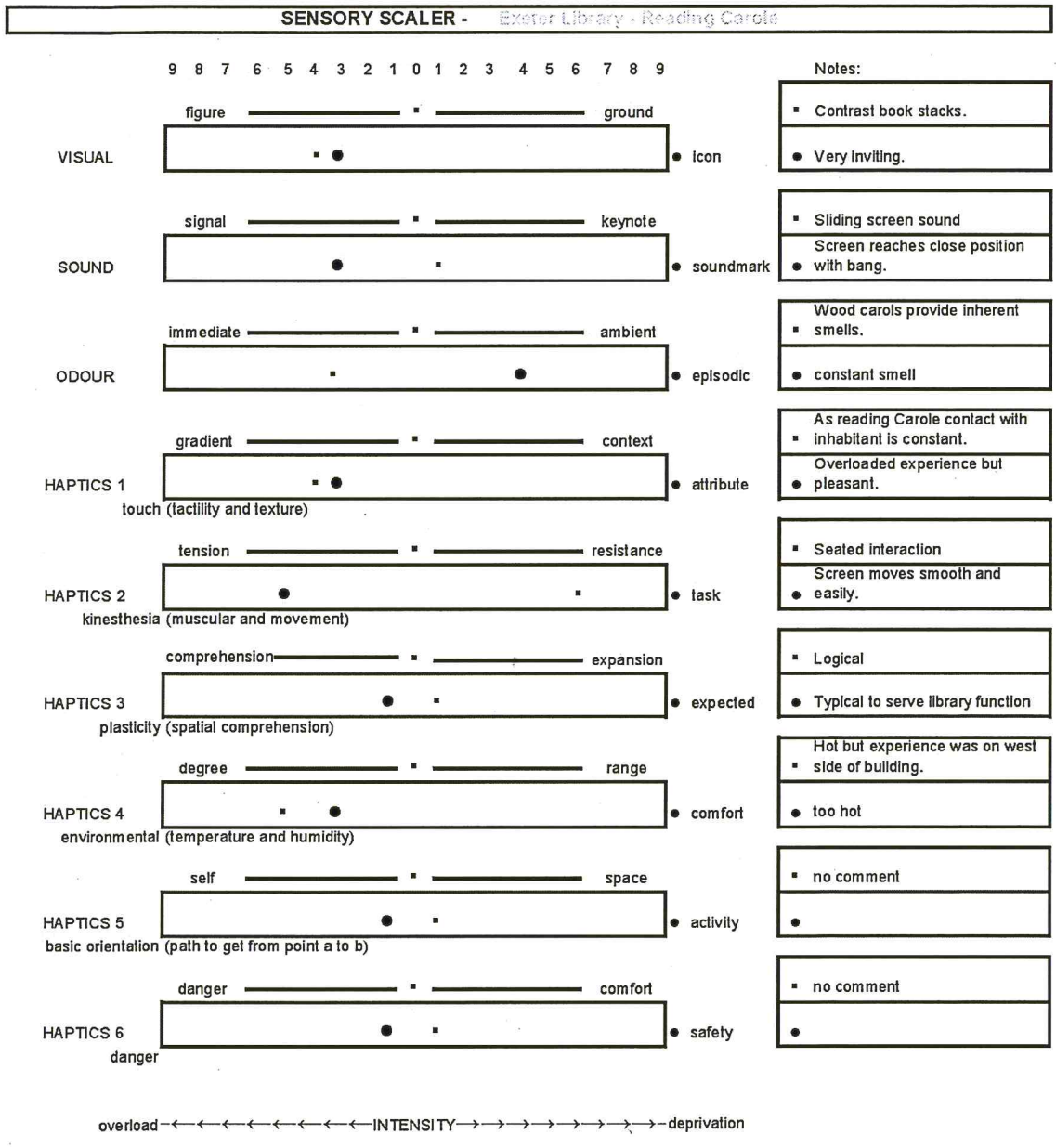
Image Appendix 'C 1.6 – Secondary Stair



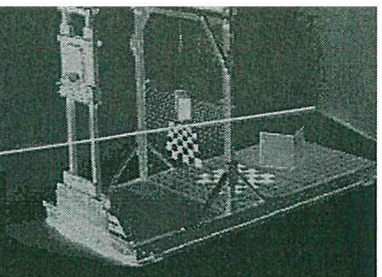
General Notes: Granite, concrete structure, basic walls, stainless steel handrail, stainless elevator doors.

Unclear if intentional but all utilitarian items are cold stainless steel.

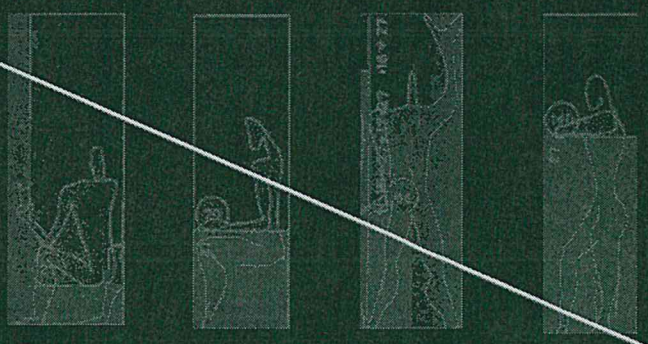
Image Appendix 'C 1.7 – Reading Carole



A Blind Sensibility –
A Non Visual Experience of Architecture



APPENDIX 'D'
Thesis Outline



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Appendix D – Thesis Outline

The Thesis Outline, following section, was developed as the first step in the Thesis level. It was submitted to all mentors, advisors and the provisional coordinator for review and comment. Once the outline was approved by all parties the research began.

Revised
February 11th, 2007

A Blind Sensibility –
A Non Visual Experience of Architecture

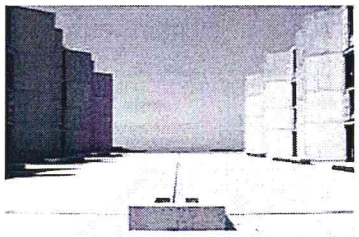
1 Statement

Revised
February 11th, 2007

Sight, Hearing, Smell and Haptics[1] are the dialogues engaging humanity with architecture. Architecture as a visual art is biased toward Sight but in order to hold a complete and discernible experience for humanity[2] as the nucleus of architecture, it must acknowledge all the senses equally. Therefore, investigating the blind experience of architecture will short circuit the Sight bias and reveal how the other senses foster a *mind and body* connection thus balancing the overall sensory application.

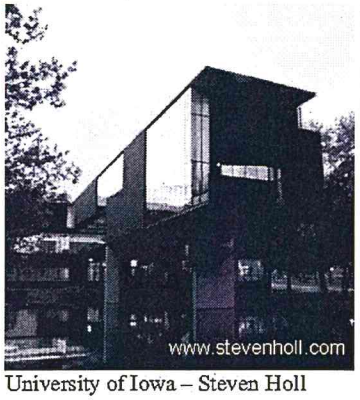
2 Abstract:

"In order for architecture to serve as a repository for our experiences as humans, it is vital that architecture engages more than our visual sense. Architecture can and should harness our capacity to process information about the spaces we inhabit, the way they feel, sound, smell and affect our sense of balance" Lukez, Paul[3]



Salk Institute – Louis Khan

Viipuri Library – Alvar Aalto



University of Iowa – Steven Holl

[1] Haptics: tactility (texture), kinesthesia (muscular/movement), plasticity (spatial comprehension) and environmental gage (temperature and humidity).

[2] Humanity is used to represent dweller, inhabitant and subject in relation to architecture.

[3] Lukez, Paul Assistant Professor of Architecture at MIT. Taken from Fall 2000 studio description

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From providing shelter to artistic expression, architecture has a connection to the *mind and body* of humanity. Shelter implies comfort and comfort means all the needs of our skin (Body) have been provided. Art engages our imagination (Mind), the better the engagement the more successful art is as it becomes "life enhancing"[4]. The difference between Architecture and Building lies in the provision for humanity's experience. Building provides comfort and facilitates humanity's use. Architecture does this too, but also provides a cognitive connection or an experience to humanity.

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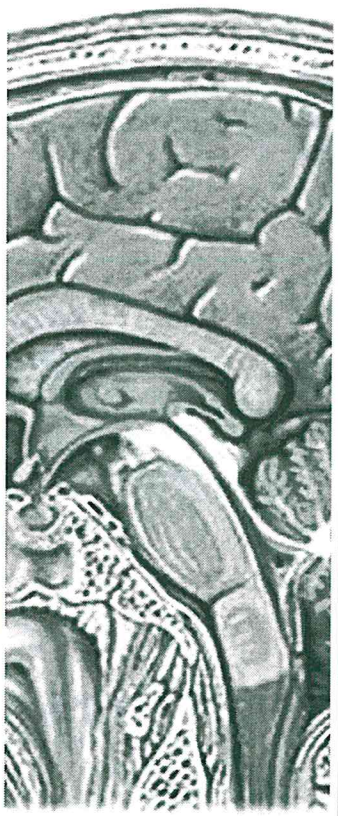
If a *mind and body* engagement is to be the nucleus of architecture, the connection must be complete and comprehensible. Therefore, if Sight, Hearing, Smell and Haptics are the modalities of comprehension or the language the environment uses to communicate with our brain, equal utilization will provide a complete and discernable architectural experience. Contrary to this, architecture is biased towards vision but why? Do the other senses not have an application in architecture and can they not provide similar experiences that sight can? If so how? An investigation of the counter condition or the blind experience of architecture would reveal how the other



Brain Section

[4] Johann Wolfgang von Goethe - referred to in Montagu, p. 308

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senses can provide a *mind and body* connection and balance the application of the senses.

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3 Thesis Structure:

(Some information repeated as these sections form introductions of thesis research paper)

Chapter title

1.0 Introduction:

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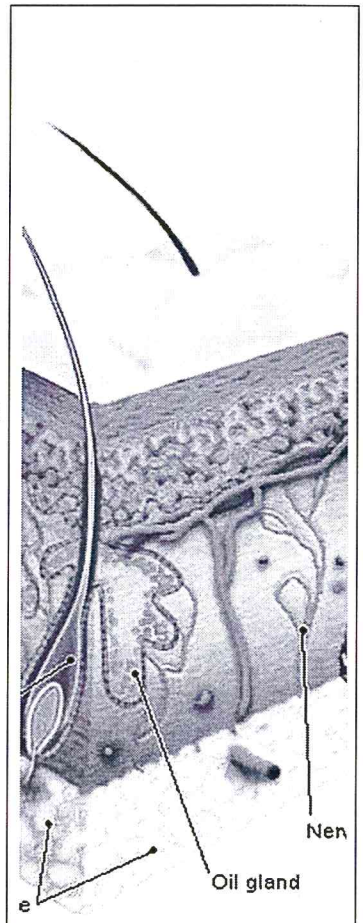
The role of Architecture is beyond providing shelter. It is a repository for humanity's experience and provides an experience to humanity. Sight, Hearing, Smell and Haptics are the dialogues engaging humanity by communicating a *mind and body* connection with architecture. The thesis will: firstly, discuss the *mind and body* connection and explain why it is important; secondly, how a *mind and body* connection has influenced architecture in the past; thirdly, the capacity of each sense will be presented along with the current *mind and body* connection where issues such as sensory ability, a sight bias, and cultural differences which help make each sense more or less affective; and lastly, an investigation of the blind experience of architecture will be conducted and presented to reveal how the other senses provide a *mind and body* connection and will help balance the application of the senses.



Epidermis Section

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Chapter title

2.0 A *Mind and Body* Connection with Architecture

Revised
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Whether providing shelter or artistic expression, architecture has a connection to the *mind and body* of humanity and this is the nucleus of architecture. Shelter implies comfort and comfort means all the needs of our body or skin have been provided. Art engages our mind and imagination, the better the engagement the more successful the art as it becomes "life enhancing"[5].

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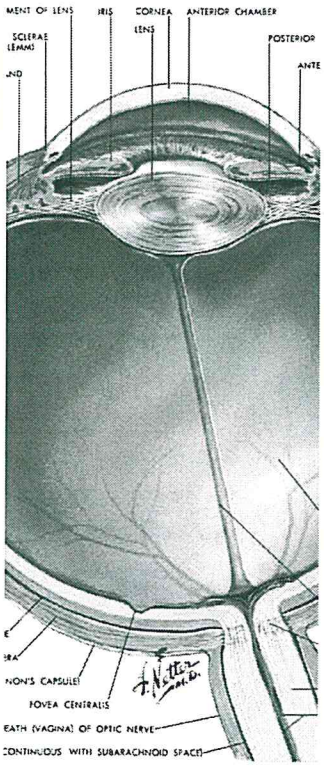
Humanity's experience of architecture can be divided into two categories the *mind and body*. However, both are required to maintain humanity as the nucleus of architecture. Recognizing that the comfort of the body is registered within the brain or mind it can be argued that the brain alone experiences architecture. However, our mind can be engaged while our bodies are comfortable and conversely, our mind can be engaged by our body's discomfort. Provision of shelter satisfies our body and an architectural experience or artistic expression satisfies our mind.



Eye Section

[5] Johann Wolfgang von Goethe - referred to in Montagu, p. 308

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Chapter title

3.0 Historical connection of *Mind and Body* to architecture

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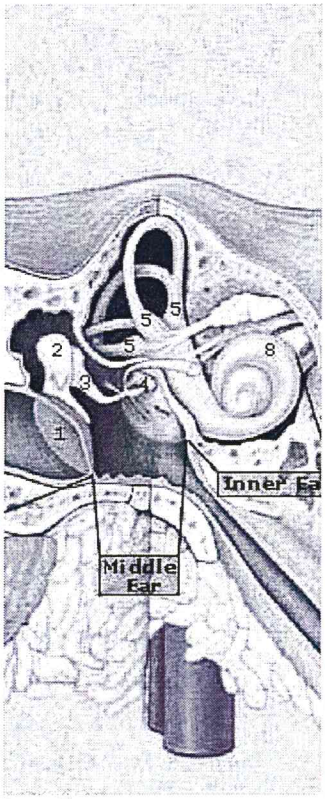
I will then discuss the historical precedence of a *mind and body* connection with architecture. From Greek antiquity to the Modern Machine, architecture has had a relationship with humanity through, for example, ocular correction, proportion, shape and scale. With Enlightenment came the change in attitudes that placed humanity (man) as the centre of thought. It served as a very important time in history and in the dominance of vision. No longer was everything performed or produced in the vision of God but rather in the vision of humanity.

Chapter title

4.0 The Senses Capacity and Current *Mind and Body* Condition

Revised
February 11th, 2007

Humanity is wonderfully complex and it is difficult to predict the language or dialogue of whom ever may be within architecture. Some people are deaf, blind, or hypoallergenic, also cultural differences lead to dialogue confusion. If we provide for all the senses in the experience of architecture we increase the chance of a *mind and body* engagement.



Inner Ear

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Revised
February 11th, 2007

Architecture is biased toward our visual sense, from identifying a door for circulation to the application of colour, each contributes to the overall architectural experience. But why is vision relied upon? Do the other senses not have a positive application in architecture and can they not provide similar experiences that sight can? If so how?

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Currently, architecture's approach to the other senses is primarily in the removal of the negative aspects of each sense. For example, mechanical systems bombard interior space with fresh air to remove contamination, but with it smells and odors. Acoustical design has eliminated sound in an attempt to control noise. Society has become so hyper conscious of germs that we have almost eliminated a tactile experience beyond that felt through our feet. Additionally, good practice guidelines stress simple circulation where the amount of stairs is minimized but as a sensory environment stairs can be the most exciting. An investigation into the origins, nature, methods, and limits of the other senses will reveal their appropriate application for architecture.

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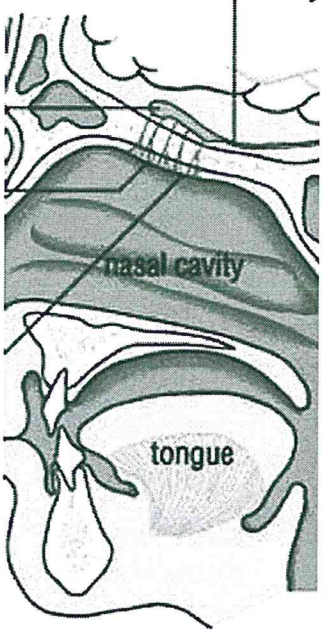
I believe the connection of the *mind and body* to the built form is important and the inclusion of the other senses would help to maintain the experience of the dweller as the nucleus for architecture. It is my



Nose Section

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intention to determine whether an architectural experience can be provided without the inclusion of the visual sense. Doing so will provide a comprehensible and deeper architectural experience firmly placing the experience of humanity or the *mind and body* connection as the nucleus for architectural development.

Chapter title

5.0 A Blind Sensibility

> *"Among the critical fault-lines within architectural practice and discourse is that which privileges sight, conceiving of architecture as primarily a visual art form. Despite the multi-sensorial, embodied nature of our being in space, architectural discourse has been largely silent where senses other than the visual are impacted."*[6]
>
> *Author Unknown*

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How do blind people experience the world? How do they survive in the world, especially when the physical world relies on vision? How do they experience architecture? How do they perceive the spaces or places architects invest so much of themselves in? How do they perceive time? Does the Cartesian world

[6] Author unknown - Taken from information pamphlet of Ryerson University's **"International Cross-Disciplinary Conference"** Toronto, Canada June 8-10, 2006

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mean anything to them? I believe this investigation will reveal examples of how the other senses can provide similar phenomenon that we assume only come through vision, for example order, symmetry, colour, shadow and the passing of time. I believe this anti-visual experience or the blind sensibility will reveal the means to provide a deeper experience of architecture.

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I anticipate that one of the interesting findings will be whether our other senses would permit plastic representation of reality more or less than our vision. For instance we have a visual preference for legitimate materials such as brick versus gypsum board or natural materials versus painted surfaces but would this also be true for natural smells versus fabricated smells or outdoor gardens versus interior gardens?

Chapter title

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6.0 Conclusion.

In conclusion, the connection of the *mind and body* to the built form is ever important. Architecture relies heavily on the sense of sight but the other senses can surely play an affective role. The investigation of how the other senses can be utilized to provide the *mind and body* connection to the built form is required to

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balance the overall sensory experience to ensure the connection is complete and comprehensible.

4 Literature Search

My early literature searches have been based on the "senses and architecture", "architectural experience" and "phenomenology". I have provided a list of the books I have read and utilized to prepare this outline. I have also included the bibliography collected to complete my research. Your guidance is welcome should I need to focus on one topic over another or if you can suggest resources I haven't already considered.

Books Read:

1. "For an Architecture of Reality" by Michael Benedikt
Combine the 5 senses with an existential analysis of the *reality* of a structure, and you might come up with something like this tiny and curiously compelling book. The book is a response to postmodern architecture; its relevance lies in the analysis and plea for an architecture of reality. It looks at the subtle philosophical and existential aspects of the experience of architecture. It appeals to the indescribable sense of space, mass, and place that one feels in any architecture. And it appeals to the architect to consider various elements of reality in a

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building separate from academic meaning, to give it a sense of being in itself. (based on information from http://sprg.ssl.berkeley.edu/~jmcd/book/revs2/faor.html)

2. "The Eyes of The Skin" by Juhani Pallasmaa
The Eyes of the Skin has become a classic of architectural theory and consists of two extended essays. The first surveys the historical development of the ocular-centric paradigm in western culture since the Greeks, and its impact on the experience of the world and the nature of architecture. The second examines the role of the other senses in authentic architectural experiences, and points the way towards a multi-sensory architecture which facilitates a sense of belonging and integration. (book description from http://www.amazon.com/)

3. "Experiencing Architecture" by Steen Eiler Rasmussen,
Profusely illustrated with fine instances of architectural experimentation through the centuries, *Experiencing Architecture* manages to convey the intellectual excitement of superb design. From teacups, riding boots, golf balls, and underwater sculpture to the villas of Palladio and the fish-feeding

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pavilion of the Peking Winter Palace, the author ranges over the less-familiar byways of designing excellence. (book description from http://www.amazon.com/)

4. "Poetics of Architecture" by Anthony C. Antoniades, Poetics of Architecture explores the fundamental theories of Modern and Postmodern design and attempts to reconcile all that is worthwhile in these two movements into a new inclusivist attitude toward architecture. Anthony C. Antoniades looks at the many intangible and tangible channels one can harness in creating architectural design. By opening up architecture to the full range of creative influences, he tries to help readers produce designs that are richer on spatial, sensual, spiritual, and environmental levels. Included among the examples in the volume are many distinguished projects and theories by a wide range of noted architects such as Asplund, Aalto, Utzon, Pikionis, Barragin, Pietilä, Predock, and Legorreta, who are latecomers to the attention of the media. (description edited from back cover of book)

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"Elements of architecture : from form to place" - by Pierre von Meiss

"Alvar Aalto : toward a human modernism" - edited by Winfried Nerdinger

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"The poetics of space / Gaston Bachelard" - translated from French by Maria Jolas

"Eye and brain; the psychology of seeing" – by Richard Langton Gregory

"Intertwining" by Stephen Holl

"Louis Khan Situated Modernism" – by Sarah Goldhagen Williams

"The Opening of Vision: Nihilism and the Postmodern Situation" David Michael Levin

"Modernity and the Hegemony of Vision" – by David Michael Levin

"Theorizing a New Agenda for Architecture" by Kate Nesbitt

"Downcast eyes : the denigration of vision in twentieth-century French thought " by Martin Jay.

"Body, memory, and architecture" by Kent C. Bloomer and Charles W. Moore

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Current bibliography to complete research portion (changes to list expected):

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Books:

"The Society of the Spectacle" by Guy Debord

"Question of Perception: Phenomenology of Architecture" by Holl, Gomez and Pallasmaa – A+U magazine – July 1994

"The Concept of Dwelling" by Christian Norberg-Schulz

"Architecture as Space" by Bruno Zevi

"Spaces Speak, Are You Listening?: Experiencing Aural Architecture" – by Barry Blesser and Linda-Ruth Salter

"Art and visual perception : a psychology of the creative eye" - by Rudolf Arnheim.

"Design for human affairs" - by C. M. Deasy

"Designing places for people : a handbook on human behavior for architects, designers, and facility managers" - by C.M. Deasy

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"Between silence and light : spirit in the architecture of Louis I. Kahn" - by John Lobell

Articles:

"Brain Research, Learning and Technology" – www.techknowlogia.com

"How the Brain Experiences Architecture" - www.aia.org

"How Neuroscience can improve Architectural Enviroments" - www.sfn.org

"Living Book of the Senses" – by Diane Gromala - www.lcc.gatech.edu

5 Methodology

It is my intention to determine whether an architectural experience can be provided without the inclusion of the visual sense. With the research outlined here I will include interviews with blind people where I will walk through architecture to witness, first hand, how architecture affects them.

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List of Illustrations

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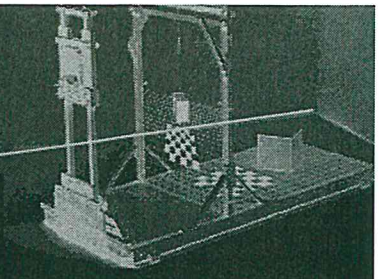
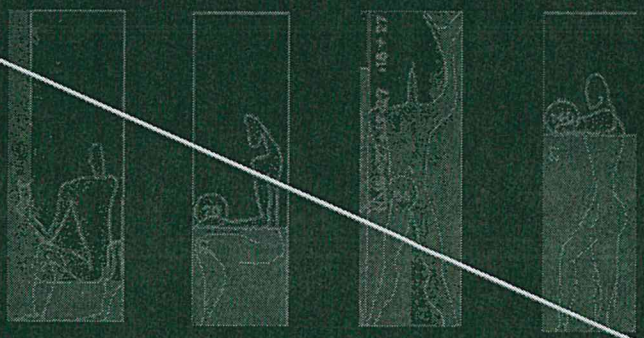


APPENDIX 'E'
Thesis Research Summary



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Appendix E – Thesis Research Summary

The following research summary was handed out at the Research Presentation in May 2007. It was prepared to serve as an executive summary for jury members to read and comprehend the thesis topic, position and research conclusions.

1 Thesis Statement

Sight, Hearing, Smell and *Haptics*[8] are the dialogues engaging humanity with architecture. Architecture as a visual art is biased toward Sight but in order to hold a complete and discernible experience for humanity[9] as the nucleus of architecture, it must acknowledge all the senses. Therefore, investigating the blind experience of architecture will short circuit the Sight bias and reveal how the other senses foster a *mind and body* connection thus balancing the overall sensory application.

2 Research Summary

The following text is a summary of the thesis research. It has been compiled to be of a manageable size for quick read and comprehension. The key points of each chapter have been linked together without chapter introductions and conclusions. The topics discussed, in order, are a Mind and Body Connection of Inhabitant with Architecture, Sense Capacity and the Current Mind and Body Condition, A Blind Sensibility, and Case Studies showing similar application of the thesis ideas in current architecture, art and social practices.

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[8] [8] Haptics can be subdivided into touch, kinesthesia (muscular/movement), plasticity (spatial comprehension), environmental (temperature and humidity), danger and basic-orienting senses.
[9] Humanity is used to represent – dweller, inhabitant and subject in relation to architecture.

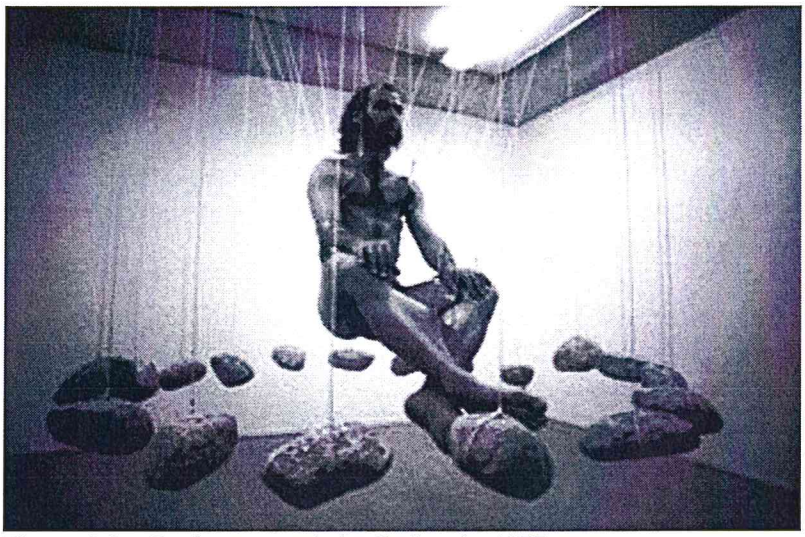

Figure 4.1 – Performance Artist Stelarc in 1975 –
This image represents the total engagement of *mind and body* where a total sensory experience heightens the sense of being for the inhabitant.

> *"In order for architecture to serve as a repository for our experiences as humans, it is vital that architecture engages more than our visual sense. Architecture can and should harness our capacity to process information about the spaces we inhabit, the way they feel, sound, smell and affect our sense of balance" Lukez, Paul*[10]

From providing shelter to artistic expression, architecture has a connection to the *mind and body* of humanity. Shelter implies comfort and comfort means all the needs of our skin (Body) have been provided. Art engages our imagination (Mind); the better the engagement the more successful the art, as it becomes "life enhancing"[11]. The difference between Architecture and Building lies in the provision for humanity's experience. Building provides comfort and facilitates humanity's use. Architecture does this too, but also provides a cognitive connection or an experience to humanity.

Perception and comprehension leading to cognition requires the senses. Our understanding of *place* is then filtered through our imagination and stored in memory (see Figure 4.2).[12] A *mind and body* connection helps architecture become memorable. To at least some extent every *place* can be remembered, in part because it is unique but more so if it has affected our *mind and body* and generated *stimuli* (experience) that can be held in our memory and recalled later.

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[10] Lukez, Paul –Assistant Professor of Architecture at MIT. Taken from Fall 2000 studio description
[11] Johann Wolfgang von Goethe – referred to in Montagu, p. 308
[12] Based on *Eye and Brain and the Psychology of Seeing,* by Gregory, Richard L, *p*6.

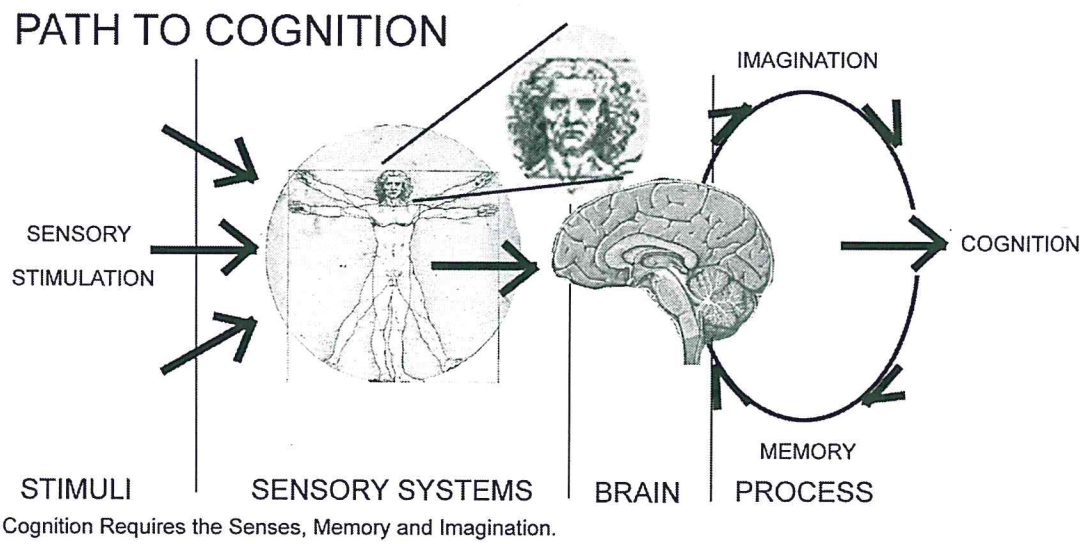

Figure 4.2 – Path to Cognition of Architecture for Inhabitant – Note, the process through the brain, memory and imagination is cyclical until the overall perception is clear and thus cognition.

If a *mind and body* engagement is to be the nucleus of architecture, the connection must be complete and comprehensible. Therefore, if Sight, Hearing, Smell and *Haptic*s are the modalities of comprehension or the language the environment uses to communicate with our brain, equal utilization will provide a complete and discernable architectural experience. Contrary to this, architecture is biased towards vision but why? Do the other senses not have an application in architecture, can they not provide similar experiences to sight and if so how? An investigation of the counter condition or the blind experience of architecture would reveal how the other senses can provide a *mind and body* connection and balance the application of the senses.

There is a precedence of a *mind and body* connection of inhabitant and architecture through the history of architecture. In one form or another architecture has had a link with the body of humanity for example the Ancient Greeks believed "[humanity] to be the measure of all things" and Le Corbusier developed "Modular Man".

Spatial cognition links us with architecture but what aids cognition? In order for the mind to comprehend the built environment, five factors must be present for total and complete cognition (*Being*). The first factor; one must be present; second, there must be an environment (built or natural); third, there must be a dialogue between the environment and inhabitant and this dialogue must be understood through our senses; fourth, one requires an imagination to organize the dialogue and; finally, a brain is required to process the information.[13]

[13] Taken from book The Eye and Brain and based on empiricism and gestalt theory discussed later in research.

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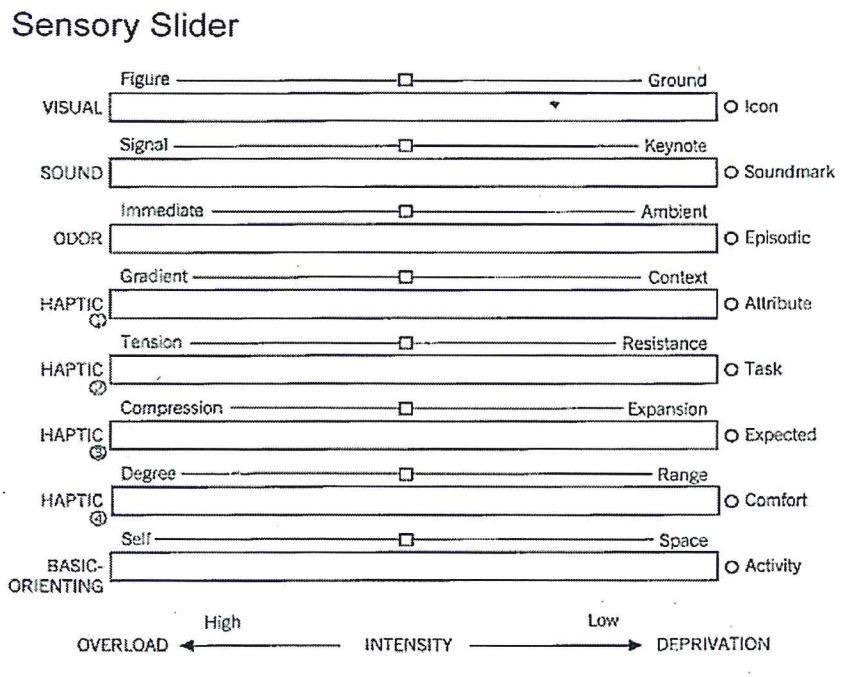
The cognitive process has been studied by Neuroscience, Psychology and Philosophy where the operation, classification, and theory is investigated. Empiricism, Gestalt, Psychophysics and Direct Theory are theories of perception.

When designing with senses we must consider: first, other cultures do not necessarily divide the senses as we do. Secondly, discover what relationship between the senses a culture considers proper. Thirdly, senses that are important for practical purposes may not be important culturally or symbolically. Fourthly, sensory orders are not static but develop and change over time, just as cultures do. Next, there may be differing sensory orders for different cultural groups.[14] Also, it is also important to consider the duration of exposure. The longer one has to engage with architecture the more mature or whole the interaction and experience. This explains why we have a full sensory experience in our homes and why smells or sounds can remind us of our childhood houses years later. Finally, with all environments (space) there is a constant condition for each sense (typical and non fluctuant can also be noted as the ground in relation figure to ground) this constant condition, generally speaking, is then exceeded or contradicted (non typical and sometimes fluctuant can also be noted as the figure in a figure and ground relationship). This contradiction can be seen as a sensory event. The event may be slight or extreme but it is enough to heighten the inhabitant's attention. The event must be comprehensible to the senses, the inhabitants imagination will then collect and rationalize the information for the brain and cognition. Therefore, it is important to understand what the constant condition will be within a space for each sense to then determine the degree required to stage an event.

The language for describing the senses is weak and inadequate. Somewhat like describing a wine, we use descriptive words attempting to articulate the sensory experience of *space* but there must be a better way.

The authors of Sensory Design devised a scaling system they refer to as a "Sensory Slider" (see Figure 6.8). Used as a design tool the scale can help articulate the planned experience of the inhabitant before architecture is built. It can also be used to investigate existing architecture and how the sensory systems have been placated, similar to reviewing the structural system, circulation system or the parti of architecture for education and precedence. This tool can be used in retrospect as an analytical tool or during the planning stage to forecast the resultant sensoryscape. A tool such as this would be useful for educational reference and comparison of different *space*s.

[14] Malnar, Joy Monice; Vodvarka, Frank in *Sensory Design,* p55



Sensory Slider. Created by Malnar, J and Vodvarka, F. in Sensory Design

Figure 6.8 – Sensory Scale – named Sensory Slider by Vodvarka and Malnar in *Sensory Design*

The scale is composed of eight bars, one to sight, hearing, smell and five *haptic*s, the first touch, next kinesthesia, plasticity, environmental, and basic-orienting. Each sense system is considered and presented with figure (event) versus ground (typical condition) relationship or complexity and coherence and the concept of high intensity and low intensity relating to context. High intensity refers to a high frequency of stimulation related to one sensory system and low intensity the opposite (see Figure 6.9 for explanation of terms used in Scale).

Sensory Slider Terms

	LEGIBILITY		
Sense	Complexity	Coherence	Contextual
Visual	Figure (detail)	Ground (context)	Icon
Sound	Signal (note)	Keynote (ground)	Soundmark
Odor	Immediate (context)	Ambient	Episodic (memory)
Haptic ①	Gradient (surface)	Context (type)	Attribute
Haptic ②	Tension (muscular)	Resistance (mass)	Task
Haptic ③	Compression	Expansion	Expected
Haptic ④	Degree	Range	Comfort
Orientation	Self (body)	Space (surround)	Activity

Sensory Slider Terms by Malnar and Vodvarka in Sensory Design

Figure 6.9 – Explanation of Terms Used in Sensory Scale

Reading the scale system (sensory slider) we see that each bar is marked with either a square or circle. The square marks the position between the criteria (above each bar) for each category (left hand of bar) and the circle marks the intensity of the element (right hand of bar). To explain, using the sight system as an example the vocabulary used is visual, figure, ground and icon. Visual represents sight system, figure and ground refer to constant or typical condition (ground) and event or stimulating conditions (figure) and icon refers to when a space becomes a place (thus engaging and memorable) it becomes iconic. The square would then be placed to the left if the space was highly detailed with very little rest periods (visually). The circle would then be placed near the left if this detailing was such that the space engaged with the inhabitant and became a place or enjoyable experientially.

Our sensory nerves react to events. An event happens when the sensory norm (threshold) is exceeded. For instance, in an area with a quiet environment, the slightest sound will engage your hearing system but in an area with a higher average sound level, it would take an event of higher level to engage your hearing system.

Conversely, our sensory system can become accustomed to the surrounding sensory levels if they are consistent. This explains why, despite the fact that the body and brain have only so many signalers and receptors; we can sense weight even in the winter. To explain, a sensory response involves nerves and nerves can only give one signal at a time. Therefore, if already reacting to a cold event a nerve cannot also register a weight event. However, when present in an environment of higher stimulation our nerves cease sending that particular signal to our brain allowing them to respond to other *stimuli*. Gregory, Richard L. *Eye and brain; the psychology of seeing.* p108.

> Stephen Holl Architect - *"Architecture engages intimacy of our sensory perceptions, The passage of time, light, shadow and transparency, colour texture, material and detail….. the total perception of architectur[e] depends on material… as the taste of [food] depends on the flavours of authentic ingredients."*

Empirical research into the senses and how they affect humanity (other than sight system) is limited. We need to investigate existing architecture revered for appeasing a sense other than vision to build a *compendium*[15] to draw from. In addition, we must pick up materials and articulate their sensory opportunities and attributes for later application. However, the information must be based on the interaction of inhabitant (architect in our case) with *space* or materials and not based on any scientific measurement. We must discover how it feels against our skin, how sound interacts with, whether there is an odour associated, how light affects and is affected by, and what it is like to live with it (see Figure 6.13 – for example of Sensory Scale explaining concrete block).

[15] *Compendium*: a list or collection of information for future resource.

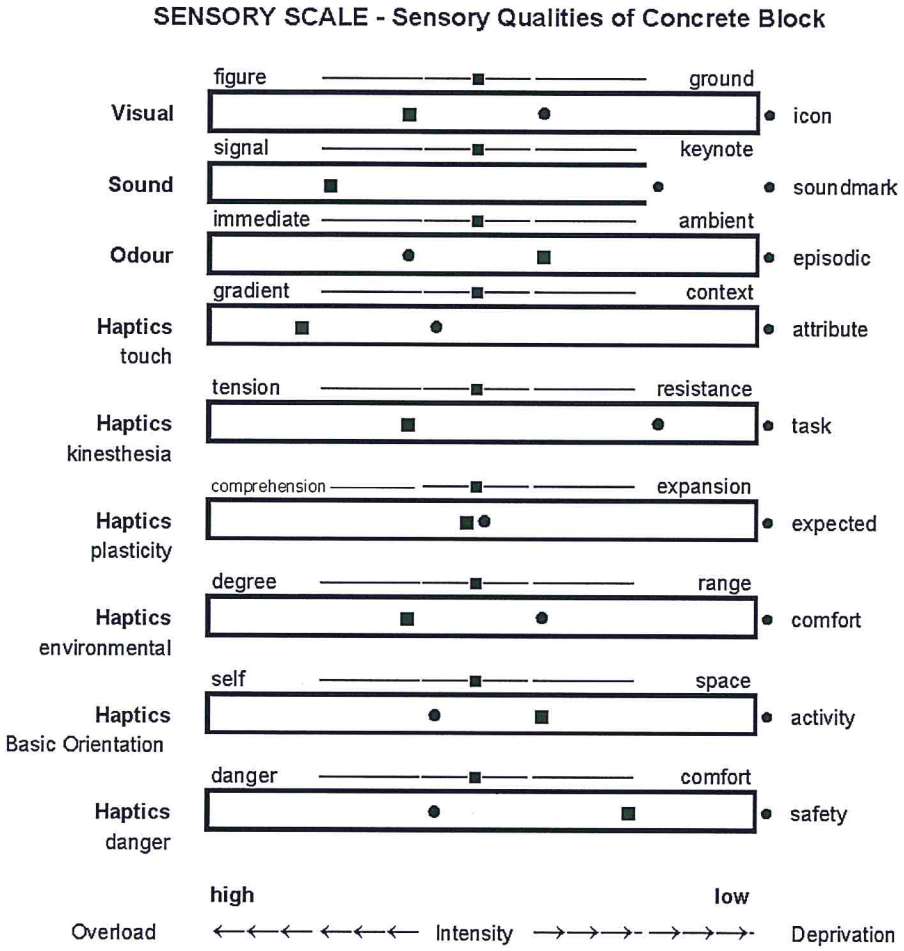


Figure 6.13 – Sensory Qualities of Concrete Block Explained with Sensory Scale

Regarding the sight system Juhani Pallasmaa discussed that "until recently, architectural theory and criticism have been almost exclusively engaged with the mechanism of vision and visual expression. [Despite the fact that] *an* architectural work is not perceived as isolated retinal pictures (*Eyes of the Skin* - p12). Due to the dynamics of the sight system and what is available to the architect, contemporary architecture is undeniably biased toward the sense of sight. In addition, the only aspect of the senses taught in architecture schools relate to elimination of negative aspects of each sense such as noise reduction and odour removal.

The following is provided to substantiate the claim that architecture is bias toward the sight system. Le Corbusier once said "I exist in life only if I can see", "I am and I remain an impenitent visual – everything is in the visual", "one needs to see clearly in order to understand", and "architecture is the masterly, correct and magnificent play of masses brought together in light". Walter Gropius said, "[The designer] has to adapt knowledge of the scientific facts of optics and thus obtain a theoretical ground that will guide the hand giving shape, and create an objective basis." "*Modernist design has housed the intellect and the eye, but has left the body and the other senses, as well as*

our memories and dreams, homeless" (Juhani Pallasmaa as quoted in *Sensory Design,* p33). Heidegger, Foucault and Derrida argue that thought and culture of modernity have not only continued sight privileging but allowed its worst tendencies to dominate.[16]

The view of typology and the Cartesian process of *space*, both rooted in sight system, fundamentally contradict human experience and leads to functionality and economics taking precedence over humanity's experience. The negative aspects are reflected in some of architectures worst disasters (See Figure 6.14 – Picture and Quote Related to Pruitt-Igoe). It has also led to society's under valuing of architectural design.[17]

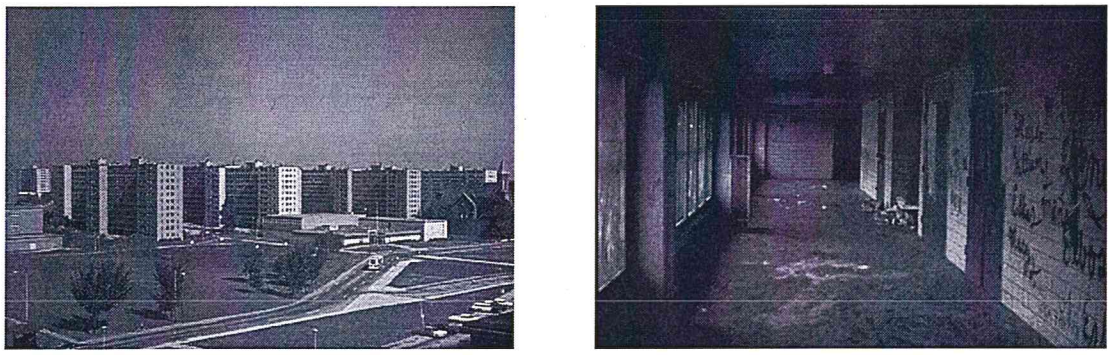


Figure 6.14 – Pruitt-Igoe - "Let us not forget that architecture must always include and include for humanity."[18]

In 2006, Ryerson University held an International Cross-Disciplinary Conference with people from Architecture, Music and Acoustics. The organizers of the conference were motivated to investigate how they could "move outside the visual paradigm to investigate the relationships between architecture, music and acoustics." The following excerpt was taking from the conference information pamphlet.

> *"Among the critical fault-lines within architectural practice and discourse is that which privileges sight, conceiving of architecture as primarily a visual art form. Despite the multi-sensorial, embodied nature of our Being in space, architectural discourse has been largely silent where senses other than the visual are impacted."*[19] *Author Unknown*

It is the intention to research how we can short circuit the sight bias and produce a mass of empirical knowledge of how the other senses might be applied to architecture (note: this is a task to undertake over a career. It is far greater than what can be accomplished in the scope of a thesis) who better to guide the research than the blind community. Their experience of architecture is always anti-sighted or dependent on a sensory system other than sight. In addition, as they

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[16] As presented by Dr. David Michael Levin in *Modernity and the Hegemony of Vision.*
[17] Edited from information provided on pX of *Sensory Design.*
[18] Juhani Pallasmaa in *Eyes of the Skin.*
[19] Author unknown - Taken from information pamphlet of Ryerson University's *International Cross-Disciplinary Conference.* Toronto, Canada June 8-10, 2006

encounter architecture every day with little or no sight they can help expand the mass of resources (*compendium*) available to draw from for the other senses.

> Dr. David Michael Levin stated, *"I think it is appropriate to challenge the hegemony of vision in the ocularcentrism of our culture. And I think we need to examine very critically the character of vision that predominates today in our world. We urgently need a diagnosis of the psychosocial pathology of everyday seeing -- and a critical understanding of ourselves, as visionary Beings." Decline and Fall – Ocularcentrism in Heidegger's reading of the history of metaphysics,* p 205

How do blind people experience the world? How do they survive in the world, especially when the physical world relies on vision? What is their experience of architecture and how do they perceive the *space*s or *place*s in which architects invest so much of themselves? How do entirely blind individuals perceive time? Finally, does the Cartesian world mean anything to the blind? The intention is to investigate to reveal examples of how the other senses can provide similar *mind and body* connections that are assumed only come through vision, for example: order, symmetry, colour, shadow and the passing of time.

> Rebecca Maxwell blind writer as quoted in *Beyond Appearances - Architecture and the Senses* web article on www.e-bility.com: *I would say the main thing anyone can do is to give a bit of time to thinking about what senses they may have that they haven't thought of, and just live with them, and then if it's an architect, try and feed that sense, gratify that sense, so that we're not half dead in our sensibilities.*

This anti-visual experience or the blind sensibility will reveal the means to provide a deeper experience of architecture. Also, by investigating a "blind sensibility" we free architecture from: fashion, metaphor, visual precedence, the Cartesian world and geometry. As a result architectural design will be free to pursue a whole *mind and body* connection with architecture.

Our experience of the world depends on our individual encounter with the world. Each blind man had a different experience of the elephant and, therefore, each had an entirely different concept of "elephant." A 'concept' is a term those working with blind people use to represent an understanding of something that would not require explanation if someone had sight. For example, one would need to teach the concept of what an elephant is or how traffic lights work and that the progression is green, yellow and then red. None of the four blind men description of the elephant was wrong they were simply a product of their individual experiences. Imagine if each one assumed conceptually that their description of an elephant was correct.

Blind people are taught how to deal with the world. Their schooling includes classes to learn how to cope with the visual world. In addition, many devices have been created to help a blind individual function in the world. Devices such as computer programs for those with reduced vision or absolute blindness, or proximity readers to tell them how close they are to an object, walking canes, and braille for reading.

A Blind Sensibility –
A Non Visual Experience of Architecture

Blind people do not tend to venture into places, intentionally, they have not previously been taught. Large, tall and open *spaces* can be very disorienting for the blind. They need *spaces* that are easily navigated with simple circulation. Alternatively, a constant physical guide to get from one point to the next be it a wall, railing or curb to feel with their cane is required. If large *spaces* are required and a continuous railing or guide is not possible, the *space* should have acoustic landmarks that are recognizable for someone who is blind. For example, a water fountain can be enough for someone who is blind to be able to comprehend if they have been turned around. Elevators with two doors are disastrous for the blind. They must always be able to return from where they came from. If they enter the elevator heading north, they must be able to exit heading south.

Over lit *space* and under lit are each bad for those blind people that are not 100% blind. Texture is a big part of a blind person's experience of environment. They are in constant contact and receiving information of the world through their hands, feet and cane.

It should be noted that most blind people are very good at navigating the visual world and a great deal of their effort goes into ensuring that visually they fit into society as well. Also important is assimilation as early as possible with those that have full sight.

As previously presented Dr. David Michael Levin stated that "in visual perception of *space* the ceiling is most important, the walls are next and the floor is last" but for someone who is blind the floor and one wall are the most important planes to them. The ceiling does no more than keep rain off their heads. A corner is no more than a transition from one guide and a required change in direction.
A few points to consider while creating an enjoyable architectural experience for the blind: Blind people have a heightened sense of hearing and prefer low to middle frequencies.[20] Blind people prefer spatial proportions of smaller scale where a point of reference can be easily reached within a few steps.[21] Similar to a sighted experience of architecture rest periods or areas of little to no stimulus are required to cleanse the perceptual palate.

(Given the personal nature of the next section the research is written from first person perspective)

The Canadian National Institute for the Blind (CNIB) recommended that I meet with one of their orientation instructors to conduct a blind walk. On Tuesday, March 27th 2007. I met Cara Walker of CNIB at the Campus transit station on the OC transit system. With a glint in her eye, Cara suited me with a blinding mask and walking cane to set off for the SITE building built for Ottawa University in 2002, constructed by Daoust Construction and designed by IKOY architects (see Figure 7.1). The intention was to learn first hand what is like for someone who is blind to navigate architecture. The SITE building was chosen because, Cara says it is the worst building for her Ottawa University students to navigate and because I had no previous experience of the building. The experience was exhausting to say the least and very informative for thesis conclusions.

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[20] The Eyes of the Skin, p131
[21] Taken from A house for the Senses by Camilla Ryhl PHD Architect.

A Blind Sensibility –
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Darold Lindquist is a blind man who lost his sight at the age of one when cancer meant he had to have his two eyes removed. Darold was the subject of an article written by Phil Jenkins that appeared in the Ottawa Citizen on Monday December 4th, 2006. One can tell from reading the article, and was confirmed when I met him, that Darold is extremely comfortable with his condition and also confident in and able to articulate his experience of the surroundings. I ask Darold if he would be interested in helping me with the thesis. Darold questions whether he would actually be of any use. It will take some selling on my part to convinced Darold that he actually has something to offer an architecture student.

I asked the direct question of whether he knows of an environment that he enjoys? Darold explained that when he was younger, before having a wife and kids, he enjoyed hanging out in pubs. I was excited by this, thinking that he would say the atmosphere is a charged *soundscape* with the sounds of people talking or that he enjoyed the feel or smell of the wooden bar. To my dismay, his response was "I liked the beer".

Fishing for more, I asked if there was a room within his house that he loves to be in and he responded that he spends most of his time in his office but only because his computer was there. Darold explained that he cannot remember ever *Being* "wowed by a *space*". It has been difficult to get someone who is blind or involved with blind people to name even one *space* that is enjoyable. How can a person go through life without ever having been engaged by an environment? In the case of a blind person, is it because they expend so much energy in navigation that their perceptual senses and receptors (sensory systems) are occupied and thus unavailable for experiential engagement of *mind and body* with architecture? Darold agreed to give this question and the idea of meeting me to walk through a piece of architecture some thought and he will get back to me in the beginning of the week.

I find it revealing that having asked three blind people if they could tell me of a *space* they find engaging and only Darold mentioned that "restaurants and grocery stores are enjoyable" on account of the smells and vastness of the *space* allowing sound to carry but at the same time the aisles are easily navigated by himself." He also mentioned that not all the smells are enjoyable and I explained that not all architecture is visually enjoyable too.

How is it that a blind person cannot name a positive architectural experience?

I believe that a blind person uses their senses in a passive (receiving information rather than actively seeking and exploring) manor while navigating space and the world. Their cognitive processes (senses, memory and imagination) are preoccupied and are not available for exploration to determine whether a space is enjoyable or offers them an experience. This concept also translates to individuals with sight ability, if the functional attributes of architecture (for example circulation) are complex the inhabitant will use their cognitive systems primarily on way finding or navigation and effectively eliminate a possibility for a complete *mind and body* connection. Dr. Ashraf Salama Professor of Architecture at Qatar University explains: "*Humanity processes and comprehends in two ways; the first, a lineal step by step method through analysis and pattern*

(string theory – left side of brain); secondly, a spatial and relating style that seeks to construct patterns through imagination and creativity (right side of brain)."] If a positive architectural experience is to be provided to the blind simple and safe circulation is required so they can allow their senses to explore how the space sounds, smells and feels.

Further to this and in reflection of both the blind walk and talking with blind people, the senses can be organized into three categories; the first, reactive senses that must be provided for necessary navigation and comfort; second, active senses which can be utilized to provide architectural experience; and finally, senses that can be reactive or active which are primarily required for navigation and comfort but can be stimulated sparingly and for short periods of time to provide an experience. Of the eight senses listed previously plasticity and danger perception are reactive senses. Hearing, smell and texture are active senses. However, sight, environmental gage and kinaesthesia are the reactive-active senses. This concept is reflected in Figure 7.6. It should be noted that the reactive-active senses help free the reactive senses to aid in navigation. When one of the reactive-active senses is rendered on usable, especially sight, the reactive senses are forced to become active or reactive-active senses and the brain becomes preoccupied with navigation. This effectively eliminates an opportunity for enjoyable experience through the sensory systems.

The Essential Senses and the Experiential Availability

SENSORY SYSTEMS	Essential (Reactive)	Reactive-Active	Experientially Available (Active)
SIGHT SYSTEM		●	
HEARING SYSTEM			●
SMELL SYSTEM			●
HAPTIC SYSTEM(s)			
Tactility			●
Plasticity	●		
Kinesthesia		●	
Environmental Gage		●	
Danger	●		
Provision Importance	1st	2nd	3rd
	function		experience

Definitions:
Reactive senses respond to stimuli also described as passive senses.
Active senses seek stimuli also described as aggressive senses.
Reactive-Active senses can function both ways.

Haptic Senses:
Tactility (texture), Environmental Gage (temperature and humidity), Danger Perception (pain), Plasticity (spatial comprehension) and Kinesthesia (muscular/movement).

Figure 7.6 – The Essential Sensory Systems and their Availability for Architectural Experience

Investigating the blind experience was supposed to reveal how an architectural experience can be provided without including for the sight system. However, what was revealed is what must be allowed for if a sensory system other than sight is to be utilized. How then does one provide an architectural experience through the other senses? Many architects and artists have designed with primacy given to a sensory system other than sight. Investigated some of these examples would provide precedence and examples.

The architecture of Alvar Aalto is said to be *haptic* and tactile. Aalto would allow his buildings to be built and once the shell was complete, developed the interior *spaces* with special consideration for a connection between the inhabitant and his architecture (*mind and body* connection) (see Figure 7.7 and 7.8).

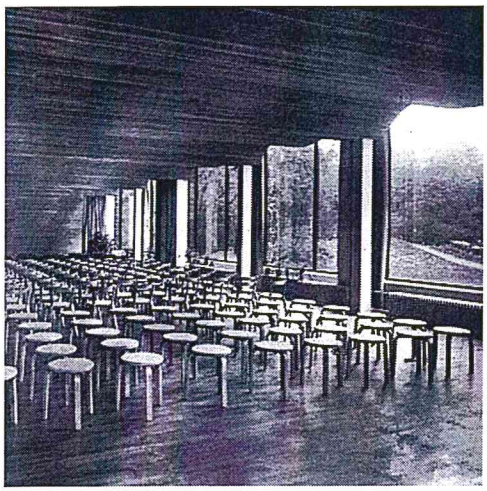

Figure 7.7 – Alvar Aalto's Interior of Viipuri Library

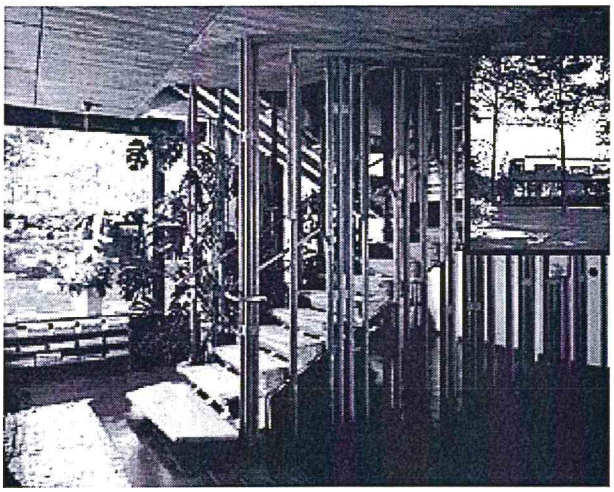

Figure 7.8 – Alvar Aalto's Interior of Villa Mairea

Frank Lloyd Wright's architecture was kinesthetically and texturally stimulating.[22] He insisted on using natural materials in search of his 'organic architecture'. These natural materials were rich in texture and had a natural smell associated, whether wood or stone (excluding his precast stone from natural comment but still texturally stimulating). Wright's Imperial Hotel (see Figure 7.9) used texture to signify progression from public to private *space*. Public was marked with high texture and private smooth.

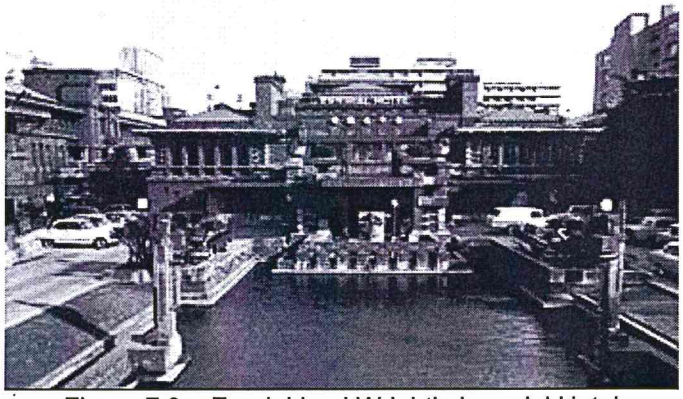

Figure 7.9 – Frank Lloyd Wright's Imperial Hotel

Louis Khan had a great intelligence for *haptic*s. His architecture firmly places the inhabitant within architecture by engaging all the senses. The inhabitant of a Louis Khan building cannot deny a heightened sense of *Being*. Louis Khan was a master of using natural light, brick detailing (tactility), gravity (*haptic*s) and, like Frank Lloyd Wright, natural materials (refer to Figure 7.10 and

[22] Experiencing Architecture p169

see case study section where Exeter building is investigated, presented and expressed using sensory scale system). [23]

> *"Khan explicitly rejected beauty as essential to architecture." "Khan emphasized people not obtuse symbolism of construction technique".* Sarah Goldhagen in *Louis Khan Situated Modernism.*

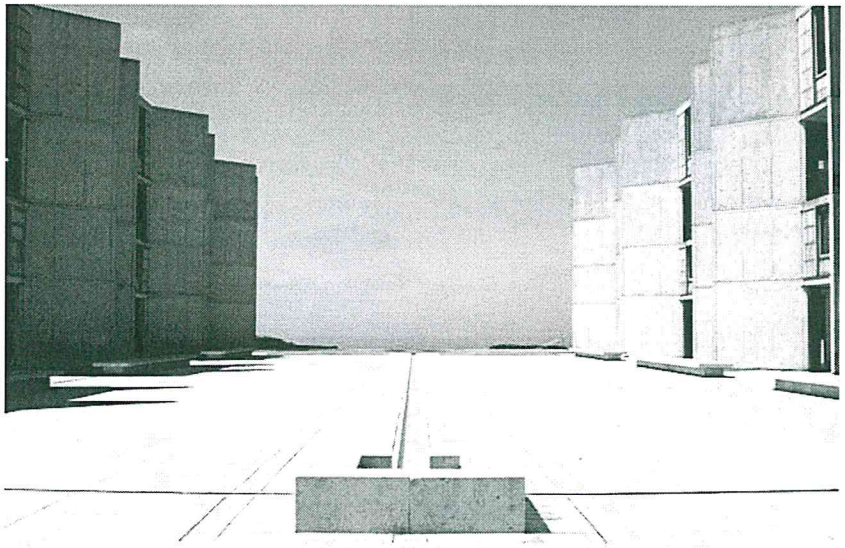

Figure 7.10 – Louis I. Khan's Exterior Space (Place) of Salk Institute

Many contemporary architects have been concerned with the *mind and body* connection of humanity with architecture. For example, Le Corbusier and Richard Meyer favoured sight (note Richard Meyer is still practicing). Later works of Corbusier incorporated tactile experiences in materiality and weight. Expressionist architects Erich Mendelsohn and Hans Scharoun favour muscular and *haptic* plasticity as a consequence of the suppression of ocular perspective dominance. Frank Lloyd Wright and Alvar AAlto's architecture is based on the full recognition of the embodied human condition and of the multitude of instinctual reactions hidden in the human conscious. Glann Murcutt, Steven Holl and Peter Zumthor provide heightened multitude of sensory experiences.[24]

The Finnish architect Juhani Pallasmaa (Author of The Eyes of the Skin – see bibliography) rejects allowing a visual dominance in architecture and considered sensory architecture as an umbrella theme that explicitly included aural architecture. R. Murray Schafer, in formulating the concept of the *soundscape* as a mixture of aural architecture and sound sources, created disciples who have passionately extended and applied his initial concept. Thomas Sheridan and Karen van Lengen

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[23] Information on Aalto, Wright and Khan based on Juhani Pallasmaa's opinion in *The Eyes of the Skin,* p35, also in Louis *Khan Situated Modernism* by Sarah Goldhagen Williams, and *Alvar Aalto in his own words* edited by Göran Schildt New York: Rizzoli, 1998, c1997.

[24] Section based on Pallasmaa, Juhani. 2005. *The Eyes of The Skin.* West Sussex, (England. John Wiley and Sons ltd.) p71

argued that architectural schools should intentionally include aural considerations in order "to achieve a richer, more satisfying built environment." In their treatise on spatial acoustics, Hope Bagenal and Alex Wood recognized the social and cultural aspects of aural architecture.[25]

> *"Stephen Holl carefully consider[s] materiality, light, colour and texture" to "engage the inhabitants imagination" to "transform a passive observer into a participant".* Alberto Pérez-Gomez in *Intertwining,* forward (refer to Figure 7.11)

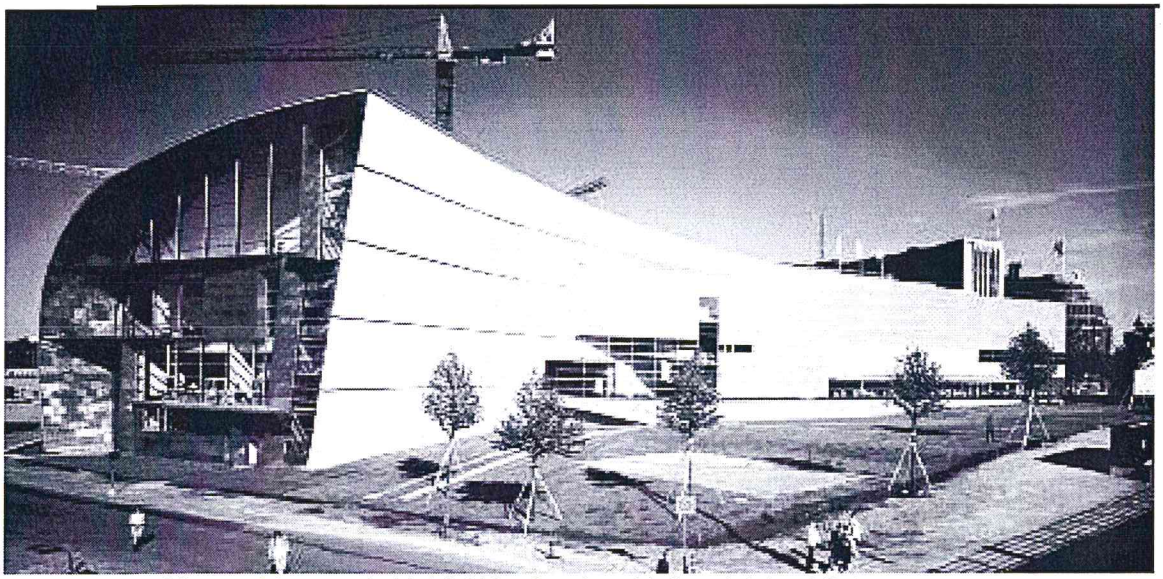

Figure 7.11 – Kiasma Museum in Helsinki by Stephen Holl and Juhani Palasmaa

Antonio Gaudi's architecture is undeniably textured (whether ornate or smooth) (see Figure 7.12 And 7.13). Some think Gaudi was actually colour blind and believe this is the reason for his focus on texture. Gaudi was fascinated with nature and tried in every instance to be influenced by it. One can then draw that as nature is a total sensory experience that Gaudi was also influenced by this. More than mere structures, the works of Catalan architect Antonio Gaudi delight the senses and ignite the imagination. His architecture is "alive with movement"[26] such as the tiled and undulating walls of Parc Guell and the chimney posts of the La Pedrera apartment building.

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[25] *Spaces* Speak are You Listening? p7
[26] By Dana Hawkins Simons www.usnews.com June 30, 2003

Figure 7.12 - Antoni Gaudí's Parc Güell

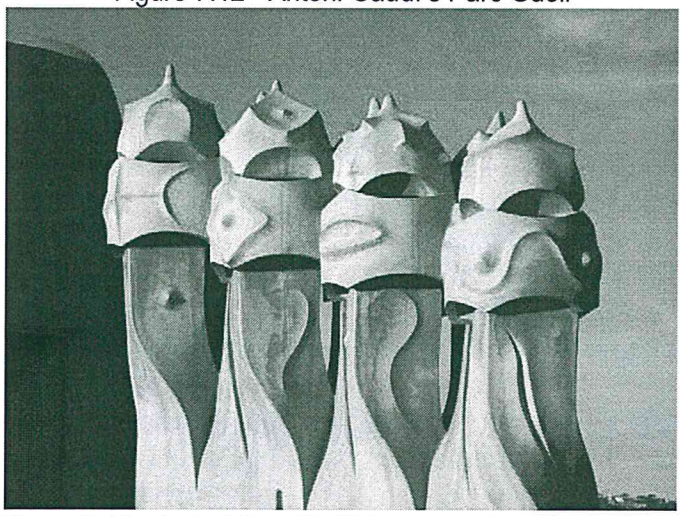

Figure 7.13 - Antoni Gaudí's Chimney Posts of La Pedrera

Some examples of architecture built with consideration for a sensory system other than sight are: Thorvaldsen's museum in Copenhagen designed by Michael Gottlieb Bindesbøll (see Figure 7.14). The official website for the museum states "visit Thorvaldsens Museum for a truly sensory experience. The characteristically colourful museum building is a fascinating combination of architecture, painting and sculpture." The museum houses the works of Denmark's most famous artist, Bertel Thorvaldsen (1770-1844). The museum has an acoustical effect very much like that of passageways and tunnels. (Experiencing Architecture, p225).

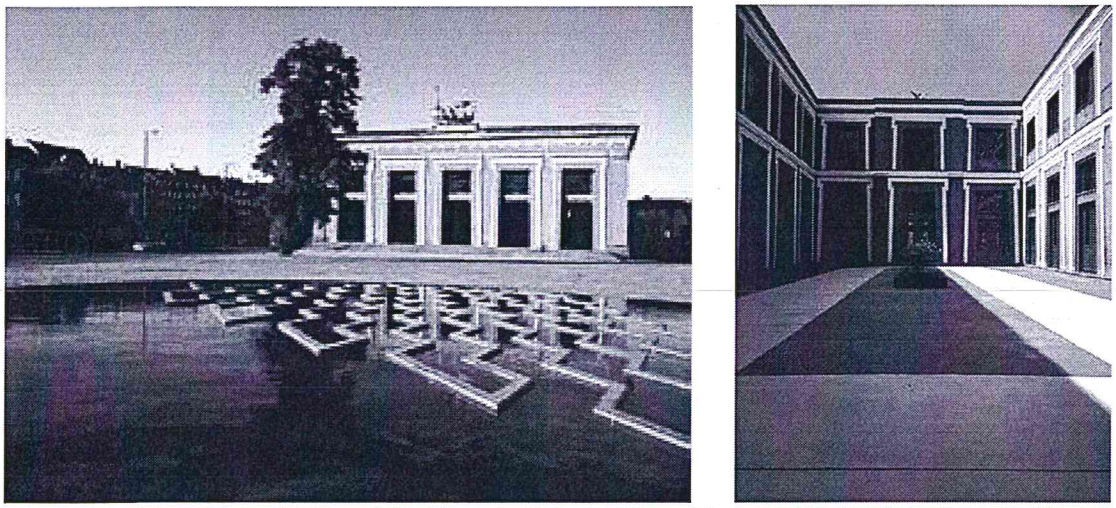

Figure 7.14 – Exterior and Internal Courtyard of Thorvaldsen Museum by Gottlieb Bindesbøll

Art and Monuments

Maya Lin's Vietnam War memorial (see Figure 7.19) is a great example of creating with all the sense systems in mind and its success attests to the success and importance of a *mind and body* connection of humanity to architecture or in this case art. Time is represented by the chronological order of the dead soldiers commemorated. Sight is appeased by contradiction of the urban environment. The memorial is in axis with both the Washington and Lincoln memorials, both white but Lin's memorial is black. The memorial thickens in width to represent the point of the war with the highest amount of casualties. In addition, visually, the monument engages humanity with its highly reflective surface, as onlooker becomes part of those names listed. Haptically, the names of the soldiers are engraved in the black surface and one cannot resist the urge to trace the names as they pass. This creates an intimacy between the monument and the viewer or more appropriately the name and the viewer. In addition, *haptic*ally the sidewalk ascends down influencing a sense of grief.[27]

[27] Sensory Design p106

Figure 7.19 - Maya Lin's Vietnam War Memorial

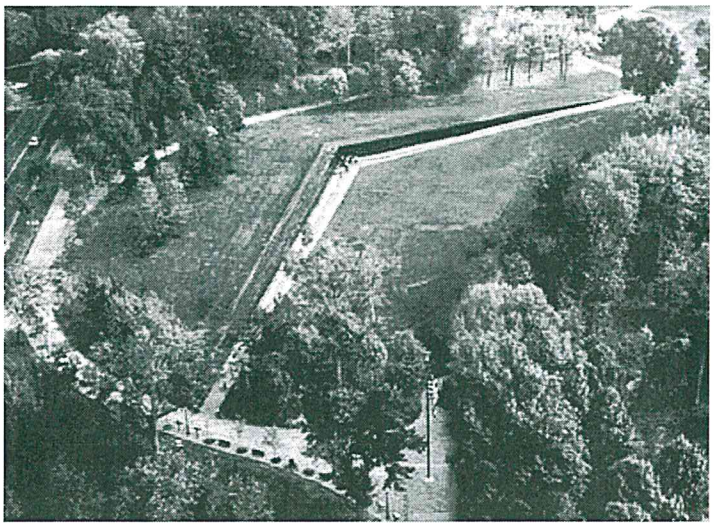

Figure 7.20 – Overhead of Maya Lin's Vietnam War Memorial

Religious and Social Practices

As well as artistic and architectural examples of Katsura Imperial Villa in Japan offers appropriate precedence (see Figure 7.21 and 7.22). As expressed in the book Sensory Design "the gardens are deceptively small relying on sensory restatements set through the clever use of pathway intricacies, angle of view, and time passage, as well as subtle alterations in *haptic* information [where changes in] level, position, and surface all compel us to pay attention as we walk it. Curiously, this concern may result in an increased biological sensitivity to the qualities of the path generally." The author goes on to suggest the "uneven pathways heighten our awareness [] by obliging us to bring our sensory organs into the best alignment."

Figure 7.21 - Katsura Imperial Villa in Japan

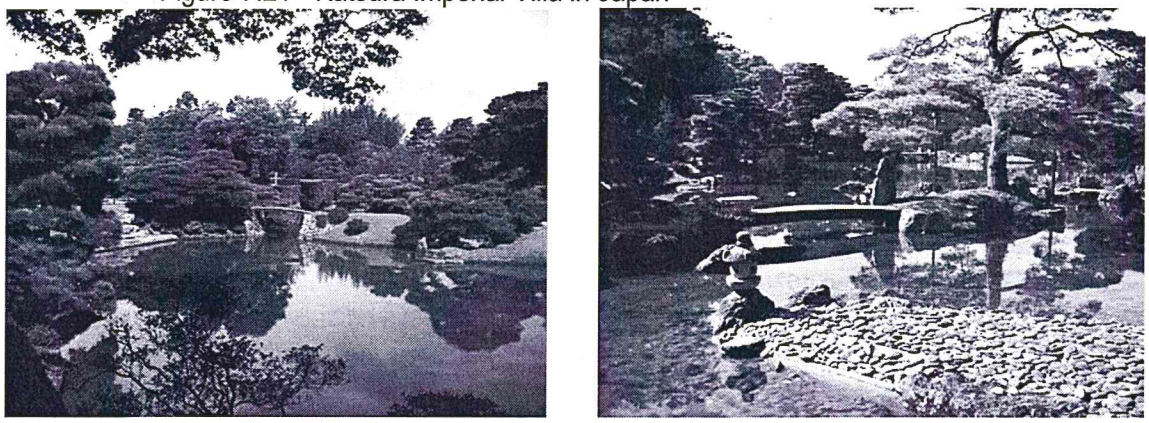

Figure 7.22 – Gardens of Katsura Imperial Villa in Japan

The authors of Sensory Design explain the entrance gardens for Japanese tea-gardens (see Figure 7.23). The garden path or Roji (dewy path) is really an extended entryway composed of gravel and stepping stones. One must pass through a simple maze of mosses and their woodland plantings. This procession is meant to replicate, on a small scale, the long journey from the city to a teahouse in the mountains.

This journey is a ceremony on its own that takes place over a short period of time and is marked by sensual focal points that are encountered en route. "Thus the roji consists of a series of landmarks, at which the visitor is encouraged to

release the concerns of daily life and progressively a 'tea' state of mind".[28] The object of the garden walk is cleansing the spirit in preparation for arrival at the tearoom and its own ceremony. The roji provides the guests with a series of spatial experiences as they walk toward the tea room. The experience of this procession involves time, sight and haptics.[29]

Teachings of School of Architecture

Bauhaus school of architecture and art taught methods to heighten the students degree of awareness to the senses and their possibilities. "by recording their personal impressions of materials the students gathered a *compendium* of valuable information for future use [while designing and creating]." *(Experiencing Architecture*, p176). Bauhaus taught texturally and learning through hands on experience: "by recording their impressions of the various materials they worked with, the students were finally able to sense a sort of musical scale of textural values" (*Sensory Design* p145).

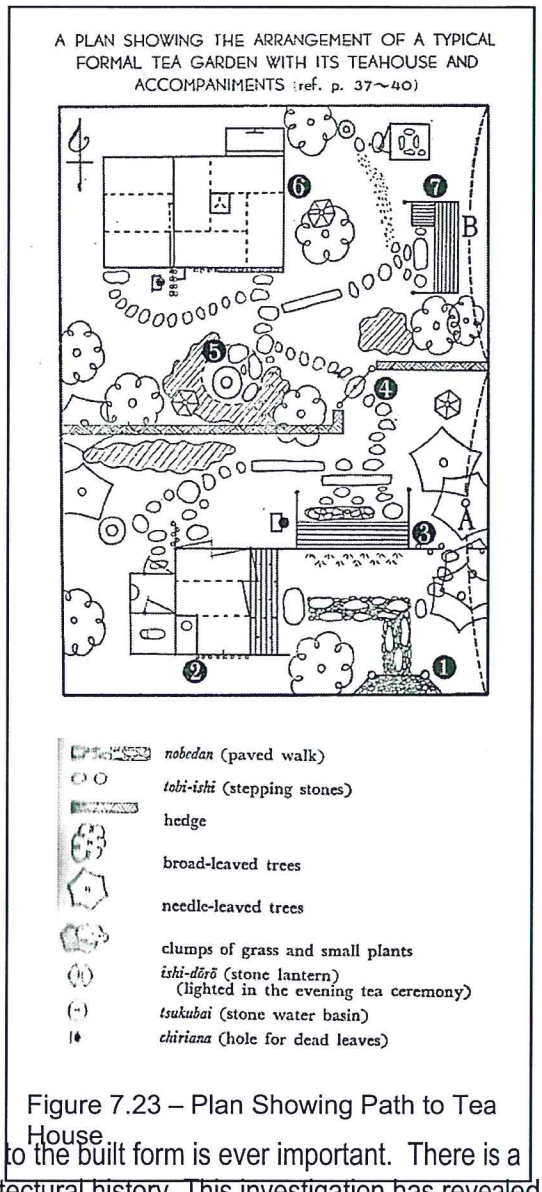

Figure 7.23 – Plan Showing Path to Tea House

3 Conclusion

In conclusion, the connection of the *mind and body* to the built form is ever important. There is a precedence of this connection shown through architectural history. This investigation has revealed how the senses can be utilized to provide a *mind and body* connection to the built form. Architecture relies heavily on the sensory system of sight but the other sensory systems can play an effective role. In addition, striving for an overall balanced approach with the sensory systems ensures the connection is complete and comprehensible. This places the experience of humanity or inhabitant equal to bricks and mortar.

[28] Article by Marc Keane in *Japanese Entrances: Cultural Symbols in the Landdscape* in Landscape Architecture magazine September 1988, p120.
[29] Authors of *Sensory Design*, P106.

A Blind Sensibility –
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One cannot reject the necessary roles played by structure, technology and program. A building must be constructed with much thought to construction and materials. In addition, one must consider site and climate and the technological systems necessary for well-*being*. However, as architects we must not ignore the very thing that separates architecture from building and that is the experience of an inhabitant within.

While designing with the sense of hearing system one must consider…

A *space* is understood and appreciated through its echo as much as through its visual shape. Acknowledging this through architectural design ensures a connection of the *mind and body* with architecture is achieved. The equipment near or within a space can lead to a constant sound level (white noise) it must either be removed or prevented or an event must exceed the sound level. Materials have a great affect on acoustic quality of space. Also to be considered is the function of the space will determine what the constant levels are and need to be. If the space is intended for performance or communication one must ensure appropriate speech levels.

Towards smell one must consider…

In order to design for the sense of smell or for the smell system we need to consider that the head would need to be above any opening in the walls forming the *space*. This allows the walls and ceiling to act as a reverse petri dish. Also of great importance when designing with smell system in mind is the function of the space. It would be very difficult to provide a smell event in a laboratory where the air changes are high. Also if the space is a kitchen or garbage room one might want to consider the negative smells that are associated with their functions and in the case of a kitchen perhaps the cons out way the pros. Negative odours associated with materials and equipment must also be considered. The location of the site and natural site conditions must also be considered. A Greenfield site near a forest would provide natural smellscapes that could be allowed to penetrate into the building with strategically placed windows. Every natural materials has a smell associated, one must learn their attributes.

Visually one must consider….

Visually one must consider, in relation to light, we must consider day lighting and how it can be integrated with artificial light. Second, how we can responsibly light interior *space* in a way that does not just over load interior *space* eliminating chance for contrast with shadows. Thirdly, we must consider the dramatics involved with shadows and we can use work of Louis Khan as a guide. Next, the use of colour has been investigated at great lengths and must be considered optically. Finally, as revealed through investigating the blind experience of architecture our ability to rely on the sight system for navigation allows our other senses to be engaged with architecture. We must ensure that architecture maintains simple circulation easily navigated with the help of our sight system.

Haptically one must consider....

While designing with the haptic system in mind, one must consider that spatial comprehension must be possible and the inhabitant must always feel save too. Regarding way finding one must always consider how the body moves through space and how easy it is within the space. The skin is perhaps the most sensitive sensory organ, much care should be taken while designing towards the haptic system. For example, why is a textured experience always provided within washrooms where one is least likely to want to have a textural experience?

Ideas stemming from research:

The most effective area of a building to prepare for the interaction of humanity with architecture would be a threshold. A threshold is typically found at the sill of a door way but in broad terms it is where one *space* transitions to another. Therefore, a threshold can be either a floor element (marble, wood, aluminum thresholds usually contradictory in colour and or elevation), a vertical element (column, wall or demarcated with colour or texture), a ceiling element (archway or bulkhead) or a sensory element (more on this later).

To explain, the most typical threshold that springs to mind is a marble or aluminum plate within a door opening. Usually the width of the door it is in place to mark the point at which someone is no longer outside but in fact inside. Another extruded version of a threshold is a vestibule commonly thought of as a series of doors in succession usually separated by a distance and where the climate within the distance is separately controlled. There are also interior vestibules used as a point before entering or exiting an area completely. It brings to mind University amphitheaters where a vestibule is used to funnel people into the theater and to provide a sound barrier between corridor and theater. Now imagine this vestibule as a separately controlled area climate wise but also in regards to sensory experience. One can easily use these small areas as an opportunity to introduce sound, texture, light, or even smell. In addition, if you consider the experience of opening the door or spatial feeling of coming from an open area into a closed area the experience is a *haptic* one as well.

[T]ransitional elements are often insignificant in design or functional analysis but significant for spatial experience. Juhani Pallasmaa *The Eyes of the Skin* p119.

We naturally have an attraction to natural materials visually. We prefer materials such as wood and stone to vinyl siding and cast stone. This is also true for all the senses. Texturally, natural stone offers more than concrete block. Olfactorally (smell) natural wood smells much nicer that composites and glued material.

Another area of opportunity to design with the sensory systems is stairs. Stairs can stimulate all the senses with ease. The act of walking down the stairs while holding the railing puts one in constant contact with the environment. In addition, as a staircase is often compartmentalized from

the remainder of the building the opportunity in regards to the hearing system and smell system is great.

Johnathan Miller "Apart from their practical function, staircases are often theatrical in nature. They enable human beings to state their preoccupations, choreograph their politics, and dramatize their religions. For that reason they are often designed with hyperbolic redundancy." John Templar believes that "stairs engage the user's motions and their senses to a remarkable degree perhaps more so than any other architectural element."

Materials have construction qualities as well as sensory qualities. As an architect, one should consider materials for the attributes they have. Using the sensory scale, we can articulate the sensory qualities of the materials for later use while planning and designing architecture. Qualities of the materials are measured by eye, ear, nose, and skin.

The critical questions for architecture must be: first, how can we allow for the individual and different reactions each inhabitant might have based on their history; second, how can we ensure that the senses are addressed with spatio-sensory attributes; and third, how can we translate this into architecture?

The surprising outcome of this thesis is the sensory scale. The sensory scale is a tool to investigate physical *space* and materials to determine their sensory attributes. The continual investigation of architecture and materials using this scale can build a sensory repertoire to prepare spatial experiences.

In the closing comments of Forrest Wilson's book he asked: "what kind of architecture will we fashion when we realize that the question of architecture is not art but humankind itself?"[30] In response, this is likely the value of our senses in application to architecture as it sensitizes architecture to the modalities of humanity's spatial comprehension and allows for a *mind and body* connection of inhabitant with architecture. It also elevates the experience of humanity to become equal with bricks, mortar, spatial functionality and metaphorical or representational expression in built form.

Any errors in fact and logic are the responsibility of the author and any speculative foolishness that leaked through the edit process. Given the scope of this thesis and that this is a first draft, one cannot be or become an expert on the dozens of disciplines that are part of spatial awareness leading to a *mind and body* connection of inhabitant with architecture. The research attempts to provide ample citations and quotes from individuals that are respected within their own professional fields. The pleasant and unattended result of the thesis is, what has been gathered here is a foundation to build upon through a career thereby improving, correcting, applying, and extending the information covered here. This is really only the beginning.

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[30] "A Graphic Survey of Perception and Behavior for the Design Professions (New York: Van Nostrand Reinhold, 1984) p274

A Blind Sensibility –
A Non Visual Experience of Architecture

Note: refer to research paper for appropriate quote, bibliography and image credits.

Note: refer to Appendix 'A' - Demonstration Project where the research was implemented in an architectural design project.

Note: all material presented is available online at www.ablindsensibility.com.

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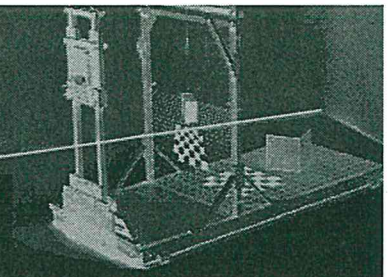
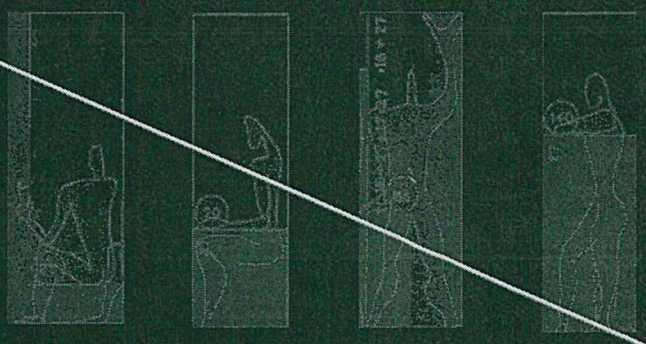
A Blind Sensibility –
A Non Visual Experience of Architecture



APPENDIX 'F'
Précis



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Appendix F - Précis

1. ***Elements of architecture: from form to place*** by Pierre von Meiss

Parti Pris of the book: As a society we must repress the debilitating and environmentally destructive practice of proliferating freestanding buildings (objects) [but objects as subjects]

See comments blow (1 and 2).

- Stage sets are a kind of architecture, but architecture is not a stage set (pg x)
- What is architecture? (Architecture vs. building)..."to create an impression on the mind" [facilitating use vs. providing an experience] Architecture is developed not by application of rules but through patient interpretation of purpose, location and creative means. (pg xiii)
- The body was once the reference for design and scale of architecture. Space and place was once a concern of architecture...now contemporaries are concerned with image, ego, text, sign.... (pg xiv)
- People with use of all senses experience pleasure in architecture through visual and kinesthetic (body movement) (pg 15)
- Arnheim suggested that we stop describing space with what creates the space (floor, wall, ceiling) and begin to explain with field of energies, implied magnetic fields – modified by distances, expansions, and contractions. (pg 25)
- Although laws act forcefully on our visual perception we must be conscious also that our memory and intelligence affects this to [thought: if imagination organizes and rationalizes sensory perception does not our memory and intelligence affect our imagination or capacity for it?] (pg 25)
- "We do not see what we see but [rather] what we expect to find." (pg 27)
- in a time where society is bombarded with visual and virtual for most cases images – we have become desensitized or exhausted by this – using the full spectrum available from all the senses will help provide an architecture with depth and stability (pg 27)

see comments below (3).

- addressing historical connection of architecture and body – it is our way to measure scale, geometry, amorphous, hard and soft, narrow and wide, strong and weak. (pg 57)
- great images of past connection of body to architecture (pg 57)
- Any architecture designed from exterior is not architecture rather stage set (pg 101)
- The idea is not simply space but the experience of space (pg 101)
- Moholy Nagi "spatial composition is not, in the first place, a question of materials" (pg 101) Question: So what is it?
- Space exists by the illumination of objects and enclosing surfaces...though echo, tactile qualities and smell help too (pg 121)
- Architecture is...the art of placing and controlling light sources in space (pg 121)
- Corbu "Architecture is the skillful, correct and magnificent play of volumes in light, shadows and highlights reveal their forms" (pg 121)

See comment below (4).

- Existential concepts: "The experience of architecture reflects the joys and tolls of humanity and makes visible the inhabited world (pg 135)
- Space changes with the movement of the sun – place changes with the movement of human beings (pg 135)
- Link life to the fundamental and structural characteristics of a built fabric (pg 139)

See comment below (5)

- To built means to define and limit a portion of land distinct from the rest of the universe and assign a particular role to it. Define edges or limits, thresholds. (pg 148)
- 3 rules of thresholds: utilitarian role, protective role and semantic role (pg 148)

see comment below (6).

- identity: Humans most identify themselves as a human being, a member of a group, an individual with liberty and responsibility (pg 161)

- architecture is playing a role in reducing or strengthening our sense of identity (pg 161)
- Rappaport "We must distinguish two types of manifestations of identity: private identity and public identity (pg 161)
- In order to design reflecting a group identity 3 approaches are options: interpretive, involve group in design, client decides what it wants before choosing architect/client chose architect knowing what they'll get (pg 162)

See comment below (7).

- Approach to "technique": glorification of technique, technique as an image, falsification of technique, technique subjected, and technique tamed (pg 168)

See comment below (8).

- Construction breaks off its partnership with experience. Making illusory any possible contribution of a tacit agreement to the establishment of a conventional code. (comment in relation to architecture as commodity) (pg 201)
- "Eupalinos et L'Architecte" fable. Quote: Paul Valery speaks "when I compose...I seek this form passionately, endeavoring to create an object which delights the eye, which will converse with the mind, which will be in harmony with reason and with good manners – the hidden meanings, illusions, are often revealed with the experience of man (pg 202)

Comments:

1. Thought: Have we underestimated or are we ignoring the propensities available in all senses

2. What is Gestalt Psychology and phenomenology?

3. Thought: Also adding to argument of desensitizing or superficiality ....sight...current approach to spatial organization. – Rather than ordered or repetitious, similar, proximity with enclosure or orientation, is chaotic. Conjure anxiety, self consciousness, etc.

4. Thought: If we spent as much time concentrating on sound experience as we do on light...types of windows: round, curtain wall, portal, slits...Imagine what we could accomplish

5. Thought: Design (vacuous) without the inclusion of all senses is equal to developer scraping land [braising all inherent qualities].

6. Thought: Could use threshold as organizing principle for thesis design [and door]

7. Thought: Untruth is unwanted but only way to determine visual truth from untruth is by verifying with the other senses.

8. Thought: for practice not thesis. "Build according to the rules of the art (pg 201)

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2. **Experiencing Architecture** - by Steen Eiler Rasmussen

Profusely illustrated with fine instances of architectural experimentation through the centuries, *Experiencing Architecture* manages to convey the intellectual excitement of superb design. From teacups, riding boots, golf balls, and underwater sculpture to the villas of Palladio and the fish-feeding pavilion of the Peking Winter Palace, the author ranges over the less-familiar byways of designing excellence. (book description from http://www.amazon.com/)

- Architecture means shapes formed around [humanity] formed to be lived in, and not merely seen from the outside. p10

Question: what does Deprecatingly mean? Definition: express disapproval with regret.

- How a baby discovers – through taste, touch, and hands. p15

See comments below (1).

- Man puts his stamp on the implements they make and the implements exert their influence on man. P30
- Physiognomy p32

See comments below (2).

- Architecture was designed for a specific purpose and attuned to the rhythm of the specific era in which it was created. P33(1)
- Why relying on vision is bad. (1) Only sense that is fleeting (snapshots). (2) can be fooled (3) involves a distant interaction (4) the designed perspective could not be forced on the user (Cityscape display at MGM studios) p35
- No two people see an object the same…we all have our own subjective impression p36

- Purpose of architecture used to be to give form with materials…now work with empty space between solids and consider the forming of that space p46

See comments below (3).

- Texture. Frank Lloyd Wright p169
- Arne Jacobsen (arch) designed with texture p 176
- Bauhaus trained for hightened senses p176 (2)
- Japanese architecture seeks to use like textures, American uses contradicting p183
- Light p187
- Eye p189
- Dutch relationship with light p199
- Dutch relationship with texture p200
- Colour p215
- Hearing p224
- Joy by architecture like joy from nature p237

Comments:
1. Thoughts: "Architecture as a tool" Possible thesis foundation.
2. Question: what is physiognomy? Definition: Also called anthroposcopy, representing the art of determining character or personal characteristics from the form or features of the body, esp. of the face. (Definition from www.dictionary.com)
3. Thought: If architecture continues to displace/place man on sidewalks…st. peter's very diff with no people (cavity) but with celebration p52
Comment: that architects wouldn't dream of using contrast to reflect detail or concept…just no true anymore (find proof) p59

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3. ***Eye and Brain; the Psychology of Seeing*** by Richard Langton Gregory

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- The brain is highly active – constructing perceptions from hardly adequate information from the senses (pretext 1)
- Burst of interest on consciousness especially how sensations (qualia) may be explained (ix)
- Threw the baby our wit the bath water. Denial of conciousness makes psychology like physics (pg 3)
- The whole should not be seemingly to sum of its parts (pg 3)
- How does mosaic of stimulation get organized into conceivable messages (vision and hearing) (pg 6)
- Tropism and reflex (pg 7)
- Indirect and active stimuli (pg 9)

- Conception vs. perception illusion perceived even when known (pg 8)
- Realism – perception is supposed to be "picked up" from the world, rather than created as representation (appropriate application/ of senses) (pg 9)
- Senses are like scientific hypothesis – not only ambiguities but theoretic distortions, paradoxes, and or fictions (pg 13)
- Perceptions – have consciousness (pg 13)
- Only humans have language and can recreate vision reality (paint) why? – both pictures and language depend on imaginative use of ambiguities (pg 13)
- (expand writing) perception is affected by past/history/context. People only see images they know in clouds above (pg 13)
- Concept about brain evolution. Brain before eye or vice versa? Chicken/egg. Brain evolved to receive and interpret images (pg 24)
- Nautilus – fish with pin hole for eye (pg 25)
- Products (light sensors) are produced with natures influence (dragon fly eye – how sensitivity to light – assumed example, find a true one if used) why doesn't architecture use nature as precedence. (ant farm, beehive) or insect skeleton structure (pg 28)
- Rene Descartes (pg 35)
- Cornea is not connected to the body. No blood flow – "Aqueous Humour" (pg 36)
- Coclea – ear part isolated from body to insulate from noise of pulsing veins (pg 37)
- Servomechanism (pg 40)

See comments below (1).

- Title design pun with pupil (eye/student) (pg 42)
- White paper (edge) perception phenomenon (pg 49)
- Brain involved with memory sensation and perception (pg 60-70)
- Weber's Law – lit candle in bright room: little difference, but dark room: emotional difference (pg 94)
- Threshold intensity, noise increases threshold intensity (pg 95)
- Can you hear lights, taste sound, smell colour, ...? (pg 97)
- If sight helps us survive (find food, see enemies, find mates) how do the blind accomplish (pg 98)
- What is true in observed world of objects does not necessarily hold for errors of observation or illusion (pg 106)
- Senses involve nerves, nerves can only give one signal, if already reacting to cold a nerve can not register weight. The body and brain have only so many signalers and receptors. Therefore can a blind person experience sound/smell/touch more deeply than sight privileged? Privileged or disprivileged? Is our (sight people) experience of architecture superficial? Can something be gained by placing sight criteria behind the other senses (pg 108)
- When we move toward an object (close) to the right, the object seems to move toward us to the left items behind object (far) seem to move with us (pg 114)
- Why the moon moves with us in the car (pg 115)
- Humans in dark with lights on joints reveal size sex (pg 116)
- Metaphysical's – believe we have some knowledge of world apart from sensory experience, empiricists claim knowledge is derived from observations experiments and measurements (senses) (pg 136)
- Perception is – contextual, dependant on receptors, affected by knowledge and assumption (pg 136)
- Visual space is no Euclidean (pg 137)

See comments below (2).

- Concept of inverted glasses: wear them long enough, you will get used to it and normal becomes odd (pg 140)
- Upside down goggles worn familiar objects upside down until touches candle upside down but when lit it flip over (pg 143)
- Cultural differences (pg 154)
- Man granted sight in adult hood depressed by imperfections, lost will to live (pg 154)
- Sight or perception is concerned with identifying objects not intimacy (pg 160)

- English empiricist philosopher John Stuart Mill describes "objects" as permanent possibilities of sensations (is this architecture) (pg 161)

See comments (3).

- Lack of contact/grounding is similar to what schizophrenia – if vision isolates us (condition) therefore schizophrenic society (pg 199)
- Macbeth's quote regarding dagger (pg 244)
- Emotion affects perception. Perception can evoke emotion (pg 244)
- Consciousness – senses (pg 252)

Comments:
1. What does servomechanism mean?
2. Thought: Space is 4 dimensional.
3. Thought: The other senses help us determine fact from illusion (pg 194)

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4. ***Intertwining*** by Stephen Holl

- Holl carefully considers materiality, light, colour and texture – to engage the inhabitants imagination (pg 9)
- Meaning/being/presence = content/depth (pg 9)
- Transform passive observer into participant. (pg 9)
- Space/time (pg 10)

See comments below (1)

- Investigate Plato's elements (3) of reality (pg 10)
- Power of the individual imagination (pg 10)

See comments below (2)

- To transcend irrelevant self representing [visual] games (pg 10)

See comments below (3 and 4)

- Privatized world where the perception of reality is increasingly identified with a telematic picture (pg 10)

See comments below (5).

- Great quote expressing society problem through fluctuating economy, info overload, ever increasing amount of technology, detaching natural phenomenon, given rise to nihilism attitudes. (pg 11)

See comments (6).

- Seen described showing how view, window, floor, desk, erasure are all connected in the experience of the mind (pg 12)
- Perception can not be separated into geometries, activities and sensations. [but can be to the brain] (pg 12)

See comment below (7)

- Time is fourth dimension of architecture (pg 14)

See comments below (8)

- Superstring theory talks of 5^{th}, 6^{th}, and 7^{th} dimensions (Pg 14)

See comments below (9)

- Types of geometries: Euclidean, topological, Boolean (pg 15)
- architecture is organic link of concept and form (pg 15)

see comments below (10)

- synthetics – plastics, anodized metal, glazed tile, cultured stone, faux painting… Texture and essence of material is displaced (pg 16)
- body moves through and simultaneously is coupled with substances of architectural space. The "flesh of the world" (pg 16)

see comments below (11).

Comments:

1. Thought: architecture cements space and time (expand to show how sight privilege falsifies space and time)
2. Thought: if the intent of architecture is to engage individuals imagination and society's ocular centricism has desensitized us from receiving visual message – we most rely on other senses to correct

3. Thought: can we work in – taken info at face value [wikipedia] without considering source or relevance – driven by lack of time for consideration and contemplation, meditation...

4. What is Nihilism: Rejection of religious or moral principals, opposition to all constituted authority or government

5. What is Telematic:

6. Thought: consider whether having the ability to tune out architecture experience is needed?

7. Thought: what is a blind persons perception of time? We see sunlight change to know night and day

8. Thought: what are the blind dimension

9. What is Superstring Theory?

10. Thought: 4 dimension – psychological

11. Thought: does vision lead to identity? If so does vision also reveal difference?

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5. ***Louis Khan Situated Modernism*** by Sarah Goldhagen WilliamsDescription

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- Try...to understand why his (Louis Khan) buildings effectuate the experiences that they do. (pg 9)
- Khan explicitly rejected beauty as essential to architecture (pg 59)
- Existentialism...Giedion "We need signs and symbols which spring directly to the senses" (pg 60)
- In search of authenticity (pg 60)
- Authenticity requires that we extricate ourselves from construction identity through representation. Society has taught people to see themselves in a mirror as othes see them (pg 61)
- Roquentin's epiphanic moment occur mainly when he perceives not with his eyes but rather with his skin (pg 61)

See comments below (1).

- Existentialism or authenticity: to provoke, heighten awareness of this moment only (pg 87)

See comments below (2, 3 and 4).

- How Kahn wanted to achieve architecture of authenticity (pg 136)

See comments below (5).

- Architects should design to nurture an individual's sense of obligation to participate in life and governance of one's community (pg 143)
- "let us assume a sense of community is a desirable goal...let us assume that design of our physical space has a affect in creating a sense of community" (pg 144)
- Corbu "The dialoque between individual and the collective" (pg 144)
- Renaissance architecture models refer to proportional relationship, Leonardo's church of vitruvian man inscribed in both a circle and square (pg 146)
- Geoffrey Scott's the Architecture of Humanism (pg 147)
- Khan: "it is in the nature of art that it should be different from nature" You are not allowed to do things such as nature does, if you try, nature only laughs at you (pg 147)

- Khan strived for an architecture that as Gideon put it "sprung directly from the senses" (pg 152)
- Khan's hope was the individual would feel a space inflected toward their needs which would heighten their awareness of their particular situation (pg 153)
- Khan's emphasis was on people and not obtuse symbolism or construction technique (pg 152)
- Khan's techniqe: nurture community and search for authenticity (pg 161)
- Problem with ocular centric experience is: it is temporary or sporadic it is not all encompassing, eyes can be exhausted or ignorant. The experience is merely a simple sequence of contingent moment (pg 161)

See comments below (6).

- Linking Corbu, Aalto, and Khan (pg 164)
- Ohara explained Khan designed with form, weight, material, texture, light and sound, facades, texture (pg 187)
- Concept to locate people socially, psychologically and physically at center of architecture

See comments below (7).

- Great quote expressing the problem with the direction of society (pg 215)
- Existentialism (pg 201)

See comments below (8).

- Moral obligated and psychologically connected to community – philosophies – ethical paradigm drawn from existentialism – "situated person" (pg 203)

Comments:

1. Thought: from Corbu's use of body to scale architecture to Louis Khan's authenticity of existentialism, great architects have been concerned with how the body/mind is related or linked to architecture.

2. Research Saarinen's First Christian Church in Columbus, India

3. Thought: Could we recreate womb like conditions.

4. Thought: Here is your brain on drugs, here is your brain on architecture

5. Thought: response to nihilism or disconnection sight cause of society, a way to foster social responding, contemporary architecture is superficial, architectural experience is deepened by including anti-ocular stimuli, architecture sealed to our brain rather than bodies. Disconnection of man and nature, mature full sense experience.

6. What is contingent?

7. Thought: in a visually dominated world, it is our (my) world – we are self governing – no one can tell us where we can't look, we don't belong to a community we merely see the differences of those around us. Substance is judged at a glance with no further investigation…vision disconnects us from humanity

8. Thought: Can no longer rely on vision (see above point)

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6. ***Modernity and the Hegemony of Vision*** by David Michael Levin

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- Parmenides (475 BC) philosophical thinking in western world was drawn…of sight…these philosophical teaching call to mind…the dangers in placing too much trust in vision… (pg 1)

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- Vision is technology of the self (pg 2)
- Mysteries of eulesis – every spring for hundreds of years people gathered in dark caves to learn of death, rebirth, and immortality bestowed by the goddess "Demeter" (pg 2)
- "The nobility of sight: A study on the phenomenology of the senses." (pg 2)
- Beginning with ancient Greeks...western culture has been dominated by ocular centric paradigm (pg 2)
- "Enlightenment" was rational...but how has it evolved and what has it become? (pg 3)
- How does vision figure in methodology of social sciences. Is visualism implicated in problems of relativism? Is it implicated in narcissism of will to power? Is it responsible for dangerous politics? (pg 3)
- What is the postmodern future beyond the current ocular centric governance. Once the intent was to see but now should be comprehension. From spectator to participant. (pg 3)

See comments below (1)

- Heidegger, Foucalt, and Derrida – argue that thought and culture of modernity have not only continued...sight privileging but allowed its worst tendencies to dominate (pg 5)
- Being reduced to being represented (pg 5)
- We can see the other side of the mirror now – sight is phallocentric, logocentric heliopolitics driven by violence of light and threatening to impose order of presence wherever its mastery can reach. (pg 7)
- Each above philosopher has proposed their own "countervisions" in reaction

See comments below (2)

- Chapter summarizing historical attitude toward light (pg 8)
- Vision is no longer a path to wisdom and redemption...rather...threaten[s] a new "darkness" (pg 9)
- Intention to transform vision to become an aide in constructed a communal mind rather than an isolating tool (pg 10)
- Rorty – Proposed a mind based truth rather than vision based (pg 10)
- Nietzsche and the question of vision – 5 ways, deployment of visual. Ex: visual metaphors, dream and illusion, blinding philosophical discourse, modernity and its project of enlightenment (pg 11)
- Nietzsche calls for a vision no longer enslaved by abyssal metaphysics or historical content (pg 12)
- Concepts reflecting problem with vision: perception, perspectivism, empiricism, reduction of vision to observation, transcendental narcissism, an act of judgment. Lacks mutual acknowledgement only causing alienation, reciprocity, and justice (pg 13)

See comments below (3 and 4)

- Derrida, Descartes, and Sartre, critical of vision, Heidegger was not against hegemony of vision: simply critical of the character of society's vision (pg 14)
- Living holocaust with vision (pg 16)
- Derrida attempts to show sound as more visionary than sight (pg 17)
- We must learn to see what is unseen. Broaden our visual perception to ignore the focused and concentrate on the peripheral (pg 17)

See comments below (5)

- Foucault call for a new way of seeing (pg 20)
- Modern vision is super vision – hegemony of power – self observation, self examination, self monitoring (pg 20)
- Early democracy was searching for community vision now has become for surveillance and self preservation (pg 21)
- We need a vision of mutuality and reciprocity moved by generosity and friendship (pg 21)
- Human freedom is "rooted in the human sensibility" (pg 22)
- Modernity is dominated by "dream-images" and commodified visual fetishes. Re enchanting the world which enlightenment and Marxism struggled to free from this illusion. Illusions which mask the violence of social reality (pg 23)
- How we see the world is responsible for its production and reproduction: changing how we see can change the world. (pg 23)
- Great quote of negative affects (cpu, media, tv...) vision has on society (pg 24)
- Society used to be judged by a literary vision (books) now television vision (pg 24)

- Modern vision is complicitous with war and domination (pg 25)

Comments:

1. Thought: Based on page – the more senses engaged by architecture the more complete the conceptualizations (pg 4)

2. Thought: To think of architecture from a different point of view. A blind Sensibility.

3. Thought: find quotes such as "justice is blind" (verify quote is correct)

4. Thought: One might argue that sight allows us to touch from a distance…but have we touched a star or the sun or moon?

5. Thought: Visual – Foe – Applied

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7. ***Poetics of Architecture*** by Anthony C. Antoniades,
Poetics of Architecture explores the fundamental theories of Modern and Postmodern design and attempts to reconcile all that is worthwhile in these two movements into a new inclusivist attitude toward architecture. Anthony C. Antoniades looks at the many intangible and tangible channels one can harness in creating architectural design. By opening up architecture to the full range of creative influences, he tries to help readers produce designs that are richer on spatial, sensual, spiritual, and environmental levels. Included among the examples in the volume are many distinguished projects and theories by a wide range of noted architects such as Asplund, Aalto, Utzon, Pikionis, Barragín, Pietilä, Predock, and Legorreta, who are latecomers to the attention of the media. (description edited from back cover of book)

- Rigourous design/contemplative – addressing a multitude of human needs p4
- Superficial architecture 'facadists' p4
- Inclusivists p4

See comments below (1, 2 and 3)

- Arbitrary, traditional and contemplative. – approach to architecture p4
- Contemporary architecture (facadists or shapemakers) rep. Anything goes approach. P5
- Concept: where one was born has an affect on their sensory perception or perception reception p98
- book: 18 years with architect lous i. Kahn 1975 p207
- material (tactility) p212
- to enrich our architecture 1958 p231
- the glory of art p236
- the cognition of the visible world became possible through the existence of lights p236(2)
- architecture is reality not virtual. It does not mimic environments, it provides environments. An environment is not simply visual, it involves all senses p238

See comments below (4).

- reima pietla – student of Alvar Aalto p247
- Book: (research relevance) Malraux, Andre "the voices of silence" St. Albans, eng: Paladin 1974 Book: (research relevance) Scott, Geoffrey, "the arhitecture of humanism/ New York: Norton 1974 p253
- Music and Architecture. Idea: perhaps provide Arch experience to blind p264
- Concept – Art vs. Science. Argument about whether architecture is one or other. I believe both but not too much one or other. Form vs. Utility p288
- Art difficult for masses to comprehend. But science or function is easily comprehended p288 (2)
- Theme of Modernism and deconstruction p65

See comments below (5).

Comments:
1. Thought: contempt Architecture is concerned with the presentation/being a tet. Something to be observed and read with obvious intention. The problem lies in the perception is concerned with the individual situate on the side walk. Forgotten here is architectures primary function. Shelter of humans...displaced...contemporary architects when expressing their projects seldom discuss the human inclusion and or experience. Any enjoyment or comfort provided by the built space can thus be seen as (elaborate def of happenstance, or coincidence, or accidental...the place work in bracket) contemporary architectures concern with beingseen as an art has taken the built form to far from the reason to build. 2 the function of a built form. Not to say form should follow function, but like chefs want their food to taste, smell and look great – they can't forget foods function is to nourish.

2. Definition: esotericity: attitude towards difference and sophistication

3. Thought: is it possible to provide an architectural experience without the inclusion of the ocular sense?

4. Thought: list architects that responded to multisensory experience, khan, aalto. See pg. 12 of eyes of skin notes. If no proof of listing sound, tactility, smell, taste (?), then explain how strong intention to place dweller within (dweller as nucleus) sensory architecture (verify) – Sullivan, wright, corbu, eliel saarinen, asplund, aalto, khan.

5. Thought: Contemporary arch oncerned with ocular, with being accepted as art, read as text, devoid of sight, devoid of client.

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8. ***Sensory Design*** by , Joy Monice Malnar; Frank Vodvarka

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- Design for moment using sound, touch, and odour treated equal to sight and emotion is equal to cognition where sensory response, sentiment and memory are design factors (pg ix)
- Architecture design conditions: Social need, convenience and economy (pg ix)
- Architecture is grounded on formal and symbolic aesthetics at the expense of sensory (pg x)
- Difficult to verify and codify sensory principles and response (pg x)
- Why do writers disconnect cognition from senses? I believe senses help if not are responsible for cognition (pg x)
- Cartesian view – root of sight privileging and disastrous design (Pruitt – Igoe) (pg x)
- Architecture is specialized system with set prescribed goals rather than a sensual social art responsive to real human desires and feelings (pg x)
- Vincent Scully – "stuff we are all consuming is less and less nourishing. It is not surprising that our architecture reflects that condition (pg x)

See comments below (1 and 2)

- Place – 3 descriptions: 1 – unique, 2 – understandable, 3 – sensed (all senses are required to sense place) Henry James (pg 1)

See comments below (3)

- 3 attitudes informing typology studies: - means of understanding morphological aspects as urban fabric, - way to discuss architecture in stylistic and cultural terms, - theoretical tool for production of architecture (pg 6)
- Topology is manifestation of "hegemony of the eye" (pg 10)
- Root of idea is (Greek) to see (pg 11)

See comments below (4)

- Greeks separated senses and mind. Senses had a place but low sight regarded sight as most highly evolved/developed sense (pg 11)

- Hegemony of the eye - In 15th century. With perspective drawing of plan section and elevation, invention of type, phonetic spelling, into 16th and 17th century. Social classifications identifiable with visual over scientific (including economics) identification (pg 11)
- Our unconscious is ignorant and not influenced by our past therefore it is universal (consider – for most part but not entirely)

See comments below (5)

- Malcolm Quantrill – Architecture is capable of connecting us to human consciousness, …historical continuity by myths, ideas, rituals, and events (pg 14)

See comments below (6)

- 3 questions of how space is recognized through senses (see page) (pg 18)
- Comprehension relies on data received through senses and perception or data after process and interpreted (pg 21)
- Humans experience 3 types of sensory responses: 1 – immediate physical response, 2 – conditioned response, 3 – time and space dependant memory response (pg 21)
- Sensory memory is selective and nuanced (pg 22)
- Preface architectural record 1991 October issue, "We appreciate a place not just by its impact on visual cortex but by sounds, feeling and smells (pg 23)
- Phenomenology – objective view of world directly linking world with sense experience (pg 24)

See comments below (7 and 8)

- "We are foremost sensory beings" (pg 25)
- Pearson believes society is undergoing paradigm shift from mechanistic to Holistic. Conception of reality (pg 25)
- Similar approaches – building biology in northern Europe, "eco-design" Christopher Alexander, "Healing environments" Carol Venolia North America (pg 25)
- Holl quote – building speaks through the silence of perceptual phenomena (pg 26)
- No work of art is without sensory output (pg 26)

See comments below (9)

- Sensory responds before cognition (pg 26)
- Dignity, pride, congeniality, feeling of ease – primary needs and should be considered for welfare of human beings (pg 27)
- A single objectified body…idealized and used for deriving proportions and scale – visually compelling buildings designed to be seen is the result (pg 30)
- Visually designed buildings cause a confusion of orientation (pg 31)
- Ciam – building elementary activity linked with the development of human life and need existed…architecture…satisfy the spiritual, intellectual, and material demands of contemporary life (pg 32)
- Buckminster Fuller quote – the international style "simplification" was but superficial. It peeled off yesterday's exterior embellishment and….put on…novelties of quasi-simplicity (pg 32)
- Pallasmaa quote "modernist design has housed the intellect and the eye, but it has left the body and the other senses as well as our memories and dreams, homeless" (pg 33)
- Frank Lloyd Wright quote – we must have as big a living room as possible with as much garden coming into it as we can afford (pg 35)
- Great quote showing that we do not reject structure, technology, program or vision…as inseparable parts of architecture (pg 39)
- Spatial constructs depend on perception and mediating intelligence. Consider (pg 41)
- Plato, Aristotle, Descartes…weighting and importance of senses (pg 41)
- Senses are our information seeking systems (pg 42)
- Response systems – visual system, auditory systems, taste-smell system, basic orienting system and haptic system. JJ Gibson (pg 42)
- Vision and auditory – active stimulus seeking, taste and smell active concept, orientation and haptic – most important to comprehend space, temp, pain, pressure, and kinesthesia (body sensation and muscle movement) (pg 42)

- Human beings are literally in contact with environment [always] (pg 42)
- Haptic perception is enhanced when combined with visual data (pg 42)

See comments below (10)

- Man's experience with architecture is mainly visual (good quote) (pg 42)
- Perceptual systems graph (great quick reference) (pg 43)
- Discusses Gestalt (pg 44)
- Empiricism – impression of 3rd dimension develops with experience (research empiricism) (pg 44)

See comments below (11)

- Dynamic self-distribution – need to find balance (pg 44)
- Bauhaus based on Gestalt (pg 45)
- Three major theories of visual perception: the classical theory (empiricism) – Philosopher John Stuart Mill and physicist Hermann Von Helmholte in the 19th century, the Gestalt theory, and Direct theories based on stimulus response phenomena (JJ Gibson in particular) (pg 46)
- We form mental constructs of the world that allow us to generalize and grasp through inference (pg 46)
- 3 aspects of empiricist approach are significant: 1 – the world has simultaneous structure (typical Patterns) so do our senses experiences and the associations that are formed in our perceptual memories, 2 – our movement through the world yields successive associations, 3 – frequent associations become momentary sensations are no longer discerned (pg 46)
- Stimulus / response. Images are shaped in an automatic process without unconscious interference (Gestalt) or learned associations (Empiricism) (pg 46)
- Gibson's description of the world (find original quote) no mention of other than visual characteristics until the end "...filled with things that have meaning." (pg 47)
- Perception determined and dependant on contribution of the observer (pg 47)
- Description of visual perception complicated (Gibson Theory) (pg 47)
- Kohler's approach uses the above 3 and gives example of when each is appropriate (pg 48)
- Schemata – learned stereo types (pg 49)
- Formation of spatial concepts to sensory impression – simply received to (senses) and then elaborated by the intellect (brain) (pg 49)
- Piaget not until 6 or 7 do we can measure, conceptual coordination of perspective, understanding of proportions of conceptual space (pg 50)
- Great quote explaining psychology of senses to brain relations (pg 50)
- Great intro to sense chapter (pg 51)
- Piaget's theory encompasses all theories (pg 51)
- Human perception is...processed sensation (pg 51)
- People do not respond directly to [the] real environment but respond to their mental representation or image of it (their environment) (pg 51)
- Cultural differences are critical in decided perceptual dominance. Great image on 51 depicting image, senses, brain, projection (pg 52)
- Structure of perception – sensation, perception, and mediating structures (pg 52)
- Great title for chapter on psychology of senses specifically sight. Idea that we become educated to perceive and then desensitized. "innate, learned, or learned elaborations of the innate." (pg 52)
- If we do not come to our senses soon, we will have forfeited the chance of constructing meaningful alternatives to pseudo-existence which passes for life in our current civilization of the image (pg 53)
- Alberti's grid screens out other senses than the visual (pg 53)
- North American design dissociates the senses (pg 53)
- Corollaries – What is implied here? (pg 53)
- Modalities of faculties of consciousness (see, smell, speak, hear...) (pg 54)
- Cultural difference in modalities and thinking and consciousness (pg 55)
- Phillipinos vs. Caucasions (pg 55)
- Habits of eating and dress determine culture so do our perception modes and habits (pg 55)

- Clear implication…not only is sensory response critical in design but the specific societal context needs to be addressed if it is to resonate with the dwellers (pg 55)
- Concerns when designing with senses for society especially different societies than your own (pg 55)
- Equation (great) related to cultural modifiers (pg 56)

See comments below (12)

- Matrix presentation of what can be done in a stair sensoraly (pg 57)
- Perceptual systems and immediating structures. Responses of people to their environment placed (pg 58)
- Sensation – mediated by experience and culture – shapes our special responses, where immediate response is emotional and deeper is cognition. Where emotion is chaotic, sporadic, unfocused, and cognition is when all senses are organized and comprehended (pg 59)

See comments below (13)

- Public realm is inauthentic – it cannot acknowledge the simultaneous presence of subject and object (pg 62)
- Individuals authenticate an environment through the process of dwelling (pg 62)
- Time house records interaction of dweller and form and plays it back to the dweller (pg 63)
- Spatial design concepts semiotics and environmental psychology (pg 63)

See comments below (14)

- Current ocular centric architecture convey blank alienation and contempt for humanity (pg 64)

See comments below (15, 16 and 17)

- Yawasaki (Pruitt-Igoe Architect) "Each building should enhance the lives of people who enter or see it." (pg 66)
- Building like Pruitt-Igoe were/are built in/near total ignorance of sensory attributes of space (pg 68)
- Rules of perception comp five categories: 1 – subject or activity, 2 – particular situation, 3 – social status, 4 – past experience, and 5 – culture (pg 70)
- Low or high context cultures…multi cultural cultured have low context (pg 71)
- China great example of culture with high context in touch with interior space creates feng shui – concern with good chi (Buddhism and Taoism) (pg 74)

See comments below (18)

- Genius Loci – "Sense of Place" (pg 75)
- Walter defines place as a location of experience – it evokes…memories, image, sentiment, and imagination…. (pg 75)
- Low context design would be universal design but high context design is more local or specific for one culture (pg 76)
- Should formal cognitive aspects of design take precedence over the sensory affective features (pg 76)
- To provide physical and psychic comfort for inhabitants (pg 77)
- Quantrill explains sensory aspects of environment as "Genius Loci" (pg 80)
- Generating an architecture of spatial consciousness (pg 80)
- Place evokes and organizes memories, images, sentiments and meanings – place made ever more obvious by sensory experience (pg 80)
- Greek play "Oedipus at Colonus" where Oedipus blinds himself and heads into exile (pg 83)
- Pleasance – A place of delight (pg 86)
- Discusses outdoor space and pleasance (pg 86)
- Claude-Henri Watelet "essay on gardens" – all is sensed, all is foreseen, all is reasoned and dictated by delicacy. Gardens take opportunities for design sensibility and taste – presence is denoted by "the Piquant Oddity" (pg 87)
- Sense (ability) or clear and comprehending sensibility helps form a clear mental image of space to facilitate a memorial experience for future recall (pg 99)

See comments below (19)

- JJ Gibson haptic perception – A sense of touch including: temperature, pain, pressure, kinesthesia encompassing body sense and muscle movement (pg 103)

See comments below (20)

- 30 degree tilt of head brings utrilles into most sense position (tilt cause by uneven ground) tea house (pg 104)
- experience of tea room and path to – vision, time, kinesthesia, touch, textures (pg 106)
- Lin's Vietnam war memorial. Haptic or texture experience to draw intimacy between soldier and observer respected (pg 106)
- Viewer becomes active part of architecture (pg 113)
- In this formulation people are just as important as brick and mortar (pg 114)
- Land marks for circulation, distance, orientation...(pg 116)
- Cognitive maps mark – proximity, distance, order and sequence (pg 116)
- Transitional elements (ie: thresholds) often insignificant in design of functional analysis but significant for spatial experience. (pg 119)
- 3 aspects of forming perceptual image: 1 – mental image is created by perceptual process (senses), 2 – incorporated by sequential experience, 3 – this phenomena exists outside time and as a measured event (pg 119)
- great image showing human connection to cube (wires, connection) (pg 122)
- Proxemics vs. Cartesian (pg 123)
- Cognitive maps are: proxemic rather than Cartesian, - dynamic as related to action and what can become in a given space (pg 123)
- Way finding (key for blind) (pg 124)
- Definition of way finding – cognitive process comprising cognitive mapping or info-generating ability allowing us to understand the world, 2 – a decision making ability allowing us to plan actions and structure these actions into a plan, 3 – decision executing ability transforming decisions into behavioural action (pg 124)
- Books concept of wayfinding: 4 ways to wayfind: 1 – active sensory perception (mostly kinesthetic and visual) 2 – formations of cognitive maps, 3 – identity, structure, and meaning resulting in image able, 4 – desirability of the objective of our motivation to employ spatial info at our disposal (pg 125)
- Odors lend character to place, making distinctive, easier to identify and remember (pg 129)
- What smell can do in space (pg 130)

See comments below (21)

- Blind tend to be sensitive to sound and prefer low to middle frequency (pg 131)
- What makes San Francisco incredible is total sensory experience, street noise, topography, smells, sights. (pg 131)
- To really know that San Fran. Is not Paris it must be sensed (pg 131)
- Odor may be most persuasive motivator in human behaviour (pg 132)
- Western philosophy undervalued our senses – especially smell (pg 132)
- We do not rationalize what we smell or taste – imagination is required (describing wines or perfumes) (pg 132)
- Info on psychology of smell (pg 132)
- Sensory stimulus – source and ambient (pg 133)

See comments below (22)

- Sensory response diminishes with age
- Olfactory episotc event (memory triggering) may invoke other sensory and even spatial dimension (pg 134)
- Smell – short term memory no good but long term is good (pg 134)
- Smells – simpler is better (pg 134)
- Ability to remember and differentiate smells is stronger than our visionary ability to recognize (for ex. A picture) (pg 134)
- Nostalgic survey of people born from 1920 to 1950 and 1960 to 1980 (pg 136)
- Scents used to rise productivity (pg 137)
- Smellscapes are non-continuous, fragmentary in space, and episodic time, limited by the height of our noses (pg 137)

See comments below (23)

- Microclimates – cities sensory experience of odor and sounds (pg 138)

- Sound links us to reality with protective and enriching (pg 138)
- Quiet space fosters independence (pg 138)
- Visual space is looked into whereas sound space we stand in the middle (pg 140)
- Most ancient buildings were designed not so much as to enclose space but to enshrine sound (pg 140)
- Lists medieval buildings and Scotland buildings (pg 140)
- Pocock "sound plays a crucial role in anticipation, experience and remembering of places – dynamic world of activity rather than artifact, sensation rather than reflection, temporal in nature (pg 140)
- Sound helps environment become place (pg 140)
- Noise vs. sound – research concentrates on house (pg 142)
- Origin of noise matters even if two or more events occur – we do not annoy ourselves (pg 142)
- Noise can interrupt performance levels. Music can effect mood and life (pg 142)
- Empirical soundscape research is limited (pg 142)
- Murray Schafer "The tuning of the world" critic of our aural existence (pg 142)

See comments below (24)

- Great explanation scratching the surface of what sound can bring to architecture (pg 142)
- Hi-fi to lo-fi (pg 142)
- Pin drop heard in all 14000 seats of Greek theater Epidaurus (pg 143)
- Viturvius bronze vessels (pg 143)
- Only as pelt of sound taught in architecture schools are sound reduction, isolation, and absorption (pg 144)
- Edward T. Hall " The hidden dimension – comments on the significance of active touch (pg 144)
- ...to build a kinesthetic repertoire of spatial experience (pg 144)
- Frank Lloyd Wright's imperial hotel – public to private hierarchy is marked with public with high texture and private to smooth (pg 145)
- Bauhaus taught texturality...(great example) (pg 145)
- Skin reads texture, weight, density and temperature. – connects us with time and tradition (pg 145)

See comments below (25)

- The extent of a fireplaces heat creates a warmth, intimacy and comfort (pg 145)
- Microspatial tasks of form, size and location are best suited to vision (but are the if our vision can be fooled can we not say that our vision cannot be trusted?) (pg 145)
- Sarah J. Rogers – The body is the locus for empirical knowledge it is through our senses (tactile, aural, visual, olfactory, and cognitive) we find experience and knowledge (pg 145)
- Table of sensory experience (art exhibit) (pg 145)
- Staircases are theatrical in nature (pg 147)

See comments below (26)

- Paragraph explaining who stairs provide something for all senses (pg 148)
- Spatial bubble (personal space) – sensory field - bubble increases or decreases depending on environment (friendly or violent) (pg 149)
- Proxemics divides into 3 spatial types: 1 – fixed feature, 2 – semi-fixed feature, 3 – formal (pg 150)
- Interpersonal ranges 1 – 0-18 inches physical immediacy, 2- 18-48 inches casualness, 3 – 4-12 feet informal business, 4 – 12-25 feet, public speaking (pg 150)
- Hellen Keller "Smell is a little the ear's inferior and touch is a great deal the eye's superior (pg 152)
- Eye most superficial, ear most arrogant, smell most voluptuous, taste most superstitious and fickle, touch most profound and philosophical (pg 152)
- Doors – (application of senses in relation) (pg 153)
- Scale (pg 154)
- Ornament (pg 158)
- Materials have construction qualities also sensory qualities (pg 159)
- Quality of matter are measured by eye, ear, nose, skin, tongue, skeleton and muscle (pg 159)
- Stephen Holl quote: Architecture engages intimacy of our sensory perceptions. The passage of time, light, shadow and transparency, colour texture, material and detail...the total perception of architectur[e] depends on material...as the taste of [food] depends on the flavours of authentic ingredients (pg 159)

See comments below (27)

- Electronic media has dissociated physical place and social place (pg 164)
- In spatial experience the ceiling is most important, walls next, and floor last (pg 165)

See comments below (28)

- G.T. Buswell "Eye Path" picture (pg 167)
- People who think different see different (pg 171)
- No ornament makes buildings memorable (pyramids at Giza) but lots of ornament provide continual visual experience even if chaotic at first (pg 172)
- Pawley's view "design is the arrangement and metamorphosis of objects to correspond to the ambiguous demands of human consciousness (pg 192)
- Turrel (dark room exhibit) "I'm interested in playing with the physical limits of how we perceive and our learned limits" (pg 208)

See comments below (29)

- Colour (pg 216)
- Description of Venice (pg 214)
- Hundertwasser quote: " man has three skins: His own, his clothing, and his dwelling (pg 227)
- Phenomenology – in relation to architecture – relates to the sensory and emotional qualities fundamental to design and the materials it makes use of, rather than a philosophical structure per se (pg 230)
- Failure of architectural formulism and functionalism to create vital, humane environments (pg 230)
- Sauzet quote "between the inhabitant and his dwelling there is a dialogue...relationship of...occupant to dwelling..[to] awaken[]...the deepest recollections of the self (pg 230)
- Sauzet's 4 arrangements of sensory aspects in design: 1 – dialectics between inside and out, 2 – hidden unity, 3 – framing of views, 4 – kinesthetic imprints (pg 230)
- Zen Buddhist monks of 17th and 18th centuries expressed a philosophy of existence (pg 230)
- Sauzet quote: goal of architect "facilit[ate] to anticipate sensations" (pg 231)
- Suazet organizes space and sensory experience at 1.6 meters (pg 231)
- Sauzet "replace man at the heart of conception, not in an abstract, but a concrete manner" (pg 231)
- Places are specific but their elements are general, we comprehend places through sensory data, our understanding of place is filtered [through our imagination and stored] in memory (pg 233)
- Mystery excites and develops sense of space (pg 233)
- Piaget's four space development model: period of emotion, sensory motor period, imaginal period, period of formal operations (p234).
- We absorb information from perception, conception and memory [and info is rationalized in our minds through our imagination] (p234).
- Explanation of memory but could also be used to explain senses discussion with brain (234).

See comments below (30)

- William's quote "To raise our consciousness (architects) to design with senses in direct way and to develop a repertoire in sensory media reinforcement to be sensitivity applied where appropriate (238).
- We need to revalue the nonvisual sense and learn a new vocabulary as well(239).
- Leitner's rooms created with moving sound (240).
- See page 29 of this booklet (244).
- Great chart showing vocabulary and relationship of senses (245).
- Perception always places something in counter view of another (figure and ground) (246).
- Description of Sensory Slider (247).

See comments below (31)

- Negative of sound system (271).
- Negative of smell system (272).
- Most applications of architecture directed to the sense "concentrate on ways to alleviate negative conditions rather than emphasize the positive (272).
- Haptic Concepts explained (273).

- Pallasmaa negative quote regarding two dimension representation of architecture and architecture of retinal eye (274).
- Frank Gehry uses CATIA (CAD) (274).
- Architecture in the digital age had become a celebration of surfaces (275).
- Problems with virtual reality. Cannot model gravity, density, weight, time, mass and distance (279).
- Designing haptically (280)
- Architects – Barragan uses colour and texture, Moore – objects in design environment, Scarpa elements of light, water and time itself (280).
- Sensory and mnemonic aspects of architecture (280).
- Architecture students sensory explanation of architecture as a s book or story (281).

Comments:

1. Thought: Visual privilege is one catalyst leading to fruits and vegetables with less nourishment.

2. Thought: Sensory design – in search of architecture that provides a sense of space similar to a successful writers description. The description would never be limited to visual – environmental issues would also be discussed

3. Thought: Example showing how vision can lead us astray – labyrinth or an M.C. Escher

4. Thought: I have an idea means "I see a thought". We should say I have a thought

5. Thought: Is vision the passage to conscious? Do blind people operate in subconscious? Or even in equivalence to sight privileged?

6. Thought: Architectue a repository for human experience, history/memory

7. Thought: has ocular-centricism desensitized society? If so has objectivity become subjectivity? (or vice versa)

8. Thought: Address the obvious question or comment that architecture is inherently sensory design – discuss schools/taught, published descriptions, architectural theory…

9. Thought: in response to question regarding architecture being inherently sensory designed…thought before "I had a thought"….architecture before Cartesian or perspective

10. Thought: is it just these two senses or any two senses when combined? (see above note)

11. Thought: like sight when designing with other senses it is impossible to provide rests or islands to cleanse palette

12. Thought: cultural modifiers – maybe chapter

13. Investigate: "the time house, or argument for an existential dwelling."

14. Thought: vision is not bad but vision as a result of designing for other senses, circulation, safety, or for practicality

15. What is semiotics:

16. What is Sanguine: Cheerful, confident

17. Thought: Show picture of apartment building that was blown up with title "let us not forget that architecture must always include humanity" (Pruitt-Igoe)

18. What is Taoism?

19. Thought: could approach thesis with "space must be legible…desensitized by exposure…"

20. Define: Utrilles

21. Thought: like painting sensory stimulus must not be faux – aroma therapy – false smells – artificial sounds…

22. Thought: in anti faux vain – natural and naked material is ideal visual also olfactory (wood unfinished)

23. Thought: smell pavilion would need to have swell circulation to place head above top of adjacent wall openings (head in petrie dish)

24. Thought: Chapter title "The tuning of Architecture"

25. Thought: chapter title: Shake Architecture's Hand

26. Thought: Stair is incredible sensory experience. Why can we uniformly change the tread depth?

27. Thought: chapter title for other art forms use of senses (preceding) "An architectural cookbook" or "Architectural ingredients" could also be title for appropriateness of senses

28. Thought: Above quote shows how vision skews our misrepresents reality – floor most important, walls next and ceiling last

29. Thought: Does every sense have a root? Ie: sight needs light therefore light is the root of sight. If so does each root have a counter root? Ie: light needs dark to provide significance also does each root have it's own natural (nature) source?

30. Thought: to say we should design with all the senses is easier said then done – but all we need to do is look at nature for inspiration.

31. Thought: with schools the most important aspect is the delivery of information. This delivery is mostly visual vehicle. For blind it would be sound.

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9. ***The Eyes of The Skin*** by Juhani Pallasmaa
The Eyes of the Skin has become a classic of architectural theory and consists of two extended essays. The first surveys the historical development of the ocular-centric paradigm in western culture since the Greeks, and its impact on the experience of the world and the nature of architecture. The second examines the role of the other senses in authentic architectural experiences, and points the way towards a multi-sensory architecture which facilitates a sense of belonging and integration. (book description from http://www.amazon.com/)

- This book takes Phenomenology and Gestalt theory and applies it to architectural theory. The underlying theme of the book is in response to Pallasmaa's opinion that architecture should discover new realms to be freed from "the implicit desire of the eye for control and power.
- The sense of ones self is strengthened by art and architecture and "allows us to engage… imagination and desire.
- Touch integrates our experience of the world with that of our selves – all sensory modalities can be expressed as an extension of our skin or touch.

- "The Eyes of the Skin" title is meant express the significance of the tactile sense but also intended to short circuit the dominance of visual sense.
- Architecture is not perceived as isolated retinal pictures (pg 12).
- Architecture incorporates and integrates physical and mental structures, giving our existential experience a strengthened coherence and significance. Definition of 'existential experience': existence / awareness / alive.
- "The eyes are more exact witnesses than the ears" Heraclitus Fragment 101a (quoted in Modernity and the Hegemony of Vision by David Michael Levin).
- There is a "poverty in the field of peripheral vision" (pg 13).
- A planed sensory overload will cause vision to take a secondary role in our environmental perception.
- "The hands want to see, the eyes want to touch" Johann Wolfgang von Goethe
- Western culture regards sight as the noblest of the senses (pg 15).
- Plato regarded sight as "humanity's gift" (pg 15)
- Eyes are the only self conscious organ as they can see themselves. (pg 16)
- Renaissance…."cosmic body" (pg 16)
- Essays "modernity and the hegemony of vision" (pg 16)
- "Epistemological privileging" (pg 16)

see comments below (1)

- Architecture does…human existence valid in space and time, expresses and relates man's being to the world (pg 16)
- Why sensory architecture/phenomenology architecture does…. (pg 17)
- David Michael Levin postulates the call for anti-ocular approach (pg 17)

see comments below (2)

- Hegemony of vision (pg 17)
- The inhumanity of todays architecture is consequence of neglecting the senses (pg 17)
- Thesis statement (pg 17)
- Friedrich Nietzche (pg 19)
- Book "Downcast Eyes – The Denigration of Vision in Twentieth Century French Thought" by Martin Jay. Tracing development of modern vision-centered culture. Also reviews anti-ocularism (pg 20)
- Space surpasses time in human consciousness (pg 20)
- Body is an object among objects – osmotic relation – interpenetrate and mutually define – Merleau-Ponty (pg 20)
- Perception is not sum of vision, tactile or audible but total whole being. Speak to all senses at once (pg 21)
- A temporalisation of space and a specialization of time (pg 21)
- Vision separates us from the world whereas the other senses unite us with it (pg 25)
- The task of art and architecture in Geneva is to reconstruct the experience of an undifferentiated interior world in which we are not mere spectators but to which we inseparably belong. (pg 25)
- Contribution of modern era "pictures" – unending rainfall of images. Italo Calvino – Conquest of world as picture. Heidegger (pg 21)
- Space and place has become commodity (pg 21)

see comments below (3)

- Ocular influence over production weakens capacity for empathy, compassion and participation (pg 22)
- Sight is only sense capable of detachment, nihilism, of being fooled (pg 22)
- We always confirm what we see with sense of touch (pg 23)
- Vision is only sense that can detach us from physical realm – only furthers irresponsible or irresponsive society. Superficial

see comments below (4)

- Reason for thesis choice (great quote) (pg 24)
- Edward T Hall "The Hidden Demension" (pg 24)
- Towards an intimate inclusive architecture "architecture that indulges with experience' (pg 24)
- Walter Jong "Orality and Literacy" – switch from oral to written, swung oral to sight – analysis cultural affect (pg 24)

- Hearing – dominance yield to sight – dominance. Situational thinking switch to abstract thinking (consider – does it have to be this way and does it make sense) (pg 24)

see comments below (5, 6 and 7)

- "retinal architecture and the loss of plasticity" a bird forms its nest by moving its body. Clay and mud architecture (pg 26)
- concept of sight, related to sense of touch, as tactile sense neglected in contemporary architecture (pg 26)
- Great quotes from Corbu, Alberti, Gropius, Nagy showing sights dominance over architecture "Architecture is the masterly, correct, and magnificent play of mass brought together in light" (Corbu) (pg 26-27)
- Statement: "until recently arch. Theory and criticism have been almost exclusively engaged with the mechanisms of vision and visual expression....gestalt laws of visual perception (pg 29)
- Opinion: "Ocular bias...than the past 30 years...adopted strategy of advertising (text)....detached depth and sincerely." (nicely put) (pg 30)

see comments below (8, and 9)

- Ocular centric architecture turns architecture into stage for eye (pg 31)

see comments below (10)

- Architecture domesticates space and time allowing us to inhabit (pg 32)
- Contemporary architecture posing as avant-garde is...engaged with architectural discourse and mapping possible territories of art than responding to existential questions (pg 32)

see comments below (11)

- The rejection of Alberti's window. Sites – Wright, Aalto, and Khan as architects who designed with kinesthetic and tactility (pg 34)
- Book – "The Opening of Vision: Nihilism and the Postmodern Situation" by David Michael Levin. Two modes of vision: 1 - esoteric gaze, 2 – aletheic gaze (pg 36)
- Some examples of how architecture is re: sensualizing space (pg 37)

see comments below (12)

- Ocular centric architecture does....reinforcing a sense of detachment and alienation (pg 39)
- ...sensory architecture in opposition of prevailing visual buildings (pg 39)
- Marleau-Ponty philosophy places human body at the center of experiential world (pg 40)
- Richard Kearney – through our body we choose the world and the world chooses us (pg 40)
- Relation of Body to Space or Domicile (pg 40)
- Kent C Bloomer and Charles W Moore (authors) "Body, Memory and Architecture" The role of the body and senses in architecture experience (pg 40)
- A walk through a forest excites all our senses (pg 41)

see comments below (13)

- Bachelard speaks of "The Polyphony of the Senses" (pg 41)
- Architectures depth or involvement with the senses (pg 41)
- James J Gibson regards the sense as seeking mechanisms and not simply passive receivers (pg 41)
- Steinerian philosophy – we utilize 12 senses (pg 42)
- George Berkeley related touch with sight (pg 42)
- Goeth's idea that a work of art must be "life enhancing" (pg 44)
- Bernard Benson – when experiencing art we imagine a genuine physical encounter "ideated sensations" most important are "tactile values" (pg 44)
- And architectural work is not experienced as a collection of isolated pictures, but in its fully embodied material and spiritual presence. (pg 44)
- "The Book of Tea" by Kakuzo Okakura – explains multi-sensory imagery evoked by tea ceremony (pg 45)
- Senses not only mediate info for judgment of intellect, they also ignite the imagination and of articulating sensory thought (pg 45)
- Paul Valery: "The painter takes his body with him" (pg 45)
- It is inconceivable that architecture could be purely cerebral without including the human body or the movement through space (pg 45)

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- Authors view: task of architecture is to make visible how the world touches us (pg 46)
- Eye is organ of distance and separation, touch is sense of nearness, intimacy and affection. The eye surveys, controls, and investigates. Touch approaches and caresses. (pg 46)
- Deep shadows and darkness are important – make depth and distance ambiguous – invites unconscious peripheral vision and tactile fantasy (pg 46)
- Spaces designed for vision require bright light. Homogenous bright light paralyses the imagination and weakens the experience of being and wipes away the sense of place. (pg 46)

see comments below (14)

- Light has turned to become a quantifying matter and the window has lost its significance as a mediator between two worlds (pg 47)
- Enormous plate windows deprive buildings of intimacy, shadow and atmosphere…Luis Barra Gan, master of secrecy, mystery and shadow in his architecture (pg 47)
- Darkness creates solidarity and strengthens the power of spoken work (py 49)
- A culture that seeks control of its citizens promotes voyeuristic…(read page) (pg 49)
- Sight isolates, sound incorporates, vision is directional, sound is omni-directional. Sight implies exteriority, sound interiority (pg 49)
- Sounds centers affecting human's cosmos, Walter Ong

see comments below (15)

- For oral cultures, the cosmos is an ongoing event with man at its center. Man is the umbilicus mundi; the navel of the world (pg 49)
- Contemporary world lose the sense of center of being or belonging (pg 49)
- Analogy showing centering affect of hearing. – being woken up by ambulance in city and thinking about other neighbours being disturbed (pg 50)
- Power of hearing to comprehend space. – Distant drip in cave lends a sense of its vastness (pg 50)
- Book "Experiencing Architecture" by Stein Eiler Rasmussen (pg 50)
- Every space has personality – intimacy; monumentality, invitation, rejection, hospitality and hostility (pg 50)
- What sound does in comparison or contradiction to sight (pg 50)
- Concept: Is based on claim that contemporary architecture is overly ocular centric but to further this hypothesis consider that the other senses are purposely eliminated. Acoustic design eliminates sound, lighting design eliminates shadows, mechanical design filters smells and drowns with fresh air, germ sensitivity prevents us from touching, taste never considered in architecture (investigate) (pg 51)
- Smell triggers nostalgia. Greatest memory holder (pg 54)
- Hands complicated organisms (pg 56)
- Rainer Maria Rilke – "Door handle is handshake of building" (pg 56)
- Chapter on touch (pg 56)
- Chapter on taste (pg 59)

see comments below (16)

- Quote: John Ruskin: "I should like to eat up this Verona touch by touch" (pg 59)
- Bachelard (author) (pg 62)
- Architecture of exterior vs. architecture of interior (pg 62)
- House conceived for pleasure of eye rather for dwelling (Eileen Gray) (pg 62)
- Tadao Ando desire for tension between functionality and uslessness, between a pursuit for function and pursuit away from function
- Objects surround my body and reflect action upon them (quote: Henri Bergson) Architecture is: approach, confront, related to the body, moved through, utilized, it: initiates, directs, organizes behavior and movement. (pg 63)
- Building is not the end, it: fights, articulates, structures, gives significance, relates, separates, unites, facilitates, and prohibits (pg 63)
- Architectural experiences are verbs rather than nouns: approach and confront vs. façade. Experience looking through a window vs. window as material (pg 63)
- Understand space as dynamic interactions and inter relations (pg 64)

- Fred Thompson used notions of spacing instead of space and timing instead time…concept of ma….unity of space, timing in Japanese architecture (pg 64)
- We behold, touch, listen and measure the world with our body…the experiential word is organized around our body (pg 64)
- Architecture of senses…sight – Corbu and Meyer, expressionists (muscular and haptic) Mendelsohn, Hans, Scharoun, and suppression of sight. Recognition of human condition (fully) Wright, Aalto. Sensory Experience: Glenn Murcutt, Steven Holl, Peter Zuma
- Task of Architecture (pg 71)
- Wrights task of architecture (pg 72)

Comments:

1. What does Epistemological privileging mean? : Nature of knowledge, its foundation and extend of

2. What does Hegemony of vision mean?: Predominant influence over others

3. What does a narcissistic and nihilistic mean: self pre occupation, lack of empathy, unconscious self-esteem deficit, extreme skepticism, denying all existence

4. What does Superficial mean in this context: external or outward, concerned only with appearance.

5. Questions: (rhetorical) why do we find theatres, auditoriums, concert halls…and museums so exciting? Because they contrast typical architecture. They excite a sense other than sight.

6. Statement: The ego-conscious contemporary architecture, by kneeling to ocular-criteria, displaced humanity to the side walk. Designing with other senses would reunite humans with architecture.

7. What does tacit mean: implied but not spoken

8. What does Temporality mean: Temporal: of time secular rather than spiritual, of the temples of the head

9. What does Secular mean: worldly rather than sacred, not connected to religion or church

10. Thought: Idea that office buildings (and others) high reflective glass to appease visual characteristic, betrayal at night (consider relevance)

11. What is meant by "albertian window"? : grided plane in front of object to transcribe perfect proportion and perspective

12. Thought: sensual architecture: include hapticity. Back in architectures function

13. What does Polyphony mean: Music arranged to fuse different parts, voices, or instruments

14. What is Charoscurd (Art):

15. What does Cosmos mean in this context:

16. Thought: can we taste architecture? What does it mean to taste? To consume? To chew? To suggest architecture can be consumed is to say it is a commodity. Is it?

10. ***The Opening of Vision: Nihilism and the Postmodern Situation*** by David Michael Levin

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- A vision driven society sees differences in humanity and isolates one from another – the natzi creed was based on visual criteria to determine Arion race (pg 4)

See comments below (1)

- Nihilism (pg 5)

See comments below (2)

- Horkheimer, Adorno, Marcuse, Habermas and Foucault, all theorized on vision (pg6)
- Concept of vision ontology of being (pg 6)

See comments below (3, 4, 5, and 6)

- Dimensionality – each sense is a dimension. Being is linked with dimensionality (Merleau-Ponty concept)[don't quote – see page] (pg 9)
- Gestalt? (pg 9)

See comments below (7)

- Merleau-Ponty critical reflection on vision (pg 12)
- Ego-logical subject (pg 12)
- This book is base on seven principles: 1. critical review of visions perceptual capacity, 2. phenomenological psychology. Questions development character of ego-logical subject. [ego, self]; 3. postmodern interpretation of modernity [nihilism]; 4. discourse on metaphysical history of being; 5. character of our lives and body politic; 6. philosophical anthropology; 7. dimensionality of existence (religion)
- History has yielded a fragmented society. Today's self is: empty, alone, insecure (pg 15)
- Nihilism negates being (pg 15)
- Vision cultivates an individualistic society (pg 16)
- Authors call for new humanity (pg 18)
- We have failed in our caring. Caring has not failed us (pg 18)
- Self absorption (pg 19)

See comments below (8)

- Heidegger's humanism holds man as center of world. But why vision and not the mind? (pg 21)
- Experience – architecture. True experience values more than visual (visual can be contrived/false)
- Questions of being can not be considered until ego is displaced [ego vision] (pg 24)
- Standpoints and viewpoints (relativism) (pg 26)

See comments below (9)

- Experience explained (pg 34)
- History dominated by sight (pg 35)
- Heidegger believed: our endowment consists in existence (pg 36)
- We do not know what being means. Most of us live, most of the time, within a world experiences in terms of a vague, average understanding… (pg 39)

See comments below (10)

- "…the organs of our perception." (pg 44)
- mind as pure consciousness (pg 45)
- Bodies of understanding, stage 1 to 5 (pg 47)

See comments below (11)

- The stages progress from 1 being least mature or juvenile to 5 most mature (pg 48)

See comments below (12)

- Concept of what a person who has seen carries over someone who has never (baggage) (pg 56)
- What is seen is affected by ones history. In order to truly see an object one must forget the objects name, ever seeing it or one like it and any memory of interaction. (expand to include all senses) concept deals with inherent/baggage message that affects what we see. (pg 60)

- Marleau-Ponty "visual experience…pushes objectification further than tactile experience." (pg 65)
- Vision is the most reifying of all our perceptual modalities, as the paradigm for knowledge. (Consider/investigate and understand before using) (pg 65)

See comments below (13 and 14)

- That which is, is no longer that which is seen… (pg 67)
- Horizons of our senses. Spheres which are the lengths a sense can perceive the sphere of sight is greater than the sphere of touch (pg 71)

See comments below (15)

- Protagoras "the human being is the measure of all things". Corbu "human body scale for architecture" (verify). I believe architecture should engage the mind. (pg 83)
- What eyes can do that other perceptive organs can't (positive) (pg 97)
- Quote dealing with visual experience is superficial (pg 97)
- What we see today…war, wastelands, destruction and violence…makes visible the historic character of our vision (pg 98)

See comments below (16)

- Greek antiquity believe theoretical life is: way of beholder, who looks upon pure…, involves pure relationship to outward appearances…to bring presence of gods to shine forth (pg 100)
- Latin world believed Greek attitude toward vision sundered and compartmentalized (pg 100)
- Vision must not be used for mastery and domination or as an instrument of will = nihilism (pg 106)
- Erwin Straus – essentially "Gnostic" character of vision it is analytical, divisive and particular but it should be "pathic" which would unify and cause appreciation of the field (pg 106)
- The rise of subjectivity in society is linked with emerging of perspective painting (pg 117)
- Vision as theoretical instrument must reintegrate vision of wholeness, feeling, and life (pg 118)
- Vision supports domination of ontology and causes us to take part in production of human suffering (pg 120)
- Television and photography and art pictures affect on our vision. Photography: Turns the world into a series of unrelated, free standing particles and history. A set of anecdotes. Camera makes reality, atomic, manageable, and opaque (pg 121)
- Awesome questions related to television and sight. Could be used to reflect current negative affects on vision from vision. (pg 125)

See comments below (17)

- Narcissistic disorder (society) (pg 133)

See comments below (18)

- Quote states: What we all really want is to feel effective (or be a part of) (pg 144)
- Commodification as result of capitalism (radical) quote (pg 149)

See comments below (19)

- "…man is nothing, he lives only by impacts from the outer world…we become nothing when we are possessed by the image.." (pg 150)
- has reality become entirely representational? (pg 151)
- "being" will be given to man when he has overcome himself as subject…" (pg 188)
- our minds continually fabricate an anxious, usually self-preoccupied veil which conceals the world. (pg 193)
- [architecture] seen and the seeing of it are only two names for one invisible fact which, properly named, is the datum, the phenomenon, or the experience (pg 195)
- "the rise of the fundamental dialectical antithesis" (pg 98)
- consciousness develops out of our unconscious. Thinking existed long before man was able to say "I am conscious of thinking". (pg 202)
- "There is a constitutive distance between seeing and what is seen". The distance causes disconnection (pg 210)
- Freud concept of ego (pg 218)

See comments below (20)

- Learning to see without ignorance (pg 221)

See comments below (21 and 22)

- Buddhist teach ayatanas suggesting that we attend to the feeling – tone aspect of experience, which we often neglect with our fascination with the objective field. (pg 233)

See comments below (23)

- Buddhists believe subject and object will forever be separate. (verify) But be providing full sensory experience and engaging the subjects brain. Does it not connect object (arch) to subject (man)? (pg 250)
- "In what the senses of sight, hearing, and touch convey, in the sensation of colour, sound, roughness, and hardness, things move us bodily, in the literal meaning of the word. The thing is the aistheton. (pg 251)
- Book argues that "crying is the root of human vision." Suggesting that sight is a compassionate sense, I argue that (???) [find word that best rep. what you are trying to say ex: disconnection, distance, gratification, consumption…] is the root of sight. Crying conveys pain felt in the brain. (pg 252)
- "each organ of sense explore objects in their own way" (pg 253)

See comments below (24)

- Touch is our way finding sense. It proves false from real, hot from cold, heavy from light,…it is the fact driven sense (pg 254)
- Modern era experiences the world as a picture (tv) (pg 257)
- We are responsible for the development of our responsibility (pg 259)

See comments below (25, 26 and 27)

- An infant vision (pg 275)

See comments below (28)

- Quote: "Its great desire would be the resurrection of the flesh, a desire utterly foreign to idealism…" (pg 295)
- Start of chapter seem relevant but unclear (pg 295)
- Page deals with body experiences (pg 308)
- To the extent that…I extend my corporal scheme, so that I extend. Acquire a better experience of my consciousness (pg 310)
- Society develops a human being (pg 316)
- In order to change the ills of society we must develop a new way of seeing (pg 319)
- "self" and "society" are connected/not separate (pg 319)
- call for a new type of community/social fabric/society (pg 320)

See comments below (29 and 30)

- Merleau-Ponty "The intertwining of my life with the visible things, by the intersection of my perceptual field with that of the others." (pg 322)
- Merleau-Ponty – The chiasm, reversibility is the idea that every perception is doubled with a counter perception. (pg 322)
- We are born with a moral sense. (pg 323)

See comments below (31)

- Society's moral self is disembedded and disembodied (pg 334)

See comments below (32)

- "Deeper stratum" What does this mean? (pg 339)
- …Present historical state a time of crisis and danger…If we are to survive we must find life-affirming resources (being cultivating a sense of community vs. difference) To reveal capabilities we never thought possible. Not suggest that architecture can solve society's problems but I have long thought that architecture of today has begun to exclude the experience of dweller beyond the visual [immature – difference. Alienation/nihilism] (pg 339)
- intention is to expand architectural experience boundaries to a greater depth potential (pg 371)
- Heidegger concept of post modernism. Betweeness, nihilism and pathologies in relation to "being" (pg 384)
- Vision has degenerated into mere optics (pg 396)
- Foucalt's – "Death of Man" refers to exhaustion of the old dream of "humanism" – the vision of man which brought the modern world into being, but the new world is rapidly bringing to an end (pg 404)

See comments below (33, 34 and 35)

- Death of God. Born the self mirror ex. Do not see God or his image just ourselves (pg 407)
- "In care take the whole as the whole?" (pg 414)

- Calls for us (society) to care for the whole and to give up. Subject and object concerns (pg 415)

See comments below (36)

- Assertoric gaze vs. alethic gaze OR ego-logical vs. being (see page) (pg 440)
- The Sioux have a saying "the white man sees so little, he must see with only one eye." Indians live in a world of symbols and images where spiritual and common place are one.... (pg 445)

See comments below (37)

- Call for new vision – see beyond the "need" to a just and humane social life (pg 447)
- Presence (pg 456)
- To see aletheically we must learn to see without anxieties and tensions (pg 463)

See comments below (38 and 39)

- Dark retreat – 7 nights in dark (pg 474)
- Abhidharma – Analysis of our psychophysical development. In particular, it analyzes the emergence of perception as governed by the ego (pg 476)
- Nothing is inherently permanent of essentially substantial: All things that come to appearance in our world are ultimately 'empty' or 'void' or 'worthless' (visually) unless society grants them worth. All forms are transitory, phenomenal, insubstantial and/or empty. (pg 476)
- Authors experience explained of 7 nights in dark (pg 477)
- Tibetans concept of Rigpa (the simple presence of total awareness) is easiest achieved in total darkness (pg 480)

Comments:

1. Thought: Vision drives oppression

2. Thought: Prove sight causes nihilism then explain why nihilism is no good. Use quote from pg. 5

3. What does Abstruse mean: Hard to understand, Esoteric

4. What does Metaphysics mean: First principles ontology, cosmology, epistemology

5. What does Epistemology mean: Investigate origin, nature, methods and limits of knowledge

6. What does Ontological mean: Nature of existence or being as such

7. What does Nihilism mean: Philosophy – an extreme form of skepticism that denies all existence, complete denial of all established authority and institutions

8. Thought: Architecture is a caricature of what it could be

9. Thought: Does vision sensed architecture create anxiety or insecurity

10. Thought: is the reading and ingestion of environment a juvenile interaction of mind and architecture? The involvement of all senses (total body to mind experience) a mature more fulfilling interaction of body to architecture (pg 44)

11. Thought: rather than approach the thesis from a reaction to modern sight privileging, take it from a search "for deeper architectural experience which incases the brain totally with all the senses."

12. Thought: 5 bodies of understanding could be used to explain why appeasing of ocular sense only is juvenile

13. Define Reifying

14. Define Paradigm

15. Thought: name chapter on how sight can be a lie by "rainbow, horizon, moon and stars". Do they exist because we can see them?

16. Thought: Can the blind observe? Without an interpreter?

17. Thought: Is modern architecture too concerned with impotence and omnipotence? Investigate and understand before using (pg 130)

18. Thought: is society becoming nihilistic because it is alienated by visual world and deprived of total experience or connection to humanity/society? (pg 144)

19. Thought: What is epidemiology and does it relate to the thesis?

20. Thought: Superficial or egotistical

21. Thought: (consider and explore) Why can we/do we tolerate someone looking at our spouse but touching is out o f the question? (inherent different in senses) (pg 223)

22. Thought: Example to express distancing of sight. You can see a star using a telescope but you will never be at the star.

23. Thought: the brain learns and perceives with sight, sound, and touch ("because" syndrome)

24. Thought: is there a place where all five of our senses pivot? (pg 253)

25. Thought: Given modern condition can we ever rely on vision to be reliable receptor of info (experience)?

26. Thought: If all people had a sense of belonging, became a part of society, the world would be a better place. (ideological – consider and reword) to counter alienation, disconnection…

27. Thought: We must see the world with compassion (ideological) but is it still possible to "see" with compassion?

28. Thought: Modern vision causes us to see a group of people standing alone and in conflict with one another. Rather than comprising a relationship.

29. Thought: Sight privileged enjoy, through windows, a connection to nature. How can this experience be delivered to the blind? Is it possible to provide a more fulfilling experience by not relying on ease of sight?

30. Thought: What we need is a society with a raised consciousness of their responsibility as a citizen, a raised consciousness of their consciousness.

31. Thought: it is cultivated by our up bringing…

32. Thought: Difference is death of community acceptance counters difference but acceptance requires maturity. Vision is the best sense to perceive the counter or different (not a good point)

33. Thought: If the problem of society is consumption and ego-centricsm does the inclusion of the other senses just help to cultivate or influence consumption and ego?

34. Thought: What is the problem with sight? It is the sense that has helped us to survive (find food, shelter, escape from harm/predator) – the problem lies in the disconnection, distancing and falsifying possibilities – When we think meat is bad, what's the first thing we do? Smell it. Only when something is extremely hot can we see that it is hot, otherwise we must touch or smell it…

35. Thought: Fundamental issue with modern architecture, is built form is subject where as the built form should be object and user subject. Churches had Christ as subject.

36. Thought: Developed – one reason vision should be abandoned is due to its ability to see truth…too easily fooled

37. Thought: In order to explain disconnecting condition of vision discuss "tin of biscuits" and people involved to produce and deliver and sell to us but yet we don't see them

38. What does Aletheically mean?

39. Thought: Being/experience is at the brains deep understanding of engagement and draws a capacity for a connection of mind to architecture. The problem with vision is this aspect deals with falsification or optical virtualism – fools eye…other senses present only way to achieve connection without self conscious/doubt/mistrust…

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11. ***The Poetics of Space*** by Gaston Bachelard - translated from French by Maria Jolas

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- Inhabited space transcends geometrical space (pg vii)
- An era suffused by tv and video games, fluorescent lighting and plastic floors, air conditioning systems and too small closets (pg ix)
- French philosophers do not differentiate between the words soul and mind (pg xx)
- Phenomenology – resonance – reverberation (pg xiii)
- What our imagination is possible of depends on our historical experience (pg xxiv)
- Van Den Berg "we are continually living a solution of problems that reflection can not hope to solve" (pg xxviii)

See comments below (1)

- Imagination is faculty of comprehension (pg xxxiv)
- Two functions of human psych – real and unreal must cooperate for imagination to help comprehension (pg xxxv)
- Imagination augments value of reality (pg 3)
- We must go beyond the problems description to obtain primary values of inhabitation (pg 4)
- Primary function of house: to protect/shelter dreamer/day dreamer

See comments below (2)

- Psychologists question patients about childhood house, asks questions regarding sensory exp. Other than visual, smells, textures,….warmth

See comments below (3, 4, 5 and 6)

- Images have both a history and a prehistory (pg 33)

See comments below (7)

- Room and house are psychological diagrams which can be "read" (pg 38)
- Houses long demolished can be replaced in our minds (pg 56)
- Engagement of mind is important for imagination and memory, why some physical spaces are easily forgotten and some dream of dreamt spaces seem so real to us (pg 59)
- Imagination, memory and perception. Images created through interaction of real (space) and unreal (imagination, memory, and perception). For space to be living it must allow a certain element of unreality. All values must remain vulnerable if not the space is dead (simply facilitation of use) (pg 59)

See comments below (8)
- Psychology of architecture ex: door knob and door opening... (pg 73)

See comments below (9)
- Author describes example to explain difference between image and metaphor. Why relate or search for difference? What does Metaphor mean in this occasion? Metaphor for author means fabricated image or ephemeral expression.

See comments below (10, 11, 12 and 13)
- To enter the superlative of highest quality, we must leave the positive for the imaginary (pg 89)

See comments below (14, 15 and 16)
- Nests are formed around the birds from inside out. Form commanded by dweller inside. (pg 101)

See comments below (17)
- Phenomenologists: Venture to explain and or understand the experiential character of things. They are concerned not with the defining edges or with the defined space by the edges. They are concerned with the human experience within. They do not concern themselves with the reason for door or the characteristics of the door but with the fact that entering a door and exiting the door are not symmetrical images or actions

See comments below (18)
- Intimacy – direct psychology (pg 136)
- Corners provide solitude and silence (pg 137)
- Great quote about philosophers which could be changed to architects. "must [architects] alone be condemned by [their] peers always to live on the ground floor?" (pg 147)
- Representation is dominated by the imagination in the world of miniatures (pg 150)

See comments below (19 and 20)
- Sensory psychology – sensory thresholds (pt 174)

See comments below (21)
- Discusses silence (pg 174-180)
- Is being found with silence or does silence mean non-being (pg 180)

See comments below (22 and 23)
- Pride of seeing is at the core of sight privileged consciousness (pg 190)
- Time and space are dominated by image (pg 200)

See comments below (24)
- Too much space smothers us much more than if there were not enough (pg 221)
- Vision will never be able to tell us what is behind us, other senses would (pg 231)

See comments below (25)

Comments:

1. Thought: Painters recreate or create a 2 dimensional representation of reality, architecture is reality

2. Thought: another angle – why do we have richer experience in our house? Is it because we have a longer exposure and opportunity to have other than visual experiences?

3. Thought: Intent to engage dwellers mind to provide experience. To draw dweller into consciousness and away from unconscious or subconscious exp.

4. Thought: important to note that visual in architecture is still far most important but simply too much so.

5. Thought: No intimacy can be gained with strictly visual interaction. Intimacy is attractive vs. repellent or disconnecting, smell: raisins drying on wicker basket

6. Thought: is it possible to recreate cottage hut in downtown condo?

7. Thought: example showing tactility importance over sight: at night we do not feel we are upside down but from space the earth visually has an up and down side

8. Thought: beyond construction – beyond inhabited – to .....(intimacy) engaged

9. Thought: brains exhaustion – eyes exhausted by colour see opposing colour. – by the end of scar face the f-word does not get the same reaction in your brain (bad ex but root is good, revise before using)

10. Thought: To unite exterior realities with intimate reality

11. Thought: Perhaps focus research on nostalgia (Geoff Carr Psychologist Professor at Cape Breton University) and how if called upon too often our mind redefines/dilutes the association

12. Thought: Another example that vision is an incomplete experience where what we perceive is affected by our history – email explaining (dyslexic example) mixed up letter in words of paragraph as long as 1st and last letter of each word are correct can be read with little error

13. Thought: to express sensory possibilities is it possible to express a perfect box visually, olfactory...

14. Thought: does a blind man require area of refuge? If so, is it required more than visually capable?

15. Thought: Sound – birds singing

16. Thought: D7 – egg, nest, house....

17. Define Precarious: unstable, insecure

18. Thought: Through experience we lose our ability for a naïve view of the world

19. Thought: to express problem with vision: When we think of an apple we think of an apple of perfection in roundness and colour. We may even picture the perfect taste or smell, but how often do we actually find a perfect apple free of brown spots, or bruises and the perfect stem? Compound the issue with artificial colouring...to attempt perfection

20. Thought: the blind world is free. Free of visual metaphor or one might argue metaphor, free of visual precedence, free of Cartesian way of thinking and planning, free to pursue a body or mind scaled architecture

21. Thought: Research sensory psychology – especially in relation to sensory thresholds

22. Thought: why when we are deep in thought, composing or frustrated do we close our eyes or firmly place thumb and forefinger of our dominant hand to our eyes?

23. Thought: Research/read Max Picard's "the world of Silence"

24. Thought: do we need sight to comprehend "here and there"?

25. Thought: In search of round experience of architecture (pg 234)

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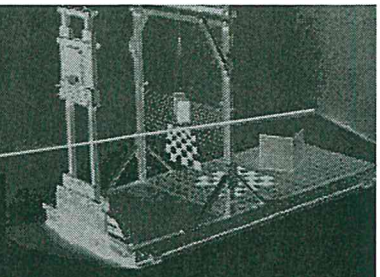

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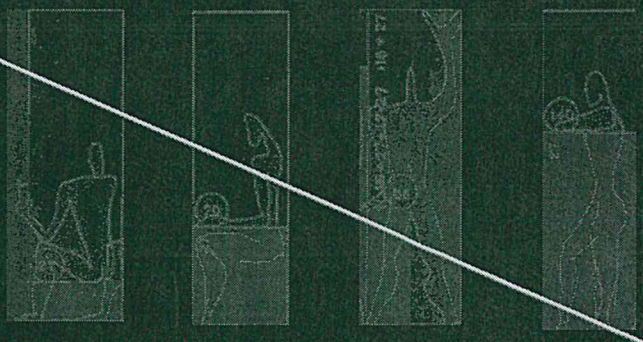

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A Blind Sensibility –
A Non Visual Experience of Architecture

List of Illustrations

Images used in Appendix A section are sourced below each image.

Glossary of Terms

Note: if no source is given for a word or term the definition given represents what is implied by the author when used.

Auralfactory: pertaining to the sense of hearing or hearing system.

Being: Total and complete cognition of one's self in *space.*

Compendium: a list or collection of information for future resource.

Empirical: depending upon experience or observation alone, without using scientific method or theory.[31]

Entasis: a slight convexity given to a column or tower, as to correct an optical illusion.[32]

Haptic: One of humanity's sensory systems discussed in Chapter 6. *Haptic*s consists of tactility (texture), kinesthesia (muscular/movement), plasticity (spatial comprehension) and environmental gage (temperature and humidity).

Macular degeneration: degeneration of the central portion of the retina, resulting in a loss of sharp vision.[33]

Mind and Body Connection: When architecture provides comfort for the body and stimulus (*stimuli)* for the brain of an inhabitant.

Naos: the principal enclosed chamber of a classical temple.[34]

Olfactory: pertaining to the sense of smell or smell system.

Pathic: Passive or submissive.

Pinna: The outer projecting portion of the ear.[35]

Physiognomy: Also called anthroposcopy, representing the art of determining character or personal characteristics from the form or features of the body, esp. of the face.[36]

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[31] ibid
[32] Definition from www.Dictionary.com .
[33] Definition from The American Heritage Science Dictionary
[34] ibid
[35] ibid
[36] Definition from www.dictionary.com.

Place: A memorable *space* with unique qualities or provides a positive experience. Must be legible for inhabitant's brain to comprehend and unique enough for the spatial composition to be recalled later.

Plinth The immediate visible portion of a foundation if pronounced. Similar to a *stylobate* but without the requirement for columns.

Qualia: The way things seem to us opposed to the way things are actually.

Retinitis Pigmentosa: Retinitis pigmentosa causes the degeneration of photoreceptor cells in the retina. Photoreceptor cells capture and process light helping us to see. As these cells degenerate and die, patients experience progressive vision loss.[37]

Rigpa: Buddhist concept representing the presence of total awareness.

Rote memory: routine; a fixed, habitual, or mechanical course of procedure: *the rote of daily living.*[38]

Schema: an underlying organizational pattern or structure; conceptual framework.[39]

Smellscapes: like a landscape it is made up of a variety of materials or items, in this case odours and smells, collected or grouped together providing an over all impression.

Soundscape: like a landscape it is made up of a variety of materials or items, in this case sounds, collected or grouped together providing an over all impression.

Space: an area formed by humanity composed of Cartesian planes. Either with 1 floor, 1 ceiling and 4 walls or in combination of less or more. Space is not necessarily internal and the planes can also be built of any material organic or not.

Stimuli: Something that excites one of the sensory systems. In the context of the thesis, the *stimuli* must be comprehended by one of humanity's sensory systems.

Stylobate: The immediate foundation of a row of classical columns. Also called *stereobate*.[40]

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[37] Definition from www.blindness.org.
[38] ibid
[39] Definition from www.Dictionary.com .
[40] ibid