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Chapter 6

Technical Report

6.1 Introduction

The Agora is largely subterranean, implying certain structural considerations and applications. This chapter introduces the structural processes and solutions as well as non structural elements that will enhance the use and experience of the Agora.

6.2 Demolition and Excavation

As this space will not be erected within an existing building, no structure or part thereof will be demolished. However, most of the Agora will be located below the ground floor level, which will subsequently be excavated and with it the removal of some surface material – mainly concrete cast in situ. The existing ramp to the original entrance of the Library will be demolished, as well as a part of the plinth around the arch ruins of the Old Chemistry Building.

There are a number of existing trees located in the area that will be excavated. Mature, large trees can be moved and replanted (http://www.treemoving.com/index.htm) (Hall, 2002), however the cost implications of this, as well as the operations and time required (two months to prepare the tree before excavating it can start), needs to be carefully considered.

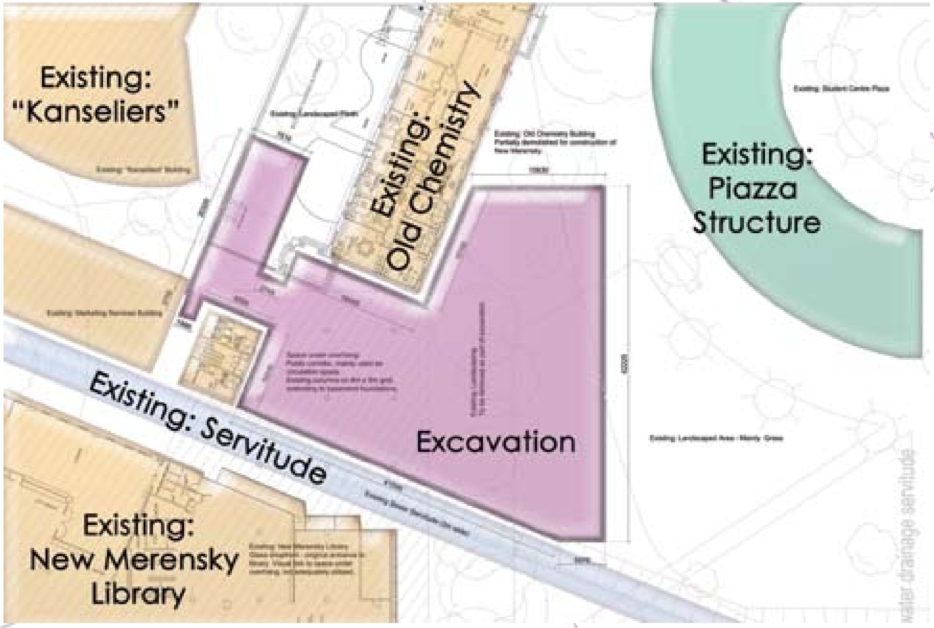

Figure 6.1: Plan: Site Excavation

6.3 Accommodation Schedule

The Agora will function as a public space, but needs to be subdivided into categories of use to determine the accurate design population. Three definite areas can be distinguished: the Open Lecture Auditorium, the supporting Meeting rooms and the Food outlet.

6.3.1 Design Population

Area	Occupation Class		Design Population (SABS 0400-1990)	Area	Total
Lecture Hall	Theatre (Peak usage)	A2	1 person / 1m² or seat	90 seats 30 m² open space	120 people
Meeting Rooms	Educational Facilities (lecture/study)	A3	1 person / 5m²	600m²	120 people
Food outlet	Public Meeting Area (eat/drink)	A1	1 person / 1m² or seat	48 seats 123m²	50 people

(See SABS 0400-1990 pg 34&35)

Table 6.1: Design Population

6.3.2 Sanitary Requirements

[SABS 0400-1990 pg 124]

- Lecture Hall (subject to peak use) – Table 7 SABS 0400-1990 pg 127
- Meeting Rooms – Table 6 SABS 0400-1990 pg 126
- Food outlet – Table 6 SABS 0400-1990 pg 126

Area	Population	Gents			Ladies	
		WC	*HWB*	*Urinals*	*WC*	*HWB*
Lecture Hall	120	1	1	3	2	1
Meeting Rooms	120	3	5	6	9	5
Food outlet	50	2	3	3	5	3
Total	290	6	9	12	16	9

Table 6.2: Minimum WC Requirements

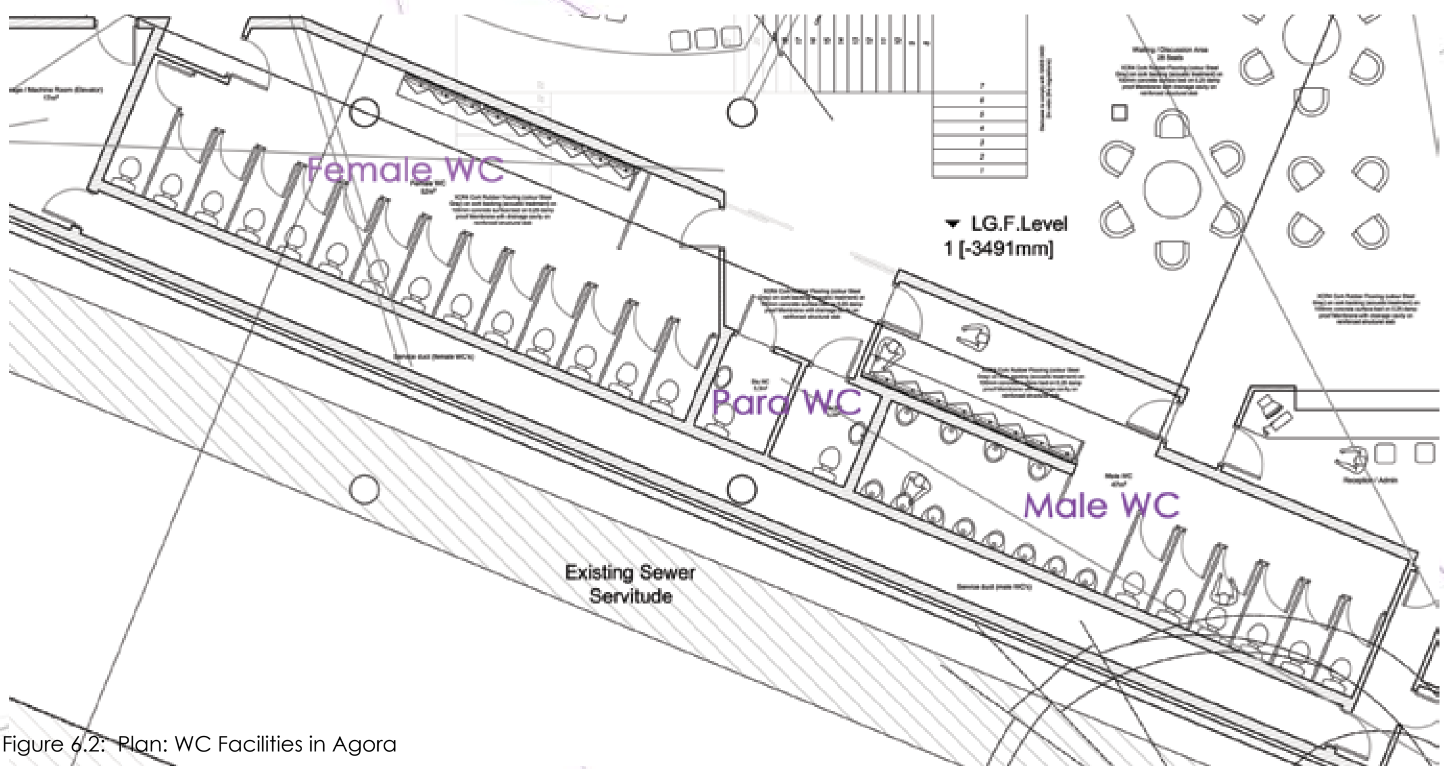

Figure 6.2: Plan: WC Facilities in Agora

6.3.3 Adjustments for Disabled users

[SABS 0400-1990 pg 153]

The above-mentioned regulations indicate that a building with more than 20 WC's (collectively) should provide 2 cubicles specified for use by wheelchair-bound users. However the same regulations state that 2 cubicles (for normal use) can be replaced by one cubicle for disabled use. Adjusting the above table as follows:

Minimum Requirements	Population	Gents			Ladies	
		WC	*HWB*	*Urinals*	*WC*	*HWB*
Total	290	4	8	12	14	8
Disabled WC	*Unisex	*1	*1		*1	*1

Table 6.3: Adjustment to WC Requirements to include facilities for disabled Users

*Please note that this is the minimum requirements and The Agora will provide the following:

Actual Provision AGORA	Population	Gents			Ladies	
		WC	*HWB*	*Urinals*	*WC*	*HWB*
Total	290	6	8	12	14	9
Disabled WC	*Unisex	*1	*1		*1	*1

Table 6.4: Agora WC Provision

6.4 Structure

Due to the Agora being located underground the structure enveloping the space needs to be engineered to ensure habitability of the space. The structure of the space consists of two distinct parts, the subterranean part as well as the web structure (forming the ceiling as well as some "walls"). The web defines the project and binds the space as a whole.

6.4.1 Subterranean Structure

The Agora's structure consists of a concrete outer wall (cast in-situ) supported by H-piles driven into the ground before excavation commences, after which wood lagging is installed as the excavation progress. On the sides of the excavation the soldier pile and lagging wall is supported by post-tensioned anchors drilled and grouted into the soil around the excavation. (Excavation Support Systems: Boulanger). After this outer skin is prepared the structural screed is laid at an incline to aid with the water management. On top of this screed concrete blocks are laid to create a cavity. A waterproofing membrane is then installed over the blocks after which another screed is cast to accommodate the floor finish as approved.

Figure 6.3: Site excavation

Figure 6.4: Preparation of cavity floor in basement

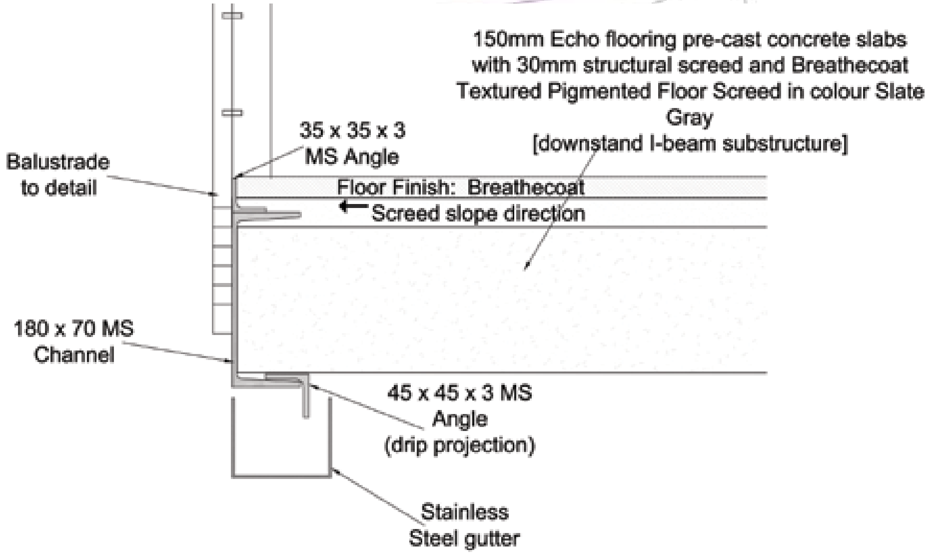

Figure 6.5: Perimeter detail to manage surface water at level differences

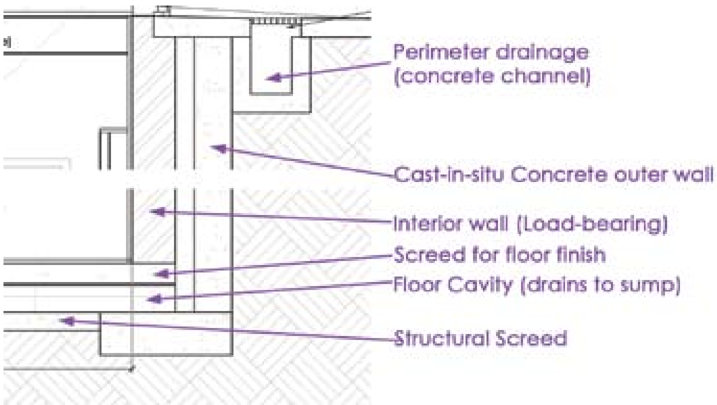

Figure 6.6: Perimeter detail to manage surface water where the new floor is level with existing site level

Water management is a major concern and includes surface run-off as well as water seeping through the structure (damp and groundwater). Waterproofing the space can be approached from different angles: - interior sealing, exterior waterproofing, or interior drainage (Wikipedia: Basement waterproofing). Degrading of any material applied to the exterior skin of the building is inevitable due to constant exposure to moisture and pH differences. Preventative to this is drainage of any water that might enter the structure to ensure the longevity of the building.

The perimeter run of is managed through the use of stainless steel gutters incorporated in the structure (see sections). A sloped screed on top of the floor structure will further aid in the process.

6.4.2 Web Structure

One of the main features of this project is the exterior structure. This skeletal structure serves to bind the leftover spaces between the buildings into a single space that has its own identity apart from the surroundings. It will not carry massive loads like conventional building structures and will mainly provide protection from the elements. The precedent determining the aesthetics and structure is Federation Square in Melbourne, Australia – an array of buildings recently completed as part of the gateway to this city.

According to Federation Square's website (www.federationsquare.com.au) the exterior structure (called the "Fractal Façade") utilises "new understandings of surface geometries". With this new approach to surface, the architecture itself is unique and creates a very definite and identifiable space. Not much information is available on the construction of this web-like structure, however, some details can be derived from photographs of the buildings. The same site (Venue/Building Design page) describes some of the details classifying the glass façade of the

Figure 6.7: Federation Square in Australia, fractal facade

Atrium (one of the buildings) as a 3-dimentional system glazed "both inside and out" that acts as a thermal chimney to exhaust hot air. Transport (the name of another building in the complex) has perforated screens embedded into a zinc-clad "shard" that creates "virtual form" through shadows by day and light emission at night.


Figure 6.8: Federation Square in Australia, double glazing as part of the fractal facade

The application of this precedent study will mainly be as a visual element within the site. Activating space underneath a building implies the presence of a ceiling (in this project the only physical element that directly influences the new project). This is a flat-surfaced concrete slab, which would not accommodate the optimal use of the site (acoustics being the main concern). To create a definable space underneath the existing building without detracting from the surrounding buildings, a very different architectural language will create the necessary contrast and highlight the existing.

The new skin enveloping the Agora will comprise of a main structure (80 x 80 x 6mm drawn steel square section), welded together at the intersections

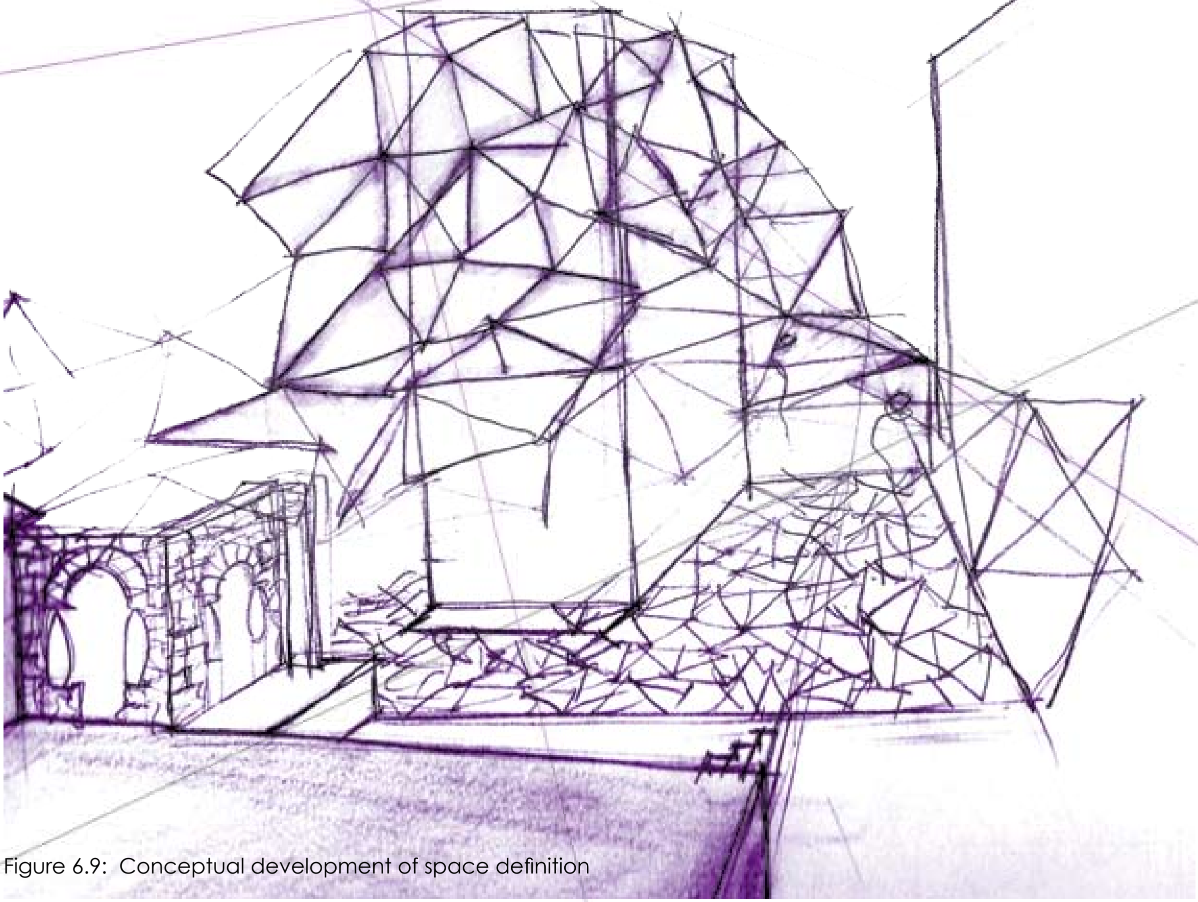

Figure 6.9: Conceptual development of space definition

(see picture... of precedent study [Federation Square] and with steel flat bar (70 x 6mm) welded to the square section. The glass will be installed using a single member spider fixture, that is fixed to the square section as per manufacturer or installers detail, the glass panel itself needs to be installed at approximately 5mm away from the flat bar (see detail), as this joint will be sealed with a flexible silicone sealant (as used in marine applications). Rainwater will necessarily flow to the lowest point (in this case the profiled section of the composite structure) and the structure then becomes the rainwater management system. The glass used to clad the system (in some places, see plan) is 9,52mm Solarshield S20 High impact Glass by Smartglass (20% light transmission) in colour Silver.

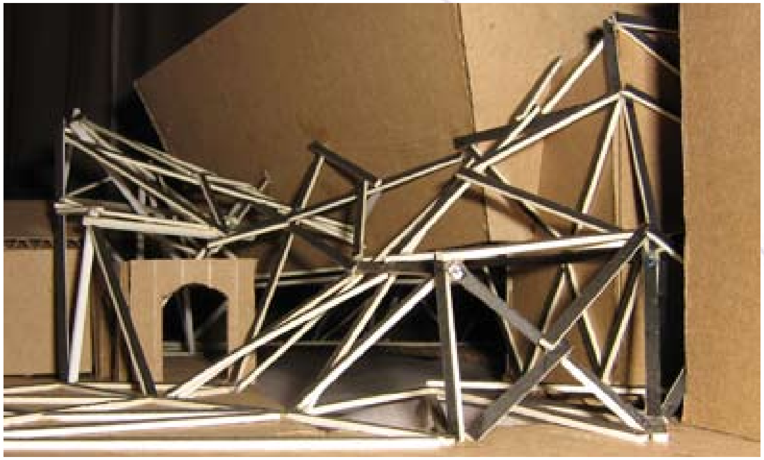

Figure 6.10: Conceptual development of space definition at arch ruins

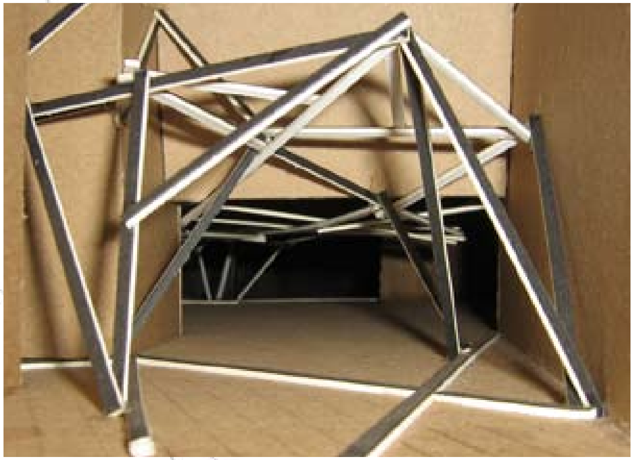

Figure 6.11: Conceptual development of space definition at main circulation entry

Figure 6.12: Conceptual development of space definition over new public square

6.5 Ventilation

Due to the high energy consumption already present within the space (because of the amount of electronic equipment), where at all possible energy should be conserved. Gomez (2005: 204) states that underground buildings have a more constant temperature, with variations as low as 1°C, in contrast with exterior spaces showing temperature variations of as much as 10 °C. This is due to the massive solar mass (soil) surrounding the site. A sunken space has one of its 6 sides exposed to the elements while a conventional building (enveloping space) has 5 sides exposed.

However, the sunken Agora needs to have adequate ventilation because of the user population. The site slopes from the eastern side to the lower western side. This poses a problem as the major wind direction is in the same direction, which means that the wind would typically just blow over the site. Air movement is generated between the buildings that cause a breeze in the opposite direction, but this will not be sufficient to supply the whole Agora of fresh air. For this reason wind catchers were introduced on the eastern side of the space. Wind catchers function with some basic physics. A larger surface area and perpendicular to the prevailing

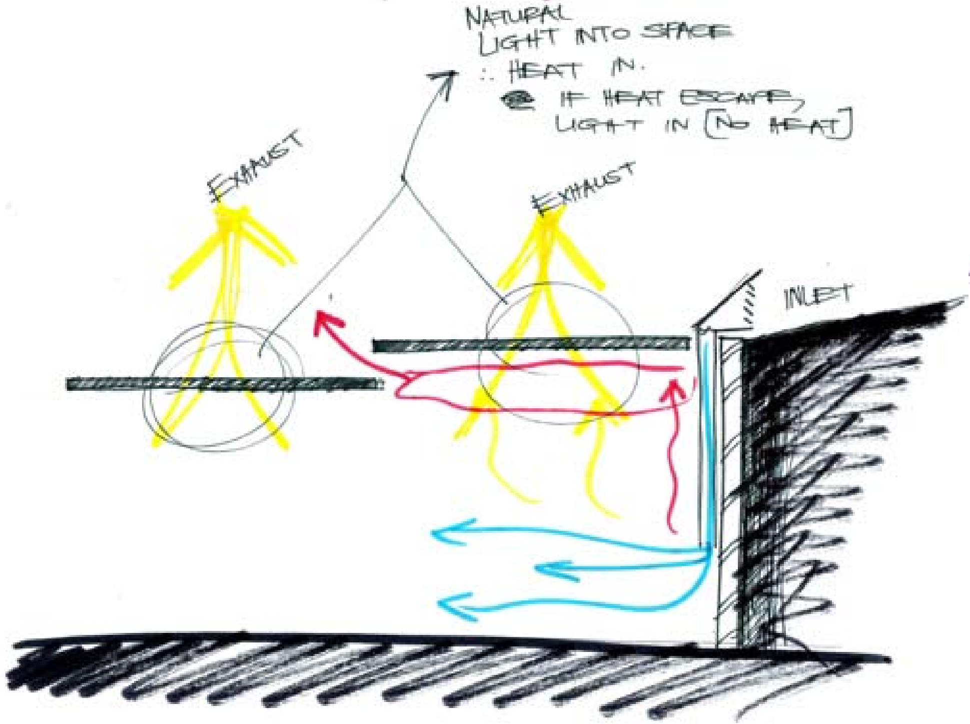

Figure 6.13: Ventilation concept

wind direction funnels the wind into a smaller area, which in turn causes the wind to gain speed. By adding evaporative cooling mechanisms (mist-producing) the air is cooled and forced into the building without additional energy. Pretoria does not have very strong and prevailing winds, thus, the process will be mechanically aided with a low-energy fan. This air is released into the space at floor level, it will get warmed up and then rise. The level differences of the floor (at ground floor level) provide ideal space to exhaust the warmer stale air (See detail section of exterior stairs).

As a whole, the space is largely open in the centre, which would cause the bulk of the air to rise to the ceiling above the open-lecture hall (double volume height). This is easily exhausted by the wind flow coming from the Marketing Services Building corridor. To exhaust the rest of the air (not in the way of the passage), the cavity between the ceiling structure and the underside of the slab should be sufficient.

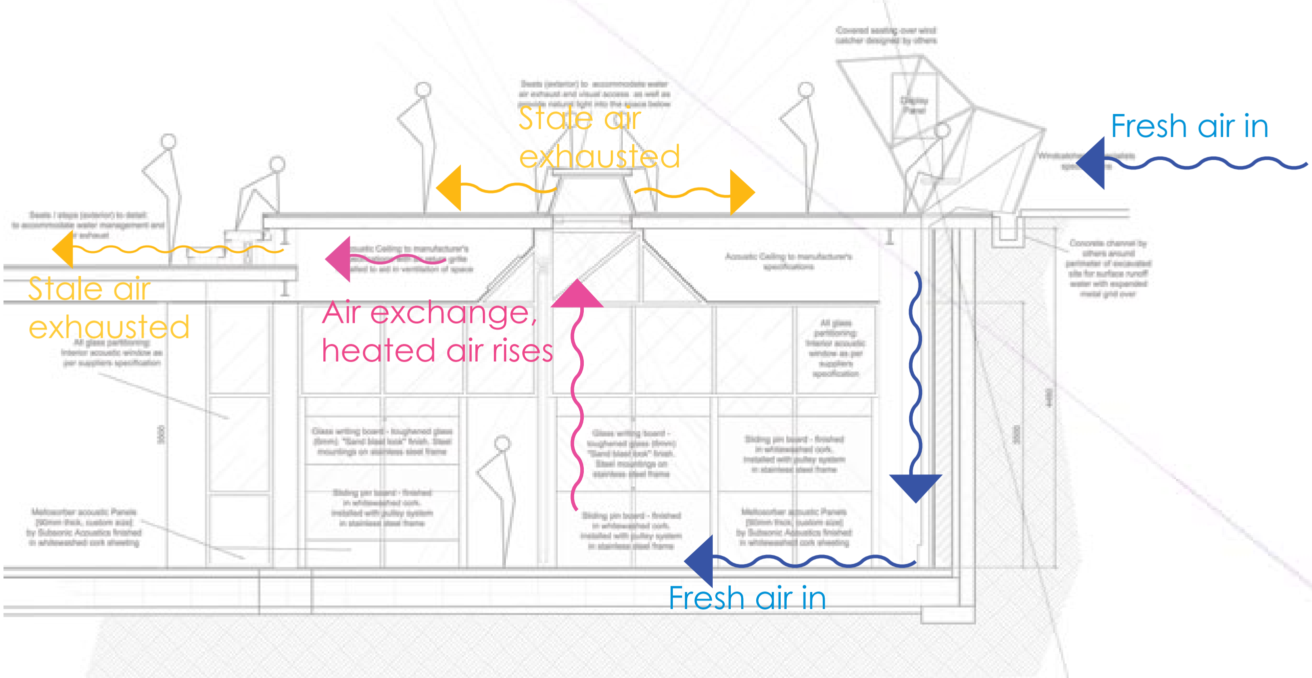

Figure 6.14: Ventilation at Pnyx

6.6 Lighting

The overall colour scheme of the project will be light colours, mainly white and warm-grey. Most of the space is below ground level so natural light must be utilised to the maximum, but direct light into the space should be limited. Another consideration is that most of the light directly falling into the space is northern, southern and western light. To diffuse the light (in addition to the solar-type glass as part of the exterior skin) the surface inside the Agora will reflect most of the light from any source.

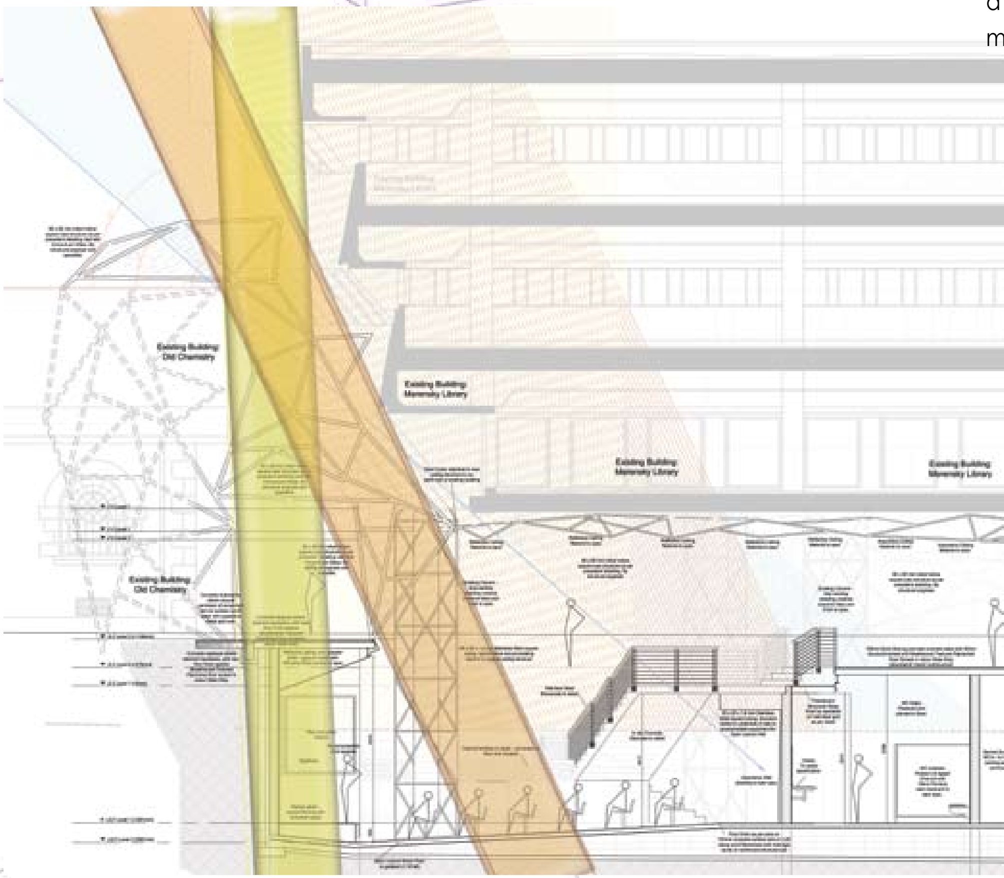

Figure 6.15: Sun penetration into the Agora

6.6.1 Natural light

The orientation of the site in relation to the existing buildings surrounding it allows a significant amount of natural light to enter the space. Covering the excavated site with solid (concrete) surfaces will aid in the thermal stability of the space, and limit unwanted direct sunlight to a minimum. The orientation of the site means that most of the natural sunlight coming into the site is from the East, North and West, implying a constant presence of harsh light. Southern light is preferable, but through adequate management the light can be utilised successfully.

Designed to aid in the ventilation, the western window at the Food Outlet was created by keeping the existing plinth level after excavation and it will allow some natural light to enter the space. The principle aim of this window is to provide a visual link between the interior space and the exterior space. Western (afternoon) light is highly unfavourable, being too bright and at an angle that is uncomfortable. Therefore the window is narrow, providing adequate protection and the close proximity of the "Kanseliers" building further aids in this.

The Open Lecture Auditorium has the greatest exposure to natural light as it extends from the Food outlet area (beyond the existing overhang) to the Meeting Area (in line with the overhang). This is where the application of Solarvue Glass to the exterior fractal structure is critical. The structure will extend past the overhang to cover the Lecture Hall adequately. On the northern side, the graffiti passage effectively doubles the insulation to completely eliminate direct sunlight entering the space.

Situated on the eastern side of the site, the Meeting rooms are subject to morning light and even though direct sunlight is uncomfortable, more of this light can be allowed into the space below the surface. This is achieved through the public seating above the meeting rooms (on ground floor level) which have been designed to include clerestory-like glass panels again creating the aforementioned visual link as well as allowing natural light into the space.

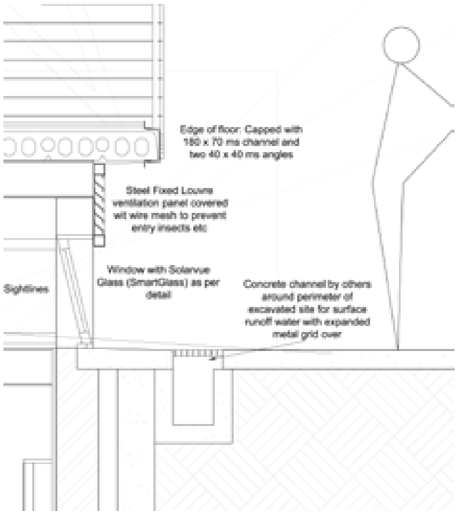

Figure 6.16: Western window at the Food Outlet

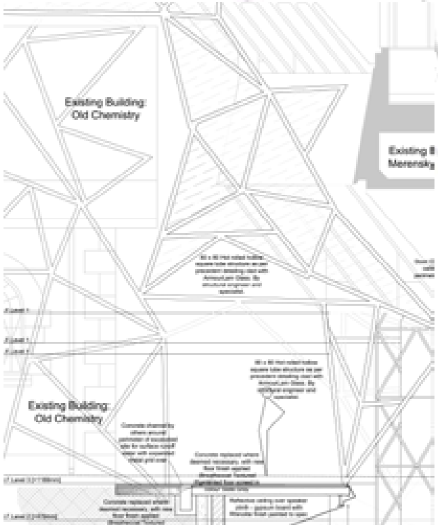

Figure 6.17: Double Skin on northern side of the site

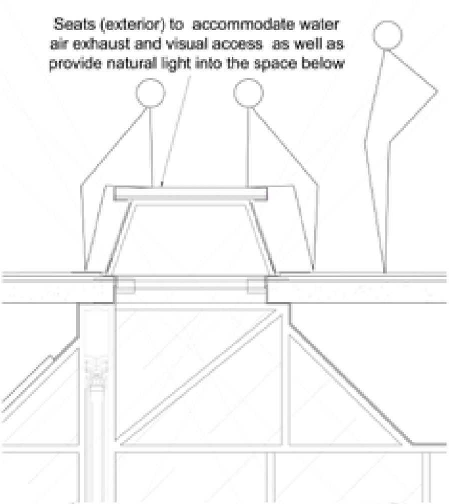

Figure 6.18: Clerestory windows under public seating

6.6.2 Artificial light

Most of the space will be utilised as working areas requiring enough correct lighting to ensure productivity. Two aspects of light are of particular importance when installing artificial lighting to create light as close to natural light as possible. Firstly the CRI measurement is the Colour Rendering Index – determining how natural objects appear under that light and secondly the Correlated Colour Temperature, (CCT) indicating the "warmness" (yellow light – low CCT to blue-white light – high CCT) of the light emitted by the lamp (Website: Lighting Research Centre - How do I choose the right light).

In terms of energy use, light fittings play a significant role in determining the overall energy usage of a building. With new technology answering to most of the energy needs it is a part of the building that can be managed with great success. For the Agora, LED lighting will be implemented. LED Lighting Suppliers is a company in Cape Town which means that by using LED lighting, the Agora is supporting local trade. Also it is even more efficient than fluorescent lighting with LED lights lasting up to 10 times as long as compact fluorescent light bulbs and reducing the electricity usage of the light fittings by as much as 80% (Website: Energy Efficient Lighting).

According to the Lighting Applications Guideline for LED's (PDF document available on the internet: Rensselaer Polytechnic Institute) the requirements for Deli Lighting is a CRI measurement of more than 80, with CCT of 2800 – 3500K. The display area of the Food Outlet would need between 20 000 and 42 000 lumens for optimal efficiency, while the dining area only needs 18 000 to 35 000 lumens.

Applying the same Guidelines to the Open Lecture Auditorium, (using the conference room specifications), it would function at best with luminance levels of 50 000 to 80 000 lumens. It will function with the same CRI (above 80) and CCT (2800 – 3500K) as the Food Outlet area.

Another abbreviation that is of importance is the VDT (Video Display Terminals), especially when looking at lighting requirements for offices. VDT indicates the use of digital screens that will obviously be affected by the lighting. The Meeting Rooms at the Agora will be utilised as working areas, classifying it under the same usage specifications as offices. The adjustable sizes of the rooms (screens, etc) imply the use of dimmers as well as a second system of light fittings. When the smaller rooms are used, the single system (with appropriate dimmers) will be used to achieve luminance of 5 000 to 10 000 lumens. However, when the space is opened up to its full extent, additional light fixtures will be required to reach luminance of 50 000 – 55 000 lumens.

6.7 Circulation

Circulation is a major element in the design of the Agora. The existing nature of the space lends itself solely to circulating students. The Agora functions mainly because of this existing circulation, using it as the backbone for the activation of the site. The newly introduced space will not have the traditional threshold indicating entry into the site; instead the threshold is expanded into a large foyer with staircases and an elevator bridging the two spaces.

Central to the design is the existing sloping site leading users past the Agora. The existing sewer servitude of 2m wide renders the space closest to the Library unsuitable for excavation. By excavating the rest of the site the remainder of the sloping floor finish will act as a ramp, leading from the lower part of the site (the Marketing Services Building) to the higher part (the landscaped area).

The main circulation element into the space is a staircase leading from the aforementioned circulation space down into the Agora. The staircase is the first element in the space reflecting the grid which the rest of the space adheres to. Acoustic properties of the staircase are the main consideration because it frames the back of the Open Lecture Auditorium and for

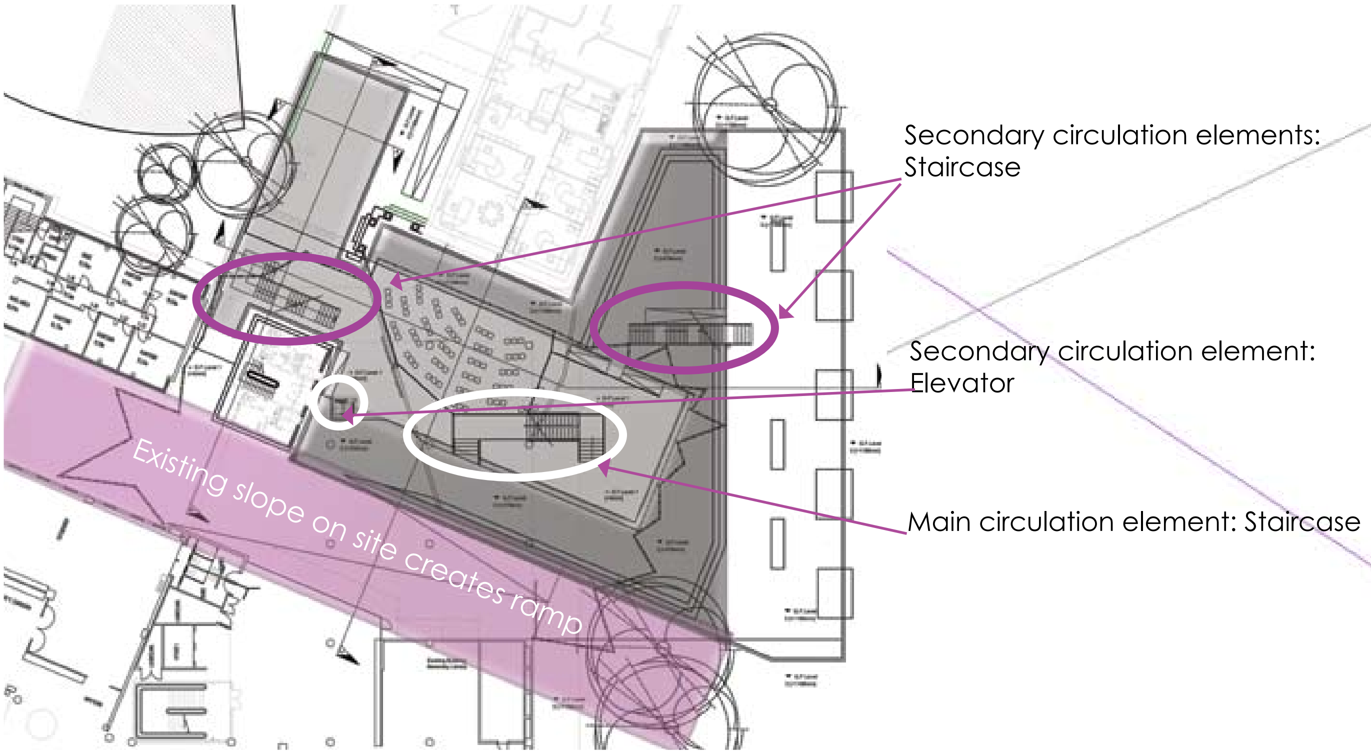

Figure 6.19: New levels on site

that reason a solid staircase would work best. However, the pouring of concrete on site will be difficult. Any component made up of loose parts has a smaller ecological footprint as it can be demolished and re-used more easily than a solid fixed structure. Therefore, a metal structure with precast concrete lintels and a screed cast over that will form the structure of the staircase. As seen on the drawing, the risers are acoustically absorptive to lessen noise. The design of all of the staircases is the same throughout the space, with the staircase at the Meeting Rooms hosting an additional feature. This staircase penetrates the ground floor surface and is covered by a structure closely resembling the Fractal skin of the rest of the space.

6.8 Fire

6.8.1 Design Population

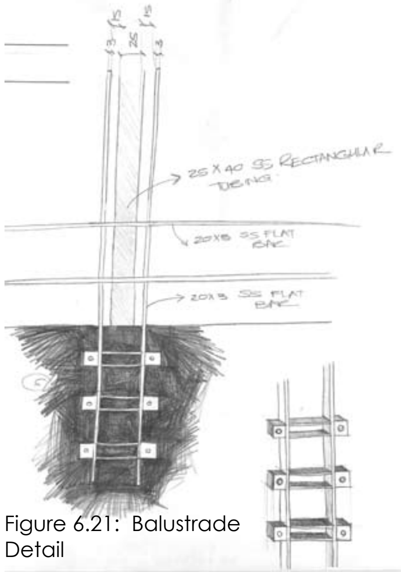
Figure 6.21: Balustrade Detail

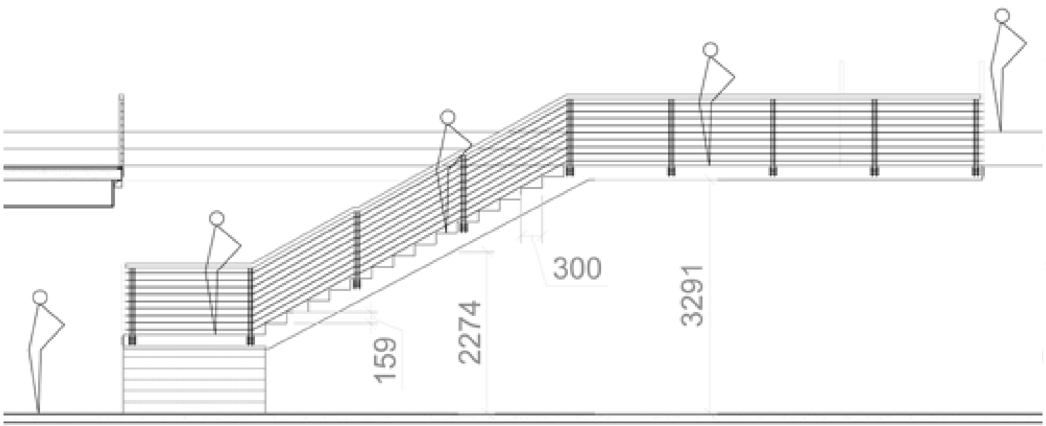

Figure 6.20: Main Circulation Staircase Elevation

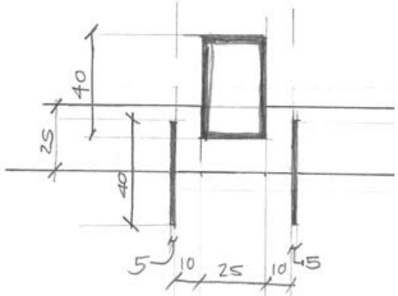

Figure 6.22: Balustrade Detail (Plan)

Area	Occupation Class		Design Population (SABS 0400-1990)	Area	Total
Lecture Hall	Theatre (Peak usage)	A2	1 person / 1m² or seat	90 seats 30 m² open space	120 people
Meeting Rooms	Educational Facilities (lecture/study)	A3	1 person / 5m²	600m²	120 people
Food outlet	Public Meeting Area (eat/drink)	A1	1 person / 1m² or seat	48 seats 123m²	50 people

(See SABS 0400-1990 pg 34&35)

Table 6.5: Design Population

In the case of an emergency the proximity of the staircases will probably encourage the users of the site to evacuate as follows:

- The Food Outlet Area and half of the Open Lecture Auditorium users using the Food Outlet Staircase

(50 users from the Food outlet area and 60 users from the Lecture Hall = total of **110 users**).

- The rest of the Open Lecture Auditorium users and about a third of the users of the Meeting Rooms (including the staff members from the reception Area) using the main (Lecture Hall) staircase.

(40 users from the Meeting Rooms and 60 users from the Lecture Hall = total of **100 users**).

- The remainder of the users from the Meeting rooms using the staircase on the northern side of the space

(80 users)

The National Building Regulations (SABS 0400 – 1990) Part T (page 185) indicate the width of escape routes for the above mentioned population: the minimum width for a maximum of 120 people is 1100mm. The main staircase at the Auditorium is 2m wide as a design decision. The other two staircases are secondary routes of access (1500mm wide).

6.9 Services

The WC's are situated along the wall parallel the existing sewer servitude. There are WC facilities on the second level of the Merensky Library (1 level below ground), which connect to the servitude thereby indicating the depth of the servitude. A service duct is also supplied behind the WC's to accommodate service access. The sumps are also situated at the side of the Servitude, but it will be emptied periodically by means of mechanical pumping.

Deliveries to site are limited to paper, some office supplies, and the prepared food (with some groceries to accommodate the coffee preparation). This will take place after hours (early mornings or late afternoons) so as to not cause additional traffic. If however, delivery during the day is necessary, the elevator can carry bigger trolleys and allow access.

Defined bins will be situated throughout the site to accommodate the separate disposal of waste. The main types of waste generated within the Food Outlet area are packaging materials and some organic waste. These will be cleared out on a daily basis.

6.10 Acoustics

To ensure the effective transmission of information from the Open Lecture Auditorium the acoustic design / considerations plays a significant role.

The Food Outlet area needs to absorb as much of the noise it produces as possible, while at the same time maintaining the typical welcoming ambience of the space, thus a completely subdued space will not suffice. Therefore the circulation space separating the Food Outlet from the Lecture Hall will need to absorb a considerable larger amount of sound, through the use of available technologies such as Mellosorber acoustic Panels (various dimensions, mostly custom made for the Agora) by Subsonic Acoustics finished in cork sheeting. The food outlet area will have some reflective surfaces between absorbing panels (see detail). The Bamboo flooring will be installed on top of a Cork backing to enhance the acoustic properties of the floor.

The Lecture Hall needs to have an absorbing surface directly behind the speaker to avoid echoes. The ceiling needs to reflect the sound as projected from the stage, and absorb most of the ambient noises created by the passers-by (on the ground level

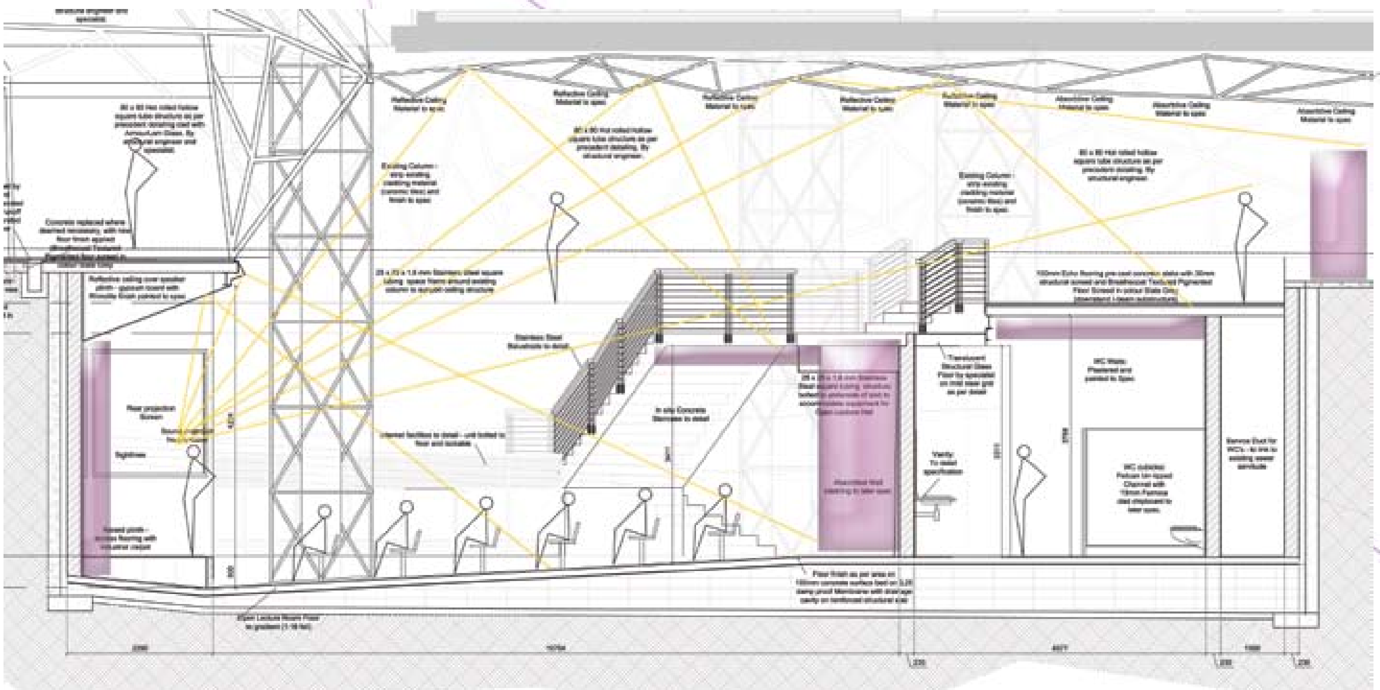

Figure 6.23: Acoustic reflection (lines) and absorption (purple areas) needed in the Agora

above the Agora). The back wall (at the WC's) need to absorb any noise to avoid distracting the audience in the Lecture Hall by passers-by (the circulation within the Agora happens at the back of the Lecture Hall).

The back wall of the Auditorium will be treated with Corrugated Sound Panels by Barrier Acoustics (600 x 600 x 70mm Absorbing foam material BA70CP). Sound absorption is best when this product is placed in the direct path of the sound, ideally in the Agora where the back wall is parallel to the stage's wall. This material will be applied as needed throughout the Agora.

Most of the surfaces in the Meeting Rooms are reflective (to accommodate writing), and will be alternated by softer surfaces (soft board pin-up boards finished in whitewashed cork) to enhance the sound quality of the space. The Bamboo flooring will be a repeat of the specification as mentioned at the Food Outlet. Suspended ceilings will aid with the absorption of some of the generated noise. Due to the use of PC's and the accompanying sound, the exact acoustic design needs to be designed by a specialist installer.

Figure 6.24: Barrier Acoustics: Absorptive Material (BA70PP or Pyramid sound panels)

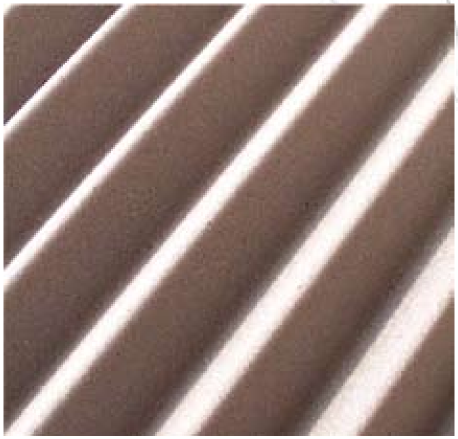

Figure 6.25: Barrier Acoustics: Absorptive Material (BA70WP or Wedge sound panels)

6.11 Inclusive Design

The physical constraints of the site are not favourable for easy access by all. The main access point is the elevator situated close to the main staircase. The ground level hosts a series of ramps that will aid a person in a wheelchair to circulate to any place on the site and ultimately to reach the elevator with ease.

The internet facilities were designed for a person standing while using it, excluding some users. To accommodate this, 6 units were designed to be accessible by users at a seated height.

The Lecture hall has a sloping floor with 1:18 fall ensuring comfortable use by persons in a wheelchair. The floor finish (rubber cork mix) is also non-slippery (ensuring safety for all users).

The digital wall in the Meeting Rooms is designed with most of the user interfaces as wireless fittings. These include the keyboard, the mouse and a digital pen that can be used at the desk. The fact that a person in a wheelchair can reach up to 1200mm in height was taken into consideration throughout the design of the unit (see detail)

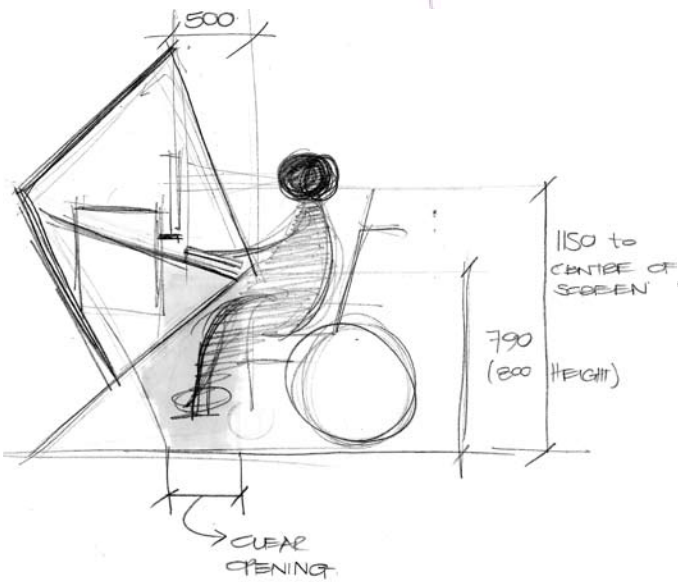

Figure 6.26: Wheelchair accessibility of units

6.12 Material

THe material finish ultimately determines the success of the interior space to a large extent and impacts the acoustics, lighting, aesthetics and use of the space. The Agora serves to remind one of a public square with the added benefit of being "inside" (protected from the elements, comfortable smaller spaces and technology to aid the thought processes).

6.12.1 Flooring

Traditionally the floor materials that would be considered for a public space would be limited to tiles and commercial carpeting. However the Agora has very specific acoustic requirements that will not be met by tiles, and carpeting in a high traffic space such as this will need constant maintenance and replacement. (See Appendix – Flooring)

Figure 6.27: XCR Cork Rubber flooring in Steel Gray

Cork Rubber Flooring

The largest part of the Agora is treated with rubber/cork flooring; the specified Product: XCR4 Cork Rubber Flooring in colour Steel Gray, by Expanko Resilient Flooring, installed to manufacturer specifications.

"XCR[4] flooring is made from a unique blend of recycled cork and rubber. It combines the benefits of these two components creating a colorful, water resistant, hardwearing floor. Benefits of XCR4 include resilience, comfort, sound reducing qualities and slip-resistance.." – (Website PDF Document: Expanko Flooring)

The use of this product relies mainly on its acoustic properties combined with the hard-wearing properties of rubber. The colour will reflect light, without the glare that would be associated with a white floor. The usual smell that accompanies rubber flooring will be offset by the cork, while the cork's softness is supplemented by the rubber.

Bamboo

Bamboo flooring was chosen as complimentary to the cork flooring. The public space can become a cold and impersonal space due to its proportions. "Warming" the space by means of timber relies on the memory of timber flooring at home, while bringing warmer colours to an otherwise very cold space. Specified Product: Solid Bamboo [cross-laminated] Flooring (Oriental Bamboo Flooring: Long Plank 1860 x 158 x 15mm in Natural (Blonde).

According to GreenSage (a website focusing on green building practices) Bamboo has the following characteristics:
"In regular flat grain or vertical grain 3-ply laminate. Available in natural (blond) color or warm amber. Unfinished or prefinished with aluminum-oxide enhanced UV-cured acrylated urethane with anti-scratch hardened acrylic top-coats (the most durable finish technology currently available). 30 year warranty available for residential applications. LEED eligible: MR Credit 6 (Rapidly Renewable Materials)."
(Greensage: http://www.greensage.com/09649-bamboofl.html)

Figure 6.28: Oriental Bamboo Flooring in colour Blonde (natural)

Figure 6.29: Oriental Bamboo Strandwoven Flooring in colour Blonde (natural)

Figure 6.30: Oriental Bamboo Flooring structure

6.13 Finishes and Fixtures

6.13.1 Basins

The basins were purposely designed as a feature of the WC space, not utilising traditional basins, but instead supplying a surface over which one can wash hands. This provides an element linking the WC facility to the rest of the site through the visual representation on the triangles.

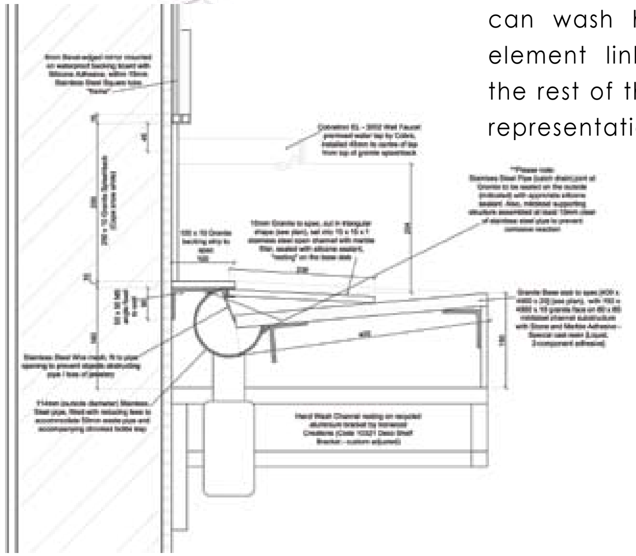

Figure 6.31: Section through Hand wash trough

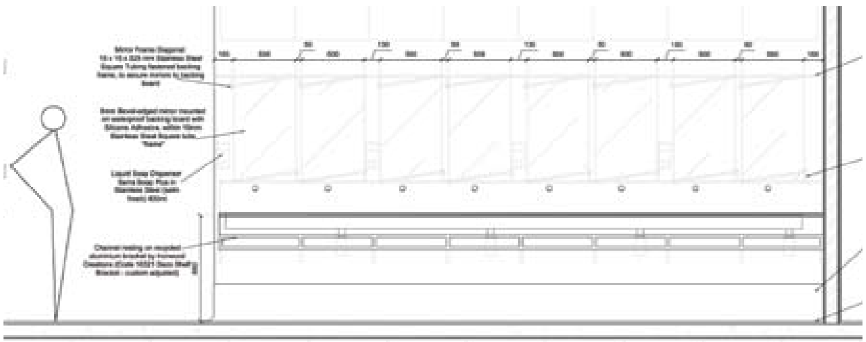

Figure 6.32: Elevation of WC wall with window detail

Specification

Material
Cape Snow white Granite 10mm cut to detail with 2mm bevelled edges. This granite (pictured on the right is a South African Granite)

Sub-structure
Channel resting on recycled aluminium bracket by Ironwood Creations (Code 10321 Deco Shelf Bracket - custom adjusted)

Taps
Cobratron EL – 3002 Wall Faucet premixed water tap by Cobra. This is a hands free tap (operating through sensors).With Cobra chromed bottle trap fixed to collaborative draining pipe.

Mirrors
6mm Bevel-edged mirror mounted on waterproof backing board with mirror screws, set in Aluminium T-section frame as per detailed drawings (approximate size 530mm wide by 825mm high). See drawing)

6.13.2 Food Outlet Wall detail

The wall detail at the Food Outlet was designed as a "random" pattern of triangles reminding of the exterior structure, however, to eliminate wastage, a standard mirror (1500 x 1500) will be cut up as indicated, and these panels will be fastened to the substructure with the appropriate mirror screws.

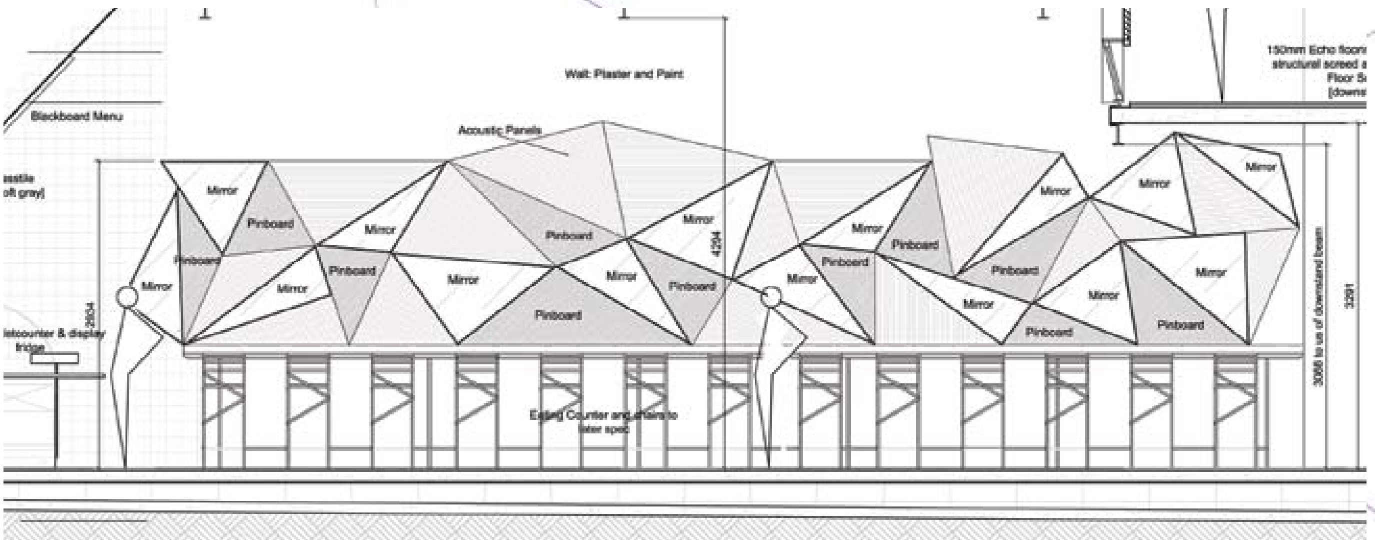

Figure 6.33: Elevation of fractal wall detail in Food Outlet Area

6.13.3 Digital Wall Unit

The units designed to host the electronic equipment will be bolted to the ground to provide additional security. Internet facilities, printers) as well as PC workstations are supplied in the Meeting Room Area. These comprise of a 30 x 30 mm stainless steel square hollow section framework, with appropriate infill materials (see detail). The security of the equipment is a major consideration as most of the site is open to the public for the larger part of the day.

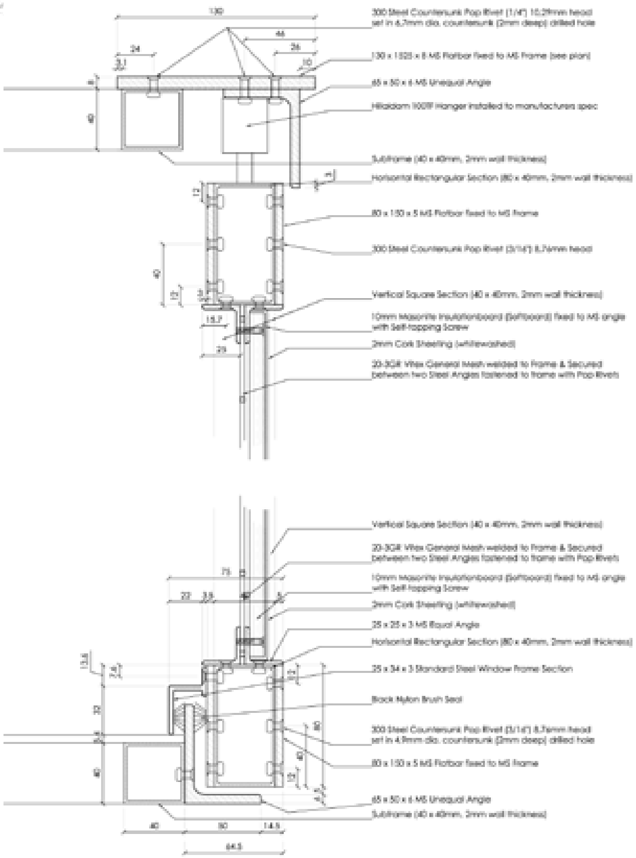

Figure 6.34: Digital Wall Unit Door Detail

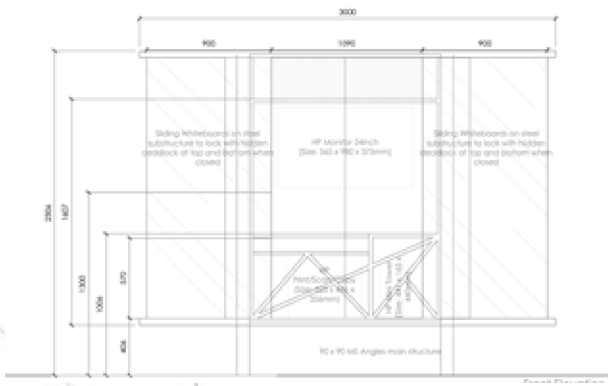

Figure 6.35: Digital Wall Unit Elevation

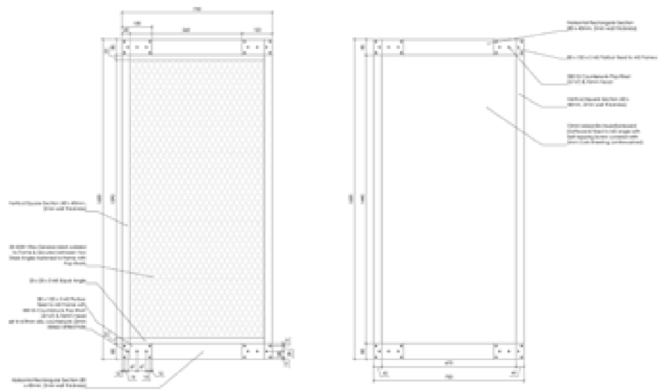

Figure 6.36: Digital Wall Unit Door Detail

6.13.4 Partitioning

Within the Meeting Rooms the vertical surfaces were designed to accommodate and invite information sharing. This is achieved through the supply of glass (one of the best writing surfaces) in its different finishes. The sliding panels (by Dorma) are designed to ensure visibility of the interior space when closed, but includes the adequate writing surface. These panels are part of the Moveo Design Line (sealed lightweight sandwich composite door with acoustic foam. The fixed panels consist of an aluminium frame (ceiling to floor), with double glazing (with a "sandblasted" finish on the inside of the panel) to provide legible writing surfaces.

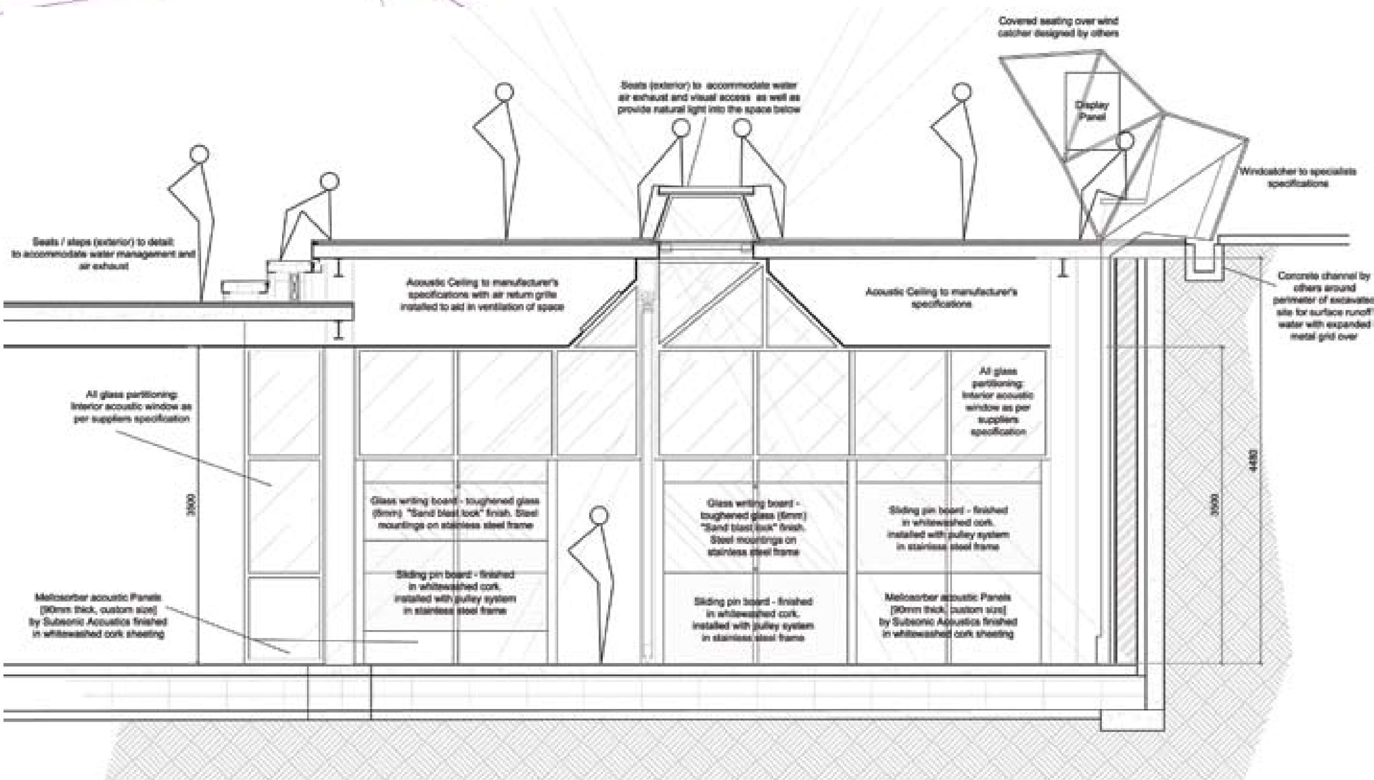

Figure 6.37: Elevation of wall detail in Pnyx Meeting Rooms

Information acquired to form knowledge that will generate memory seems purely theoretical and conceptual. However, this project aims to crystallise the concept of information which forms the backbone of any university. Applying the recognised interior design principles to an exterior room creates a space out of the ordinary, to host information out of the box of traditional buildings.

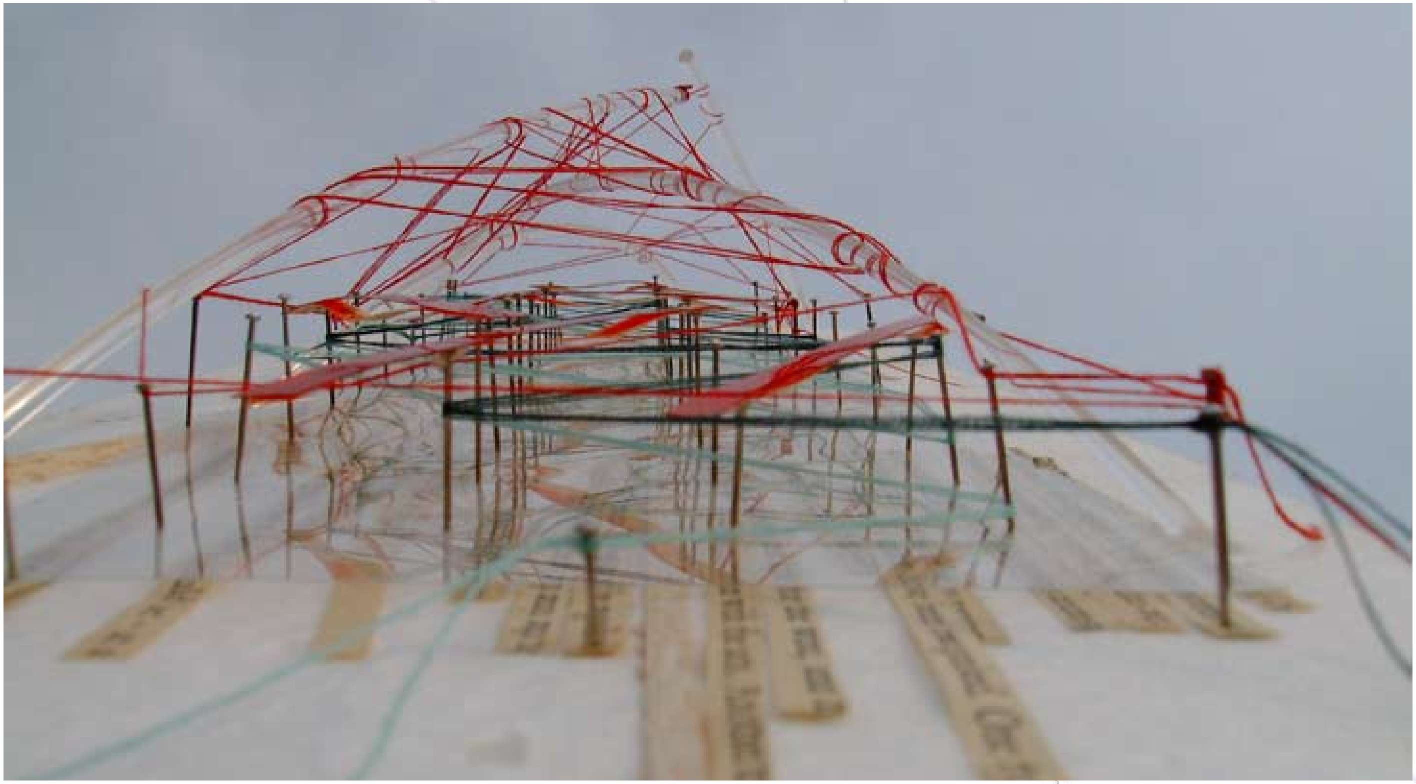

Figure 6.38: The meta-physical nature of information exchange