

# 5

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# De sign

"...our society is not one of spectacle, but one of surveillance; we are neither in the amphi-theatre, nor on the stage, but in the panoptic machine." –[Focault,1977: 217]

## Concept development

The design concept is an amalgamation of the theoretical investigation. The design is an extensive process manifesting from the theoretical premise, discussed in the previous chapters. The project investigates the quotidian [or everyday] context of the city, where the urban environment is seen to contain both the 'settings' and the 'props' for these everyday activities. The mapping of the public realm reveals the quotidian context of the city, by using Bernard Tschumi's three squares principles (Tschumi, 2000: 14) (a system developed to read the narrative of film and architecture; fig. 5.2) as a design generator for the intervention. As a response to the extensive mapping of the context (Van der Walt Street), a series of public infrastructures are conceptually proposed to respond to each public condition (fig. 5.1); thereby both celebrating and enhancing the everyday context of the city. Such a response attains Crawford's (2008: 18) 'everyday urbanism' whereby a series of small scale public interventions are proposed along Van der Walt Street (fig. 5.1).

*'Powers of Ten'* is a 1968 American documentary short film written and directed by architects Ray Eames and her husband, Charles Eames, rereleased in 1977. The film depicts the relative scale of the Universe in factors of ten (Powers of ten, 2010).

The critique on Tschumi's la Villette and Price's Magnet projects' sets the planning approach for the interventions. The project is therefore an investigation of architecture on multiple scales. Inspired by Eames's 'powers of ten' (see note left) the intervention is an adventure in exploring Pretoria; and Van der Walt Street from these varying levels of scale, where the architecture provides a platform for viewing and engaging with the city. The proposed interventions planned along vd. Walt street are seen in the mapping (fig. 5.2) and placed on the model (fig. 5.1), setting both physical and theoretical macro context for the project.

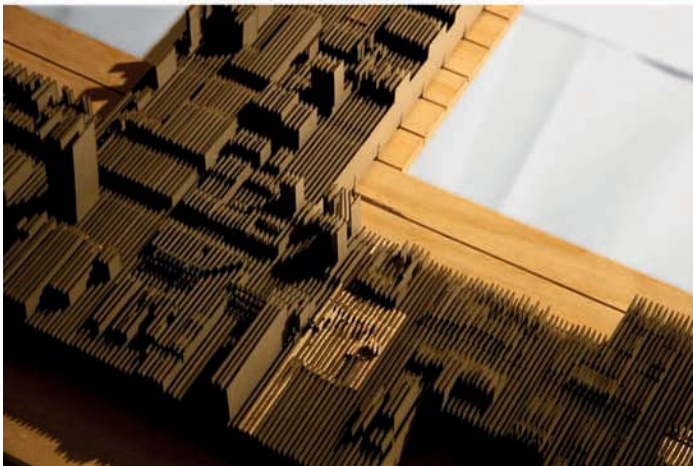
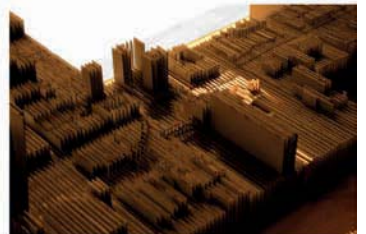
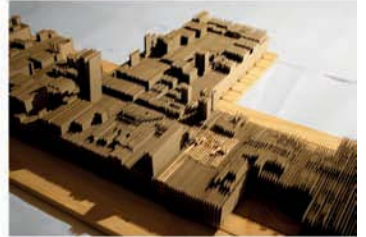
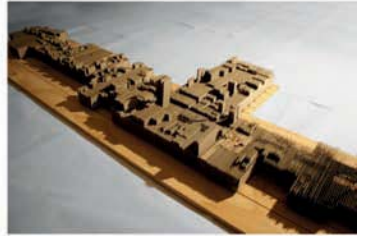
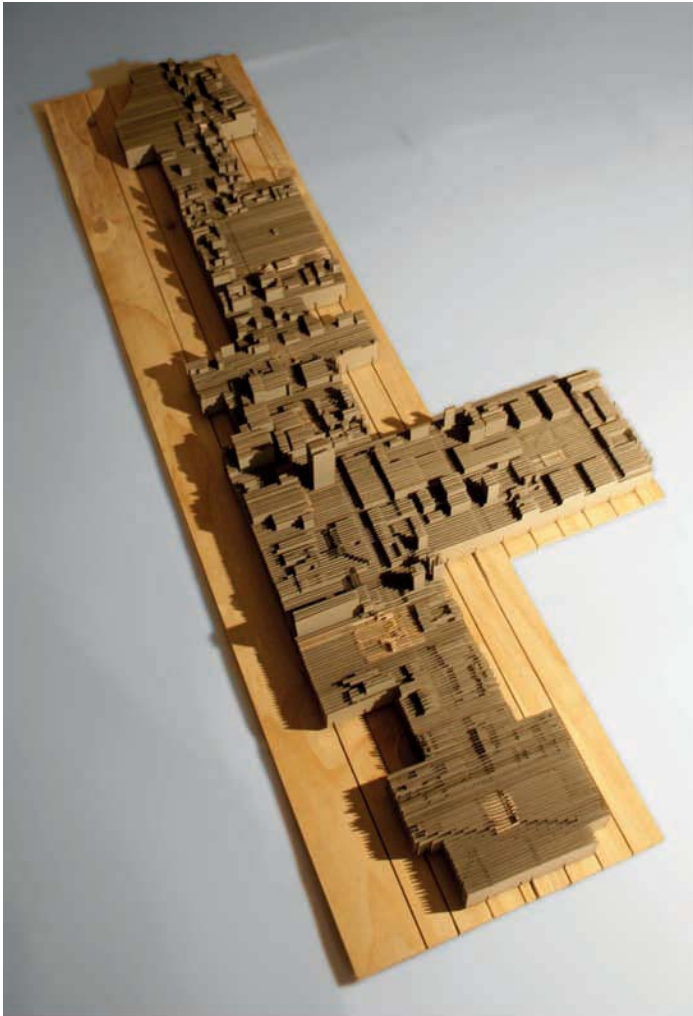


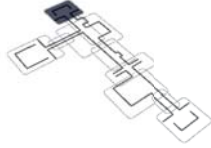
fig. 5.1 Concept Model of Van der Walt street and interventions [June 2011]

observations

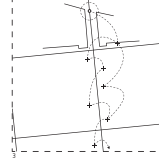
magnet

①

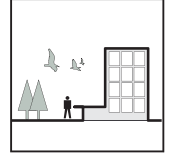
Bloed st. Taxi Rank



Eating

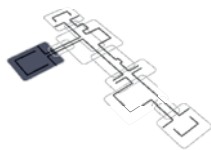


urban tables

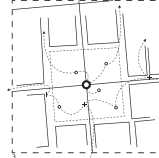


②

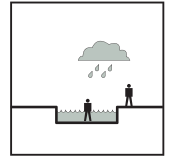
Chruch Square



Sitting

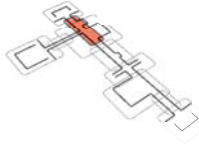


waterspace



③

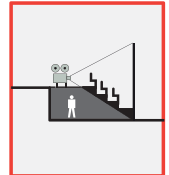
Munitoria Urban Cavity



Vending

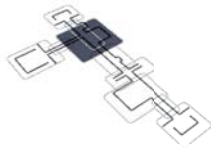


stairway

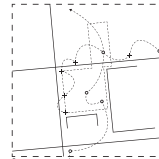


④

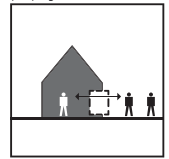
State Theatre / Public Square



Theatre

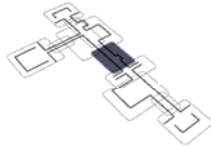


peeping window

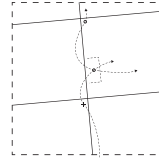


⑤

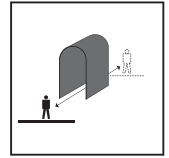
Tramshed v.d. Walt st.



Shopping



arcade



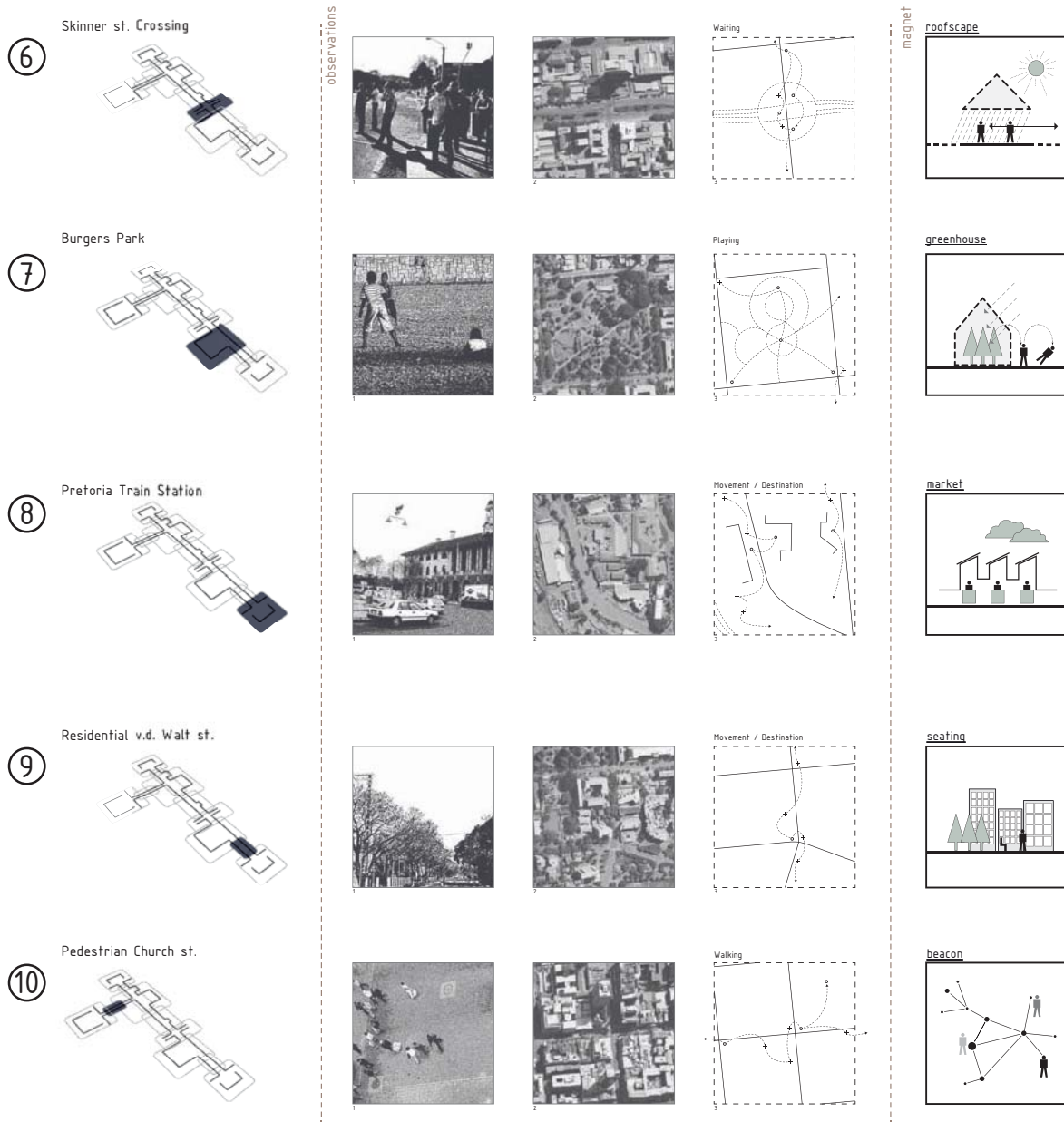


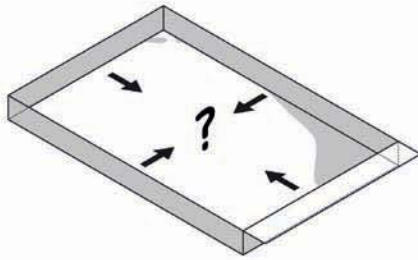
fig. 5.2 Mapping and analysis of Van der Walt street with proposed interventions [June 2011]

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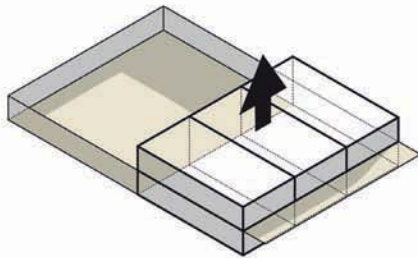
## #3 Stairway

#3 the “Stairway” at the site of the urban cavity (at the burnt down West-wing) at Munitoria is developed further in detail. At this key site along Van der Walt street, a conceptual inhabited “stairway” is provided to bridge the level change (threshold) of the urban cavity and the street. As seen from the mapping, the burnt down basement creates a negative inaccessible void within the urban fabric, in turn creating inhumane edges (fig. 5.3). Through the manipulation of the urban surface the stairway brings together a multiplicity of programmes celebrating and enhancing the everyday context through its inhabitation. The stairway thus forms a new public building typology (defining liminal public architecture for an *active* public space, rather than the *static* form of public space which we find within the city).

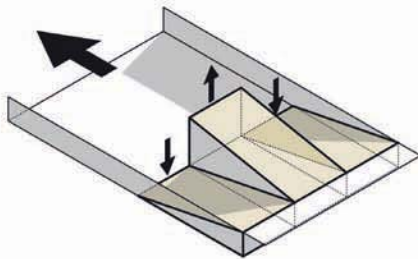
Rather than designing for a fixed program, the architecture responds directly to the context (as observed in the “sit city” case study: fig. 2.6). Whereby the overlapping of activities of the quotidian define the urban surface allowing for its appropriation and inhabitation. Thus the stairway responds to Cruz and Gage’s (2009: 114) notion of an “inhabitable interface”, whereby the surface is programmable for the spontaneity of the everyday. This potential and complexity is understood through Davis’ “telescopic text” (2007) which illustrate the multiple scenarios and possibilities within the everyday. The Stairway’s multi-directional surface forms an extension of the street interface, linking both levels of public activity; offering potential to provide multiple configurations of the Stairway. This allows for various programming of the public space and its liminal infrastructure that responds to these varying narratives and events of this spectacle - as explained by de Graafland’s “gameboard strategy” (2008: 24).



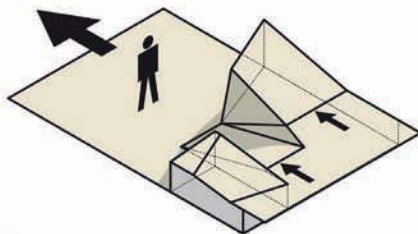
**urban cavity** as unknown space within the city, the need to link with surrounding context of the city.



**activating the street edge** by placing an architecture to activate both the street and the urban cavity.



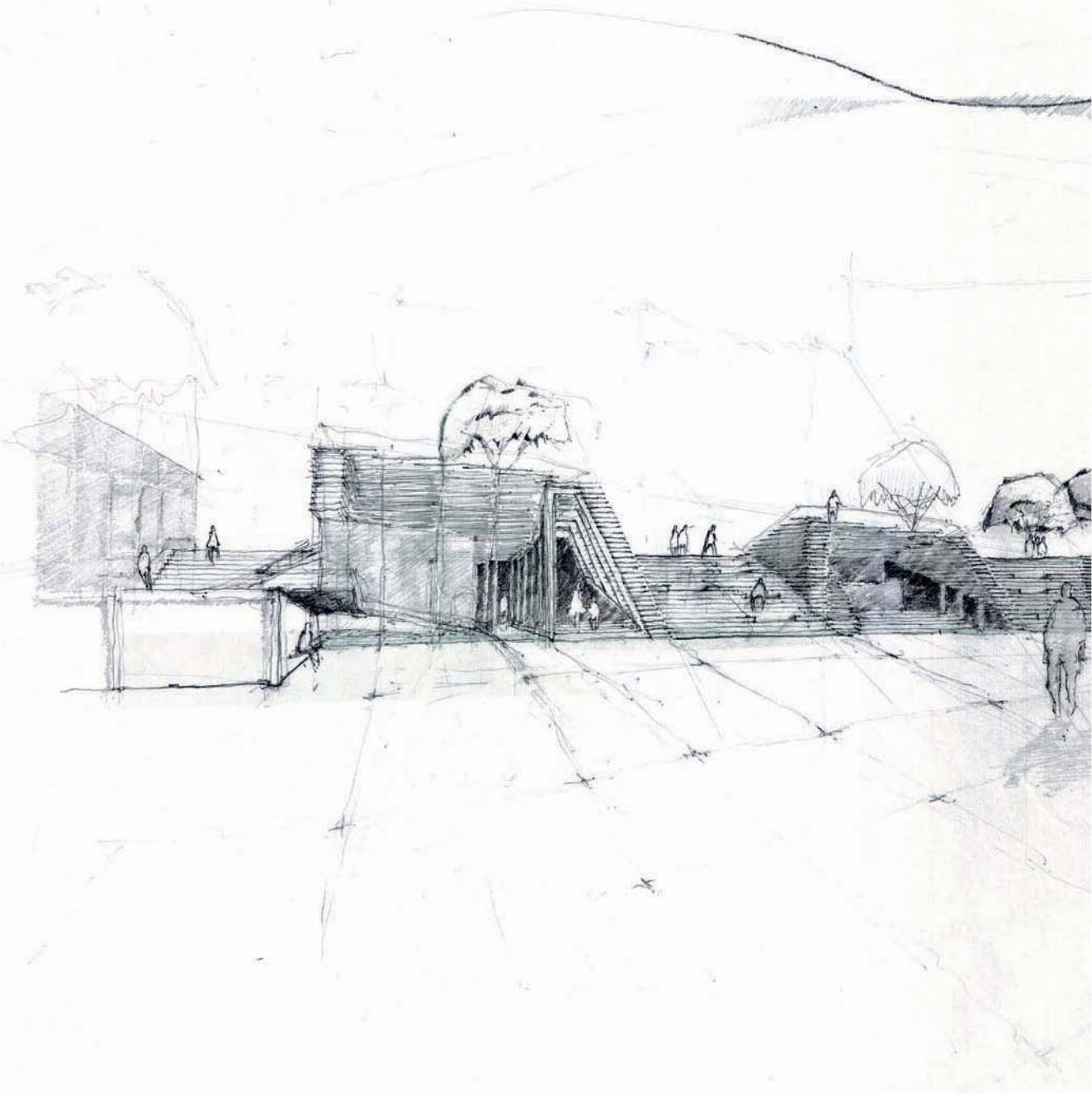
**stairway links both levels** of the public realm, allowing for the continuation of public space.



**manipulation of urban surface** to celebrate the everyday performances of the city, allowing for the inhabitation of the edge.

fig. 5.3 Concept of #3 Stairway [July 2011]





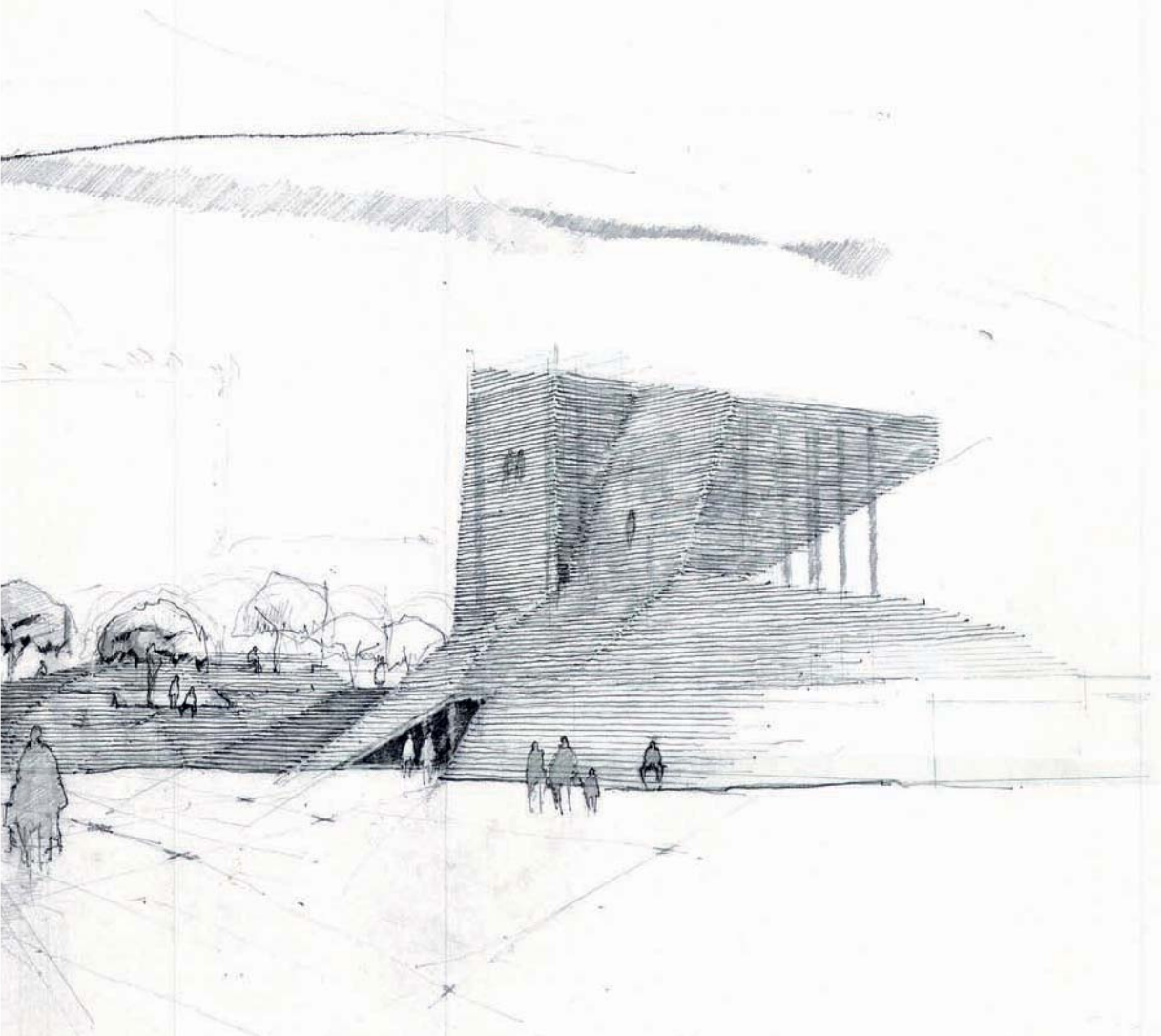
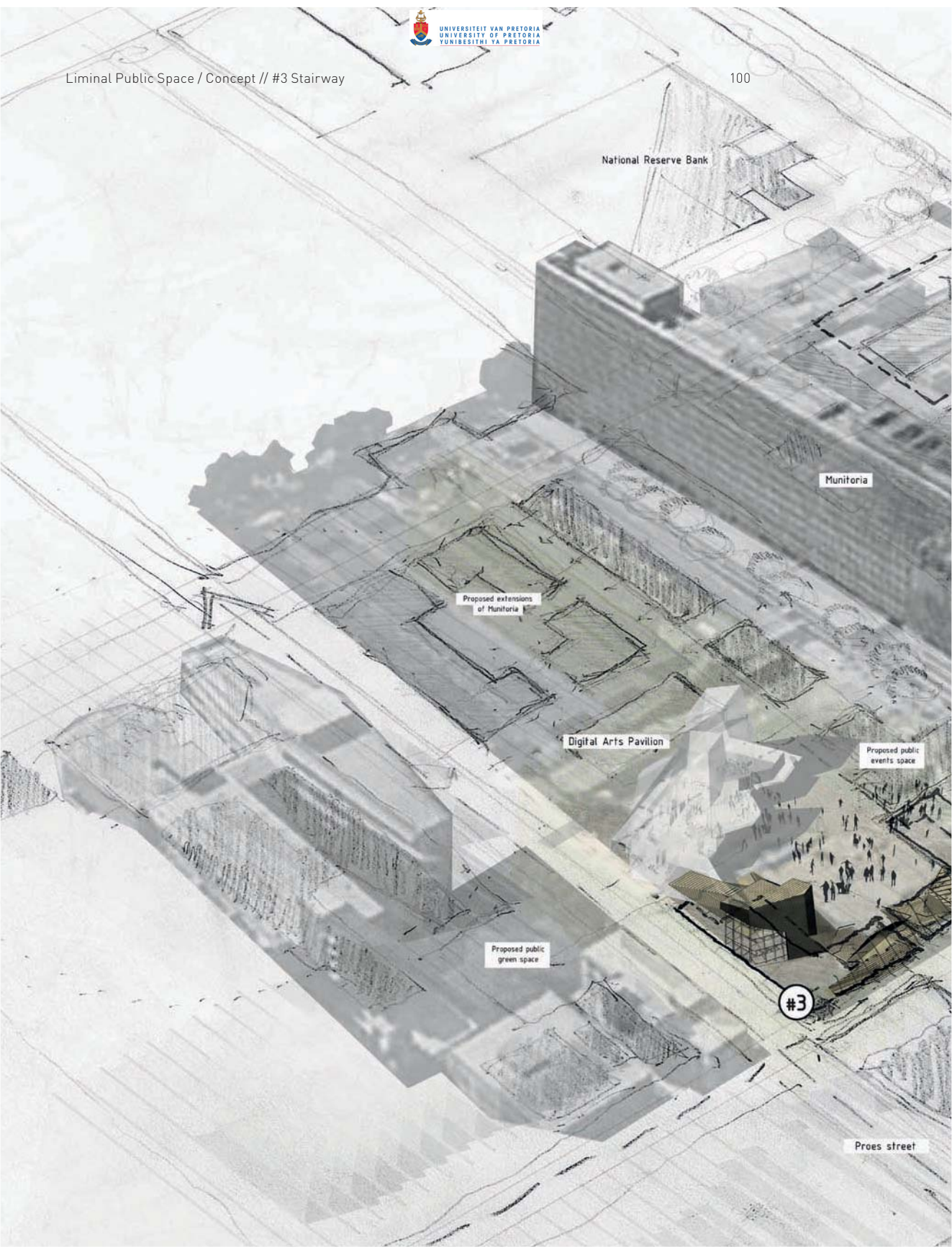


fig. 5.4 An investigation of the conceptual inhabited #3 stairway, as the extension of the urban surface.



National Reserve Bank

Muntoria

Proposed extensions  
of Muntoria

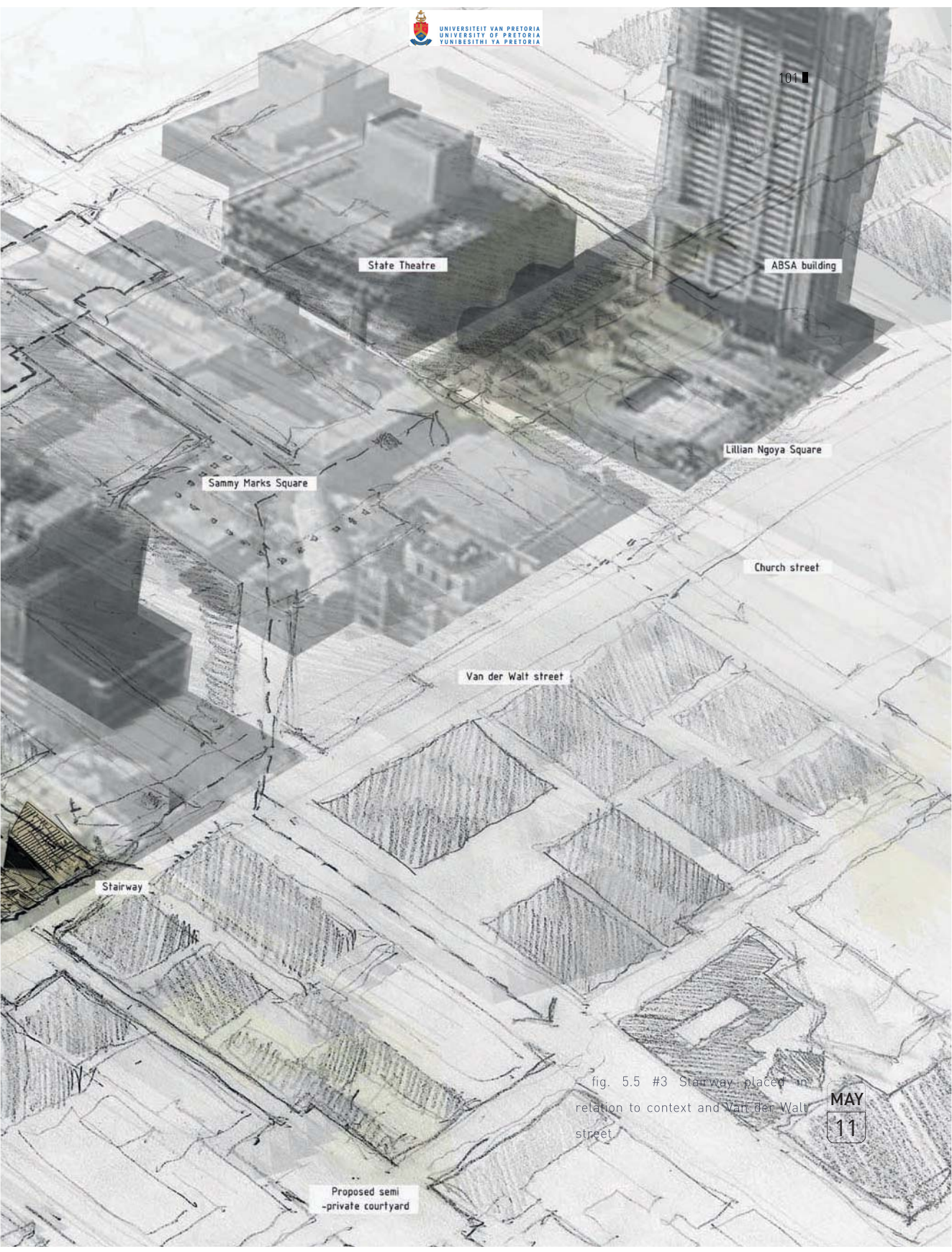
Digital Arts Pavilion

Proposed public  
events space

Proposed public  
green space

#3

Proes street



101

State Theatre

ABSA building

Lillian Ngoya Square

Sammy Marks Square

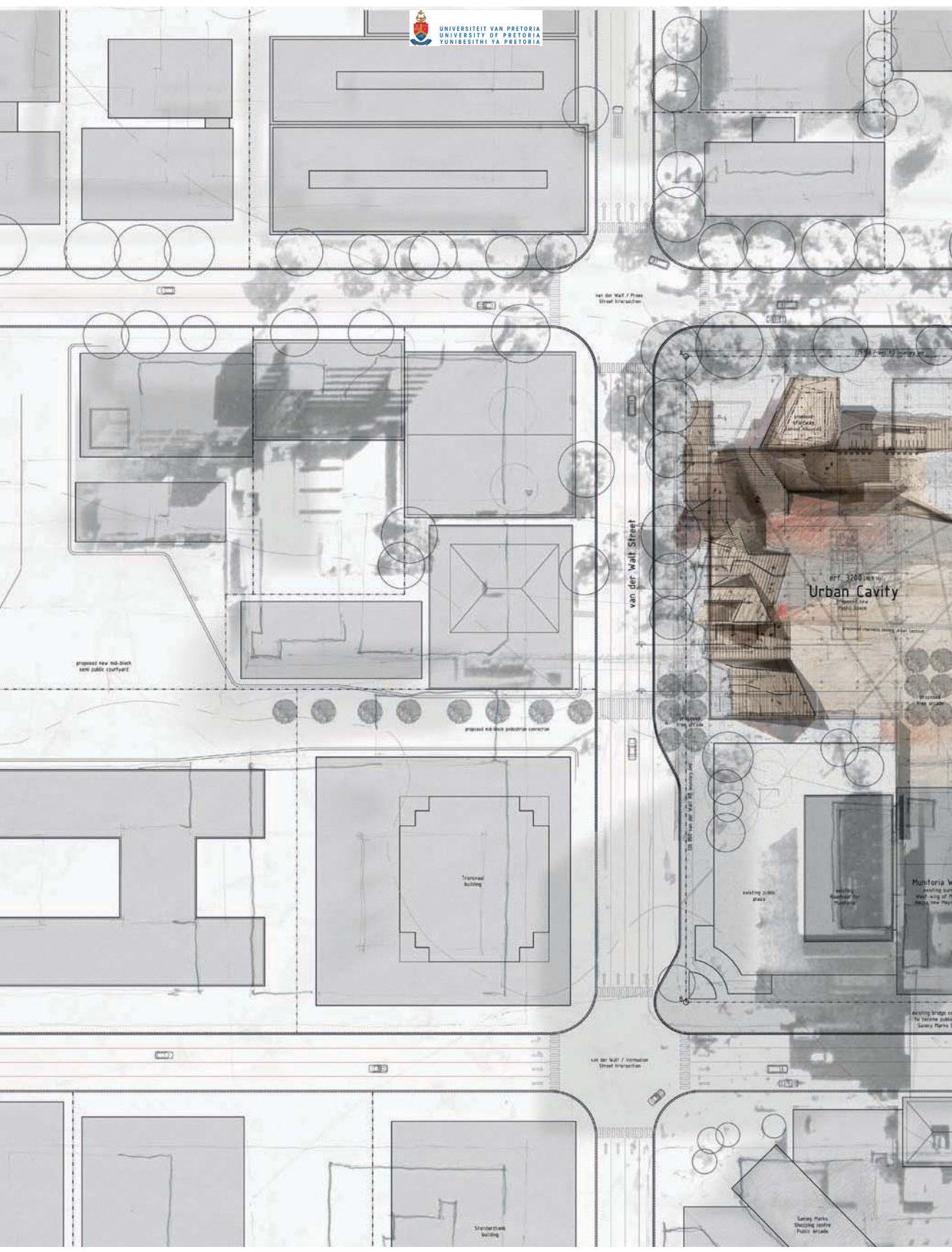
Church street

Van der Walt street

Stairway

Proposed semi-private courtyard

fig. 5.5 #3 Stairway placed in relation to context and Van der Walt street



van der Walt / Price Street Intersection

van der Walt Street

van der Walt / Yonkhan Street Intersection

nr 3208  
**Urban Cavity**  
Public Space

proposed new 400-2000 sqm public courtyard

proposed new public entrance

Transvaal building

existing public plaza

existing building for training

Muniforia building  
existing building for training  
existing building for training  
existing building for training

Sherratt building

Sally Parks  
existing building for training  
existing building for training  
existing building for training

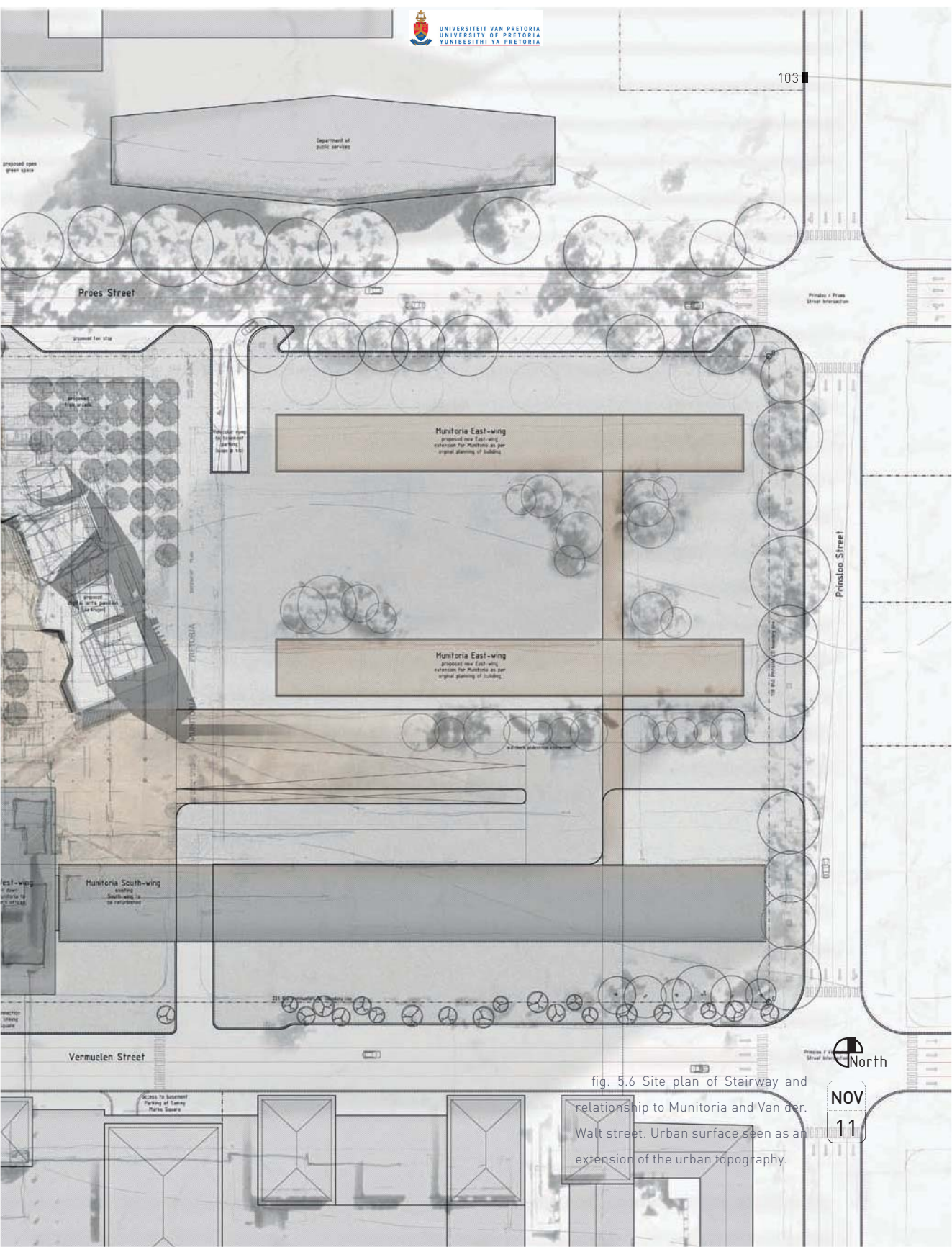


fig. 5.6 Site plan of Stairway and relationship to Munitoria and Van der Walt street. Urban surface seen as an extension of the urban topography.

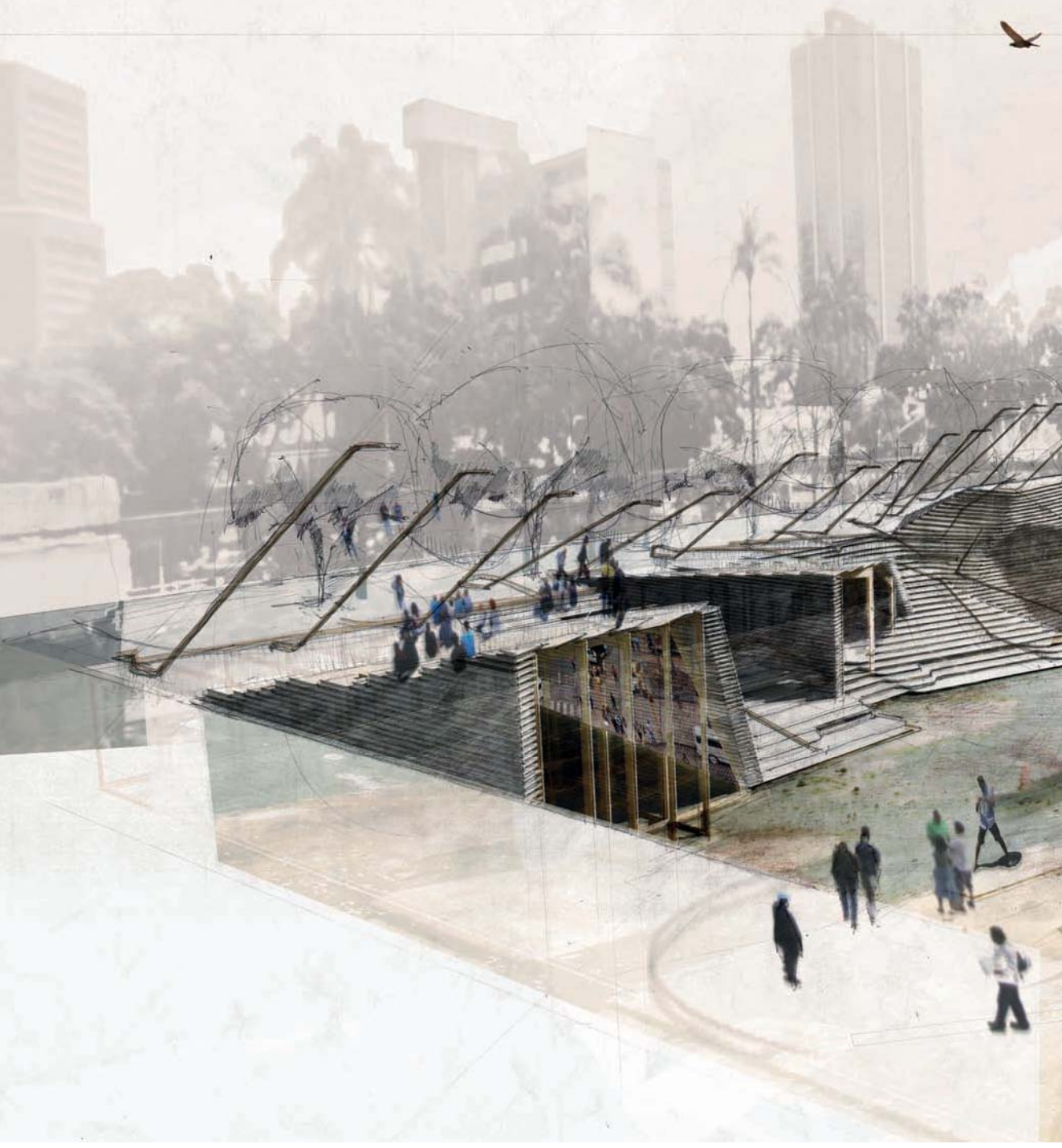
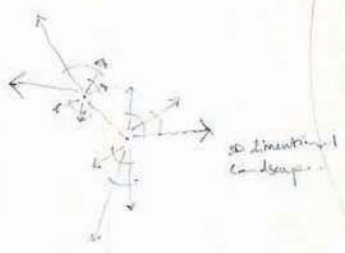
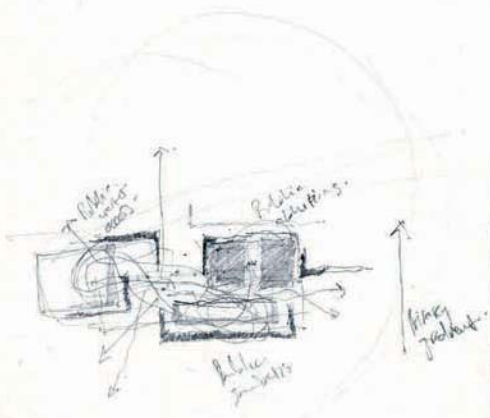


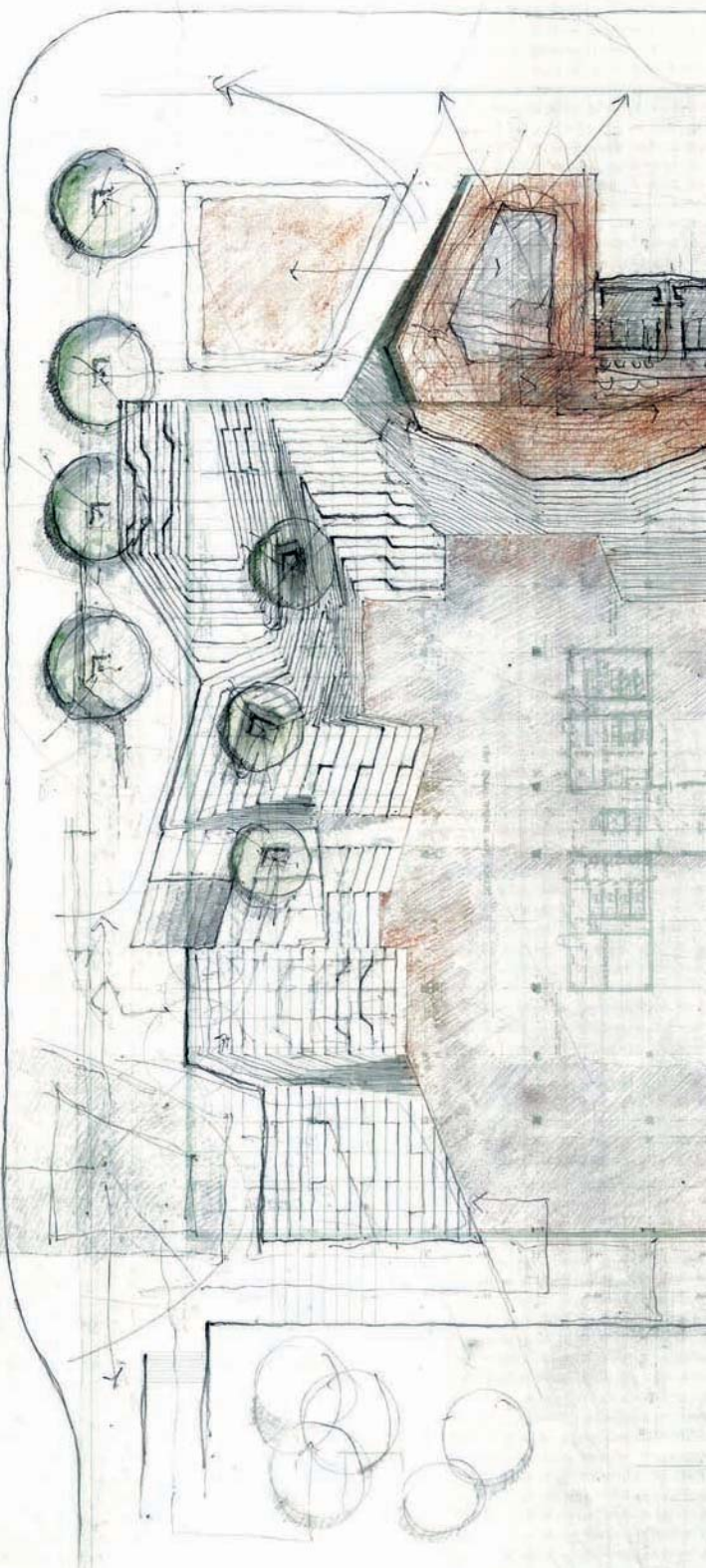


fig. 5.8 Urban cavity and stairway  
inhabitation of architecture and  
surface for the performance of the  
everyday and quotidian.





specification in  
wind-bleek  
measurement



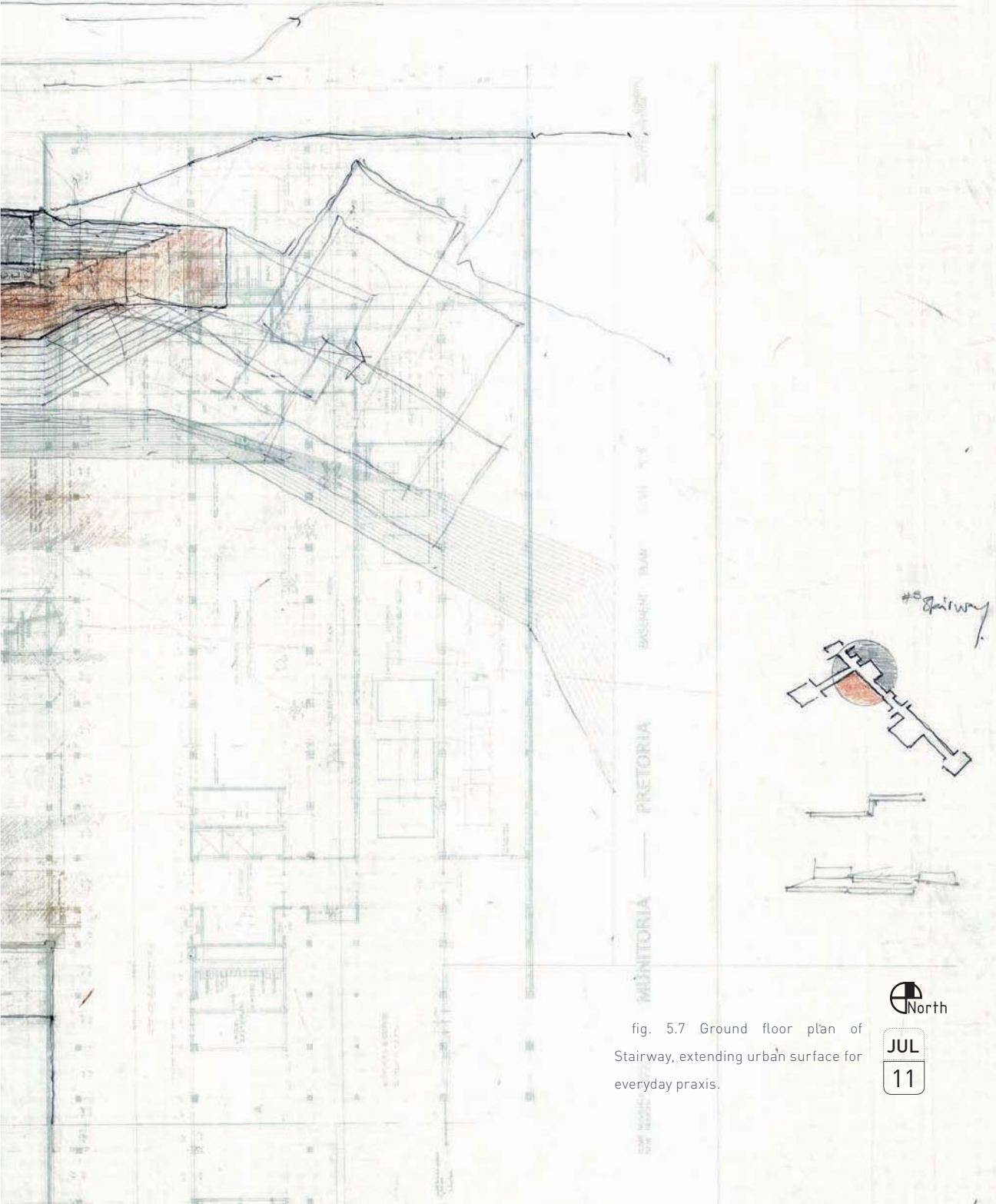
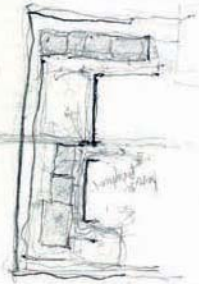


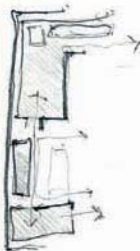
fig. 5.7 Ground floor plan of Stairway, extending urban surface for everyday praxis.



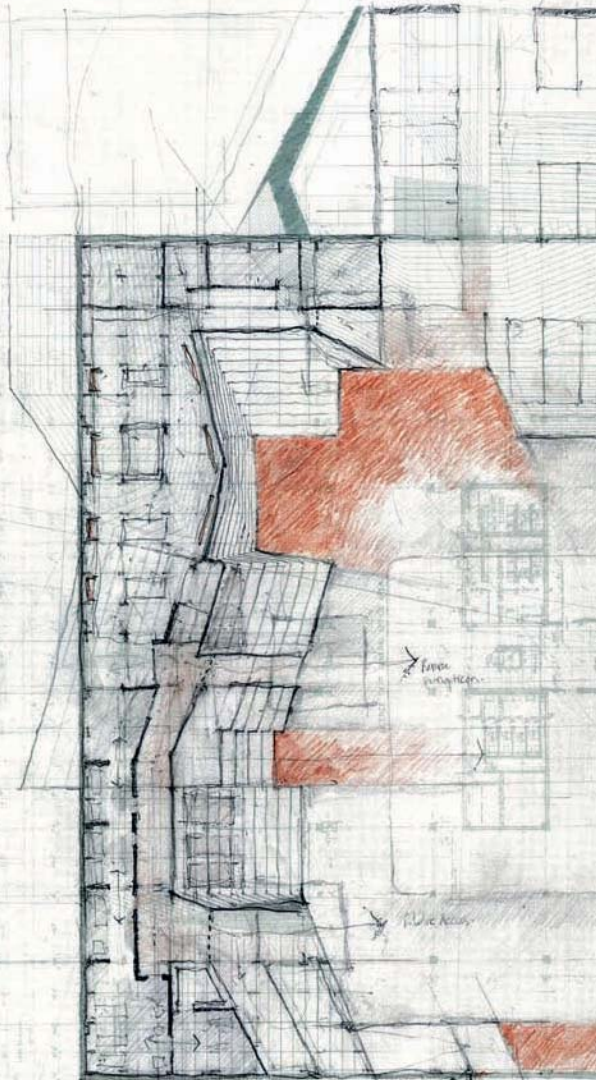
JUL  
11



- Switshane light switches.
- door
- false window / screen / false ceiling
- split access
- false information
- storage niches



- multi-directionality of space
- types of buildings
- private spaces
- overlapping activities
- thresholds
- boundaries



→ Area engineer

→ Public Area

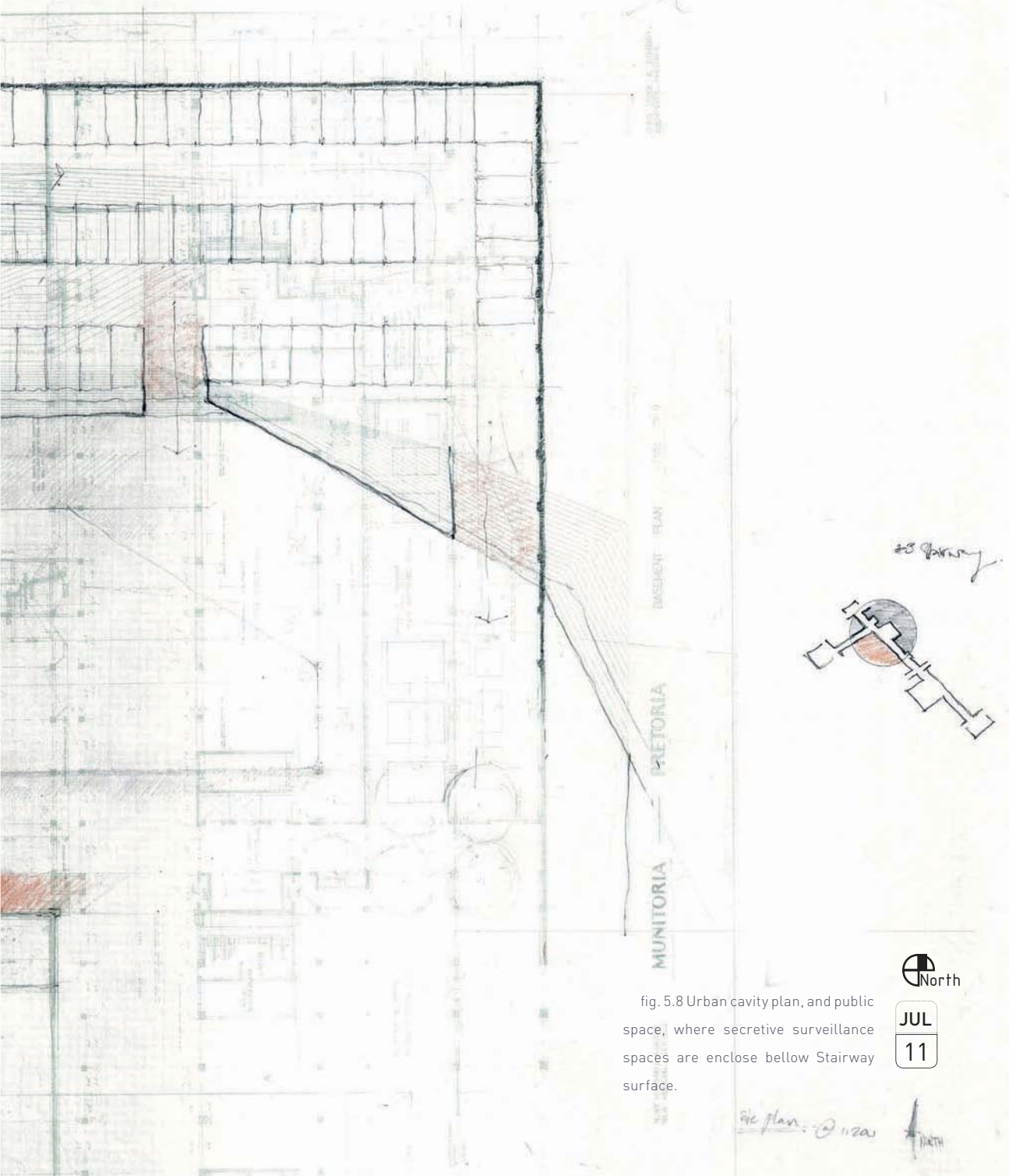


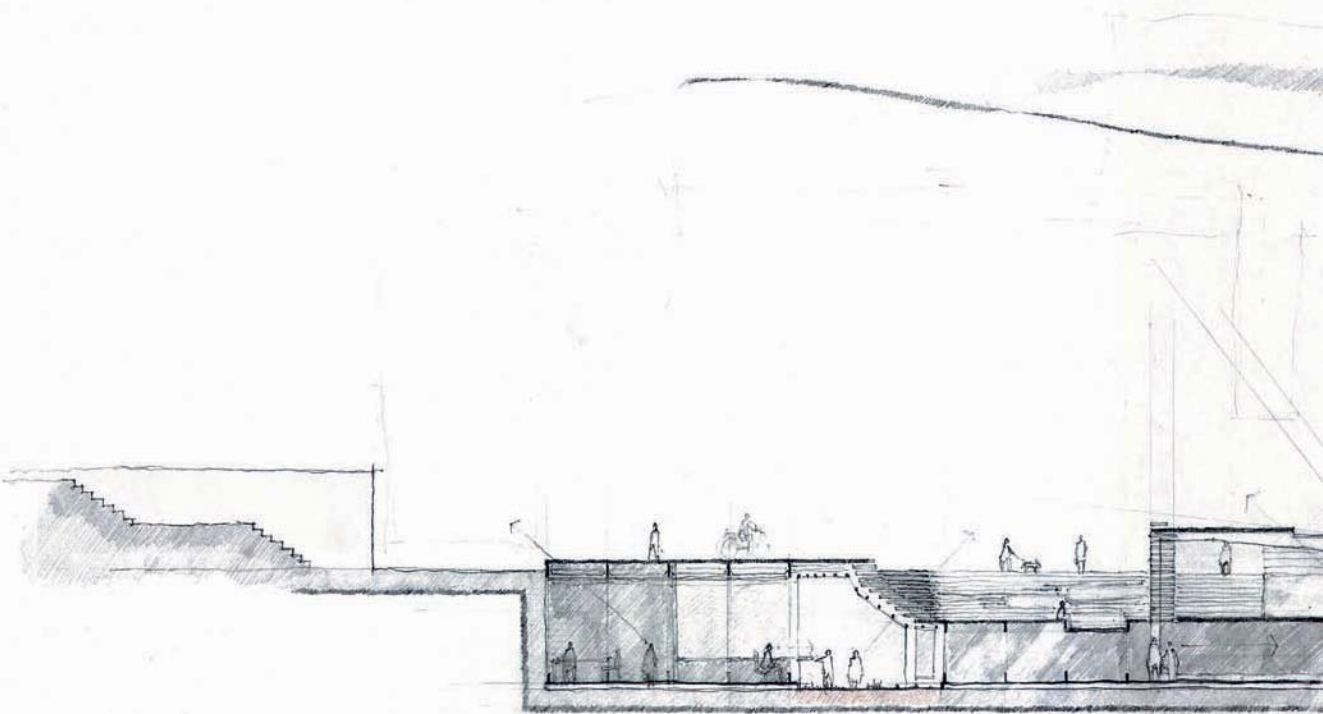
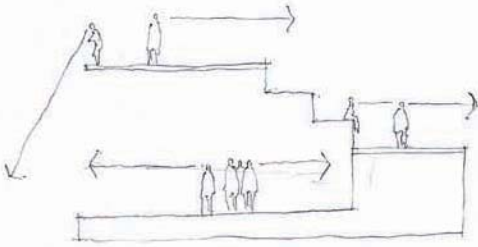
fig. 5.8 Urban cavity plan, and public space, where secretive surveillance spaces are enclosed below Stairway surface.



JUL  
11

fig. plan. @ 1:200





manforme ← - this bank.

Public Concourse -  
Interface

services/  
through here ...

section A-A @ 1:100

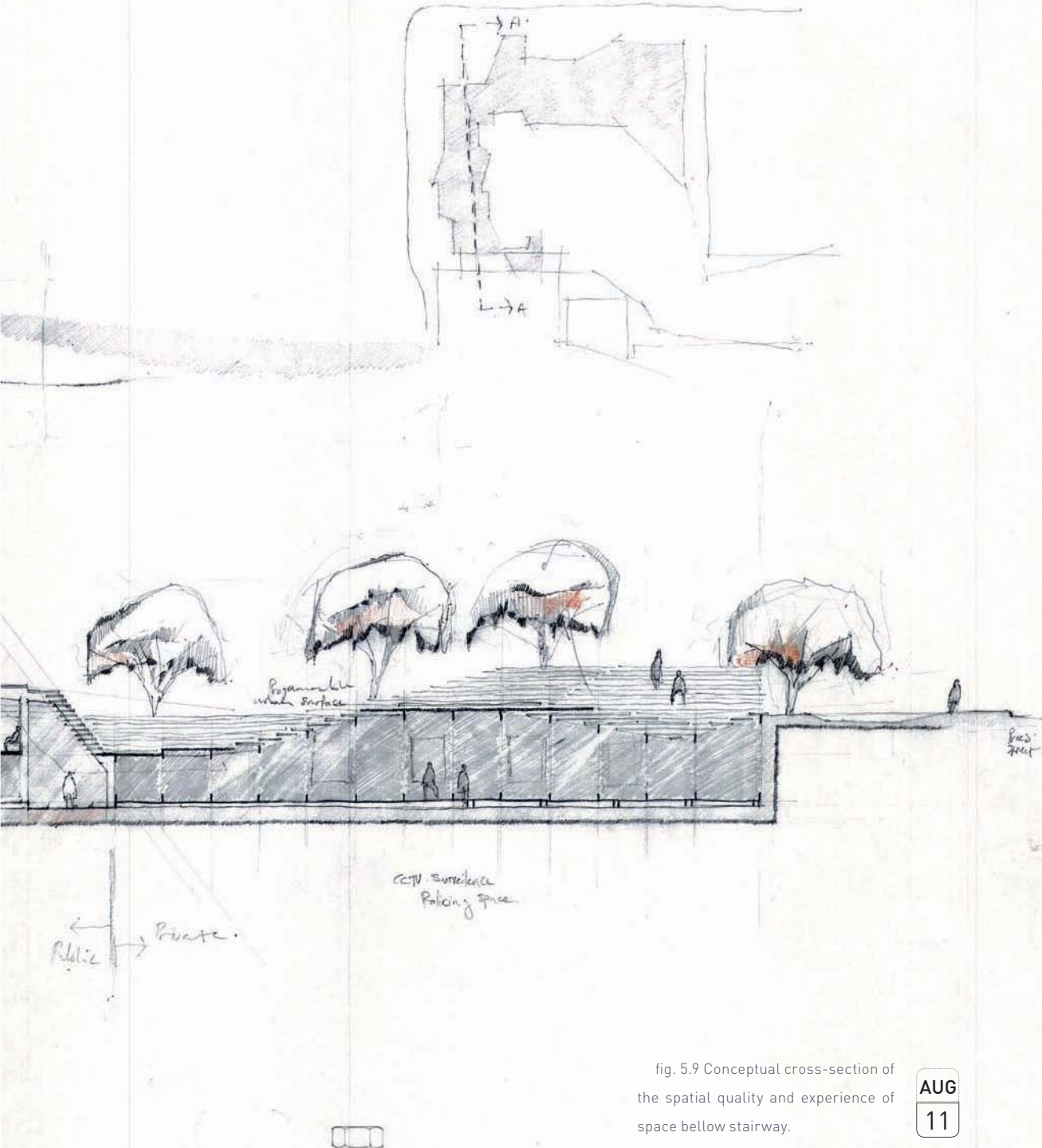


fig. 5.9 Conceptual cross-section of the spatial quality and experience of space below stairway.

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# Program

The concept of surveillance becomes the medium by which the spectacle of the everyday is viewed and celebrated. Accordingly, the stairway encloses a series of private and public spaces (fig. 5.10). The program of surveillance can be understood on two levels, public and private. On a public level, the stairway responds directly to the context by providing a multi-directional inhabitable urban surface, with public infrastructures that enhance and celebrate the quotidian. Through a public interface of surveillance, an alternate platform for experiencing the city is provided; a form of 'augmented urbanism' (Bartle, 2007: 157). At the same time the surveyed spaces are made 'public' through the 'eyes on the street'.

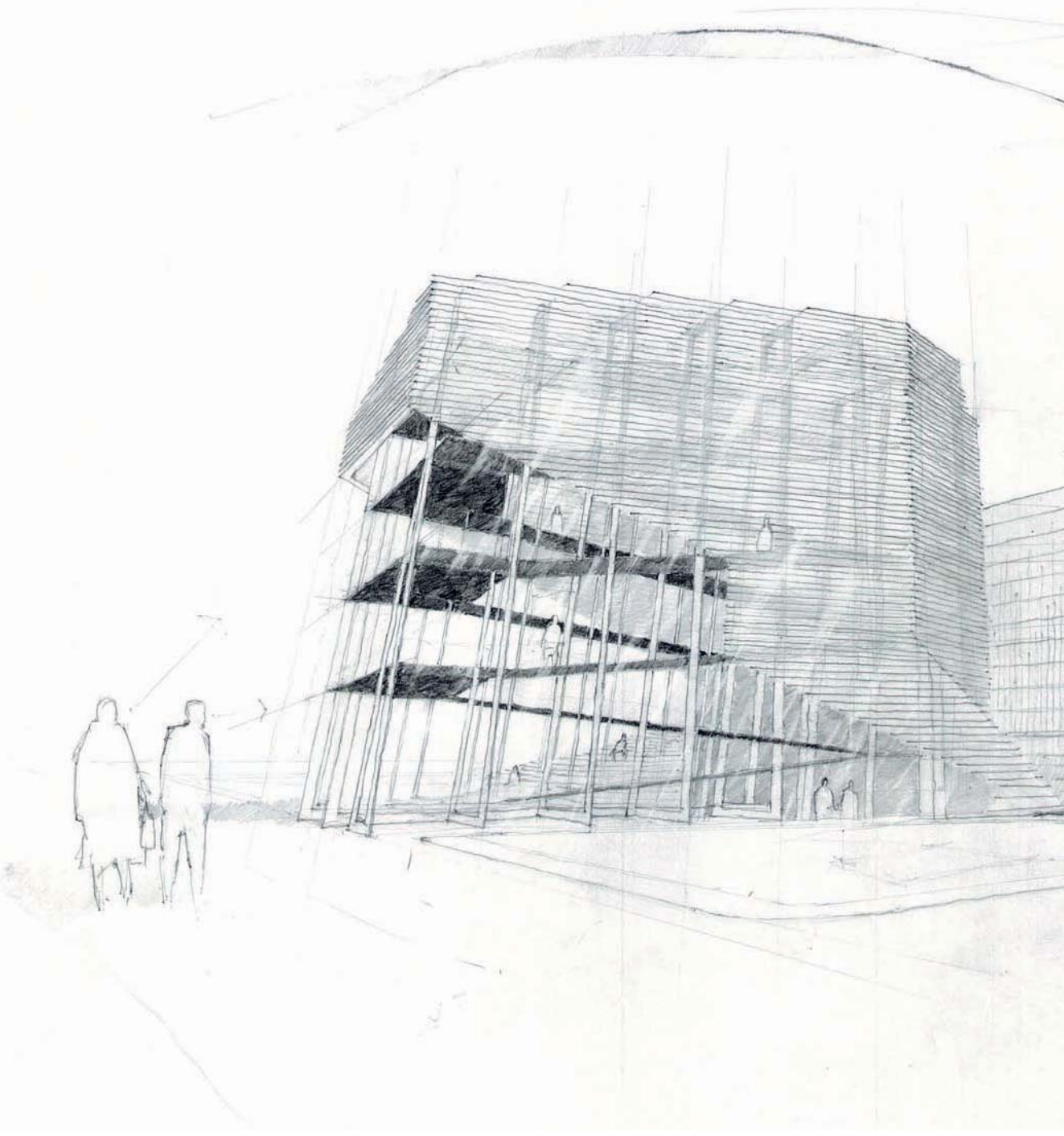
The Panopticon is a type of building designed by English philosopher and social theorist Jeremy Bentham in the late eighteenth century. The concept of the design is to allow an observer to observe (-opticon) all (pan-) inmates of an institution without them being able to tell whether or not they are being watched.

While on a private level the spaces below the stairway, which are perceived as 'secretive' spaces, are occupied by the city's closed-circuit television cameras surveillance control centre, where the city is surveyed on a detailed level. The concept of Jeremy Bentham's (1995: 30) "Panopticon" is challenged (*see left note*), as the architecture exposes threads of the 'private' narrative to the public. In turn the public interface of the surveillance forms a typology of a 'participatory panopticon' as it has been experimented with in London (BLDGBLOG, 2006).



fig. 5.10 Concept model of #3 Stairway





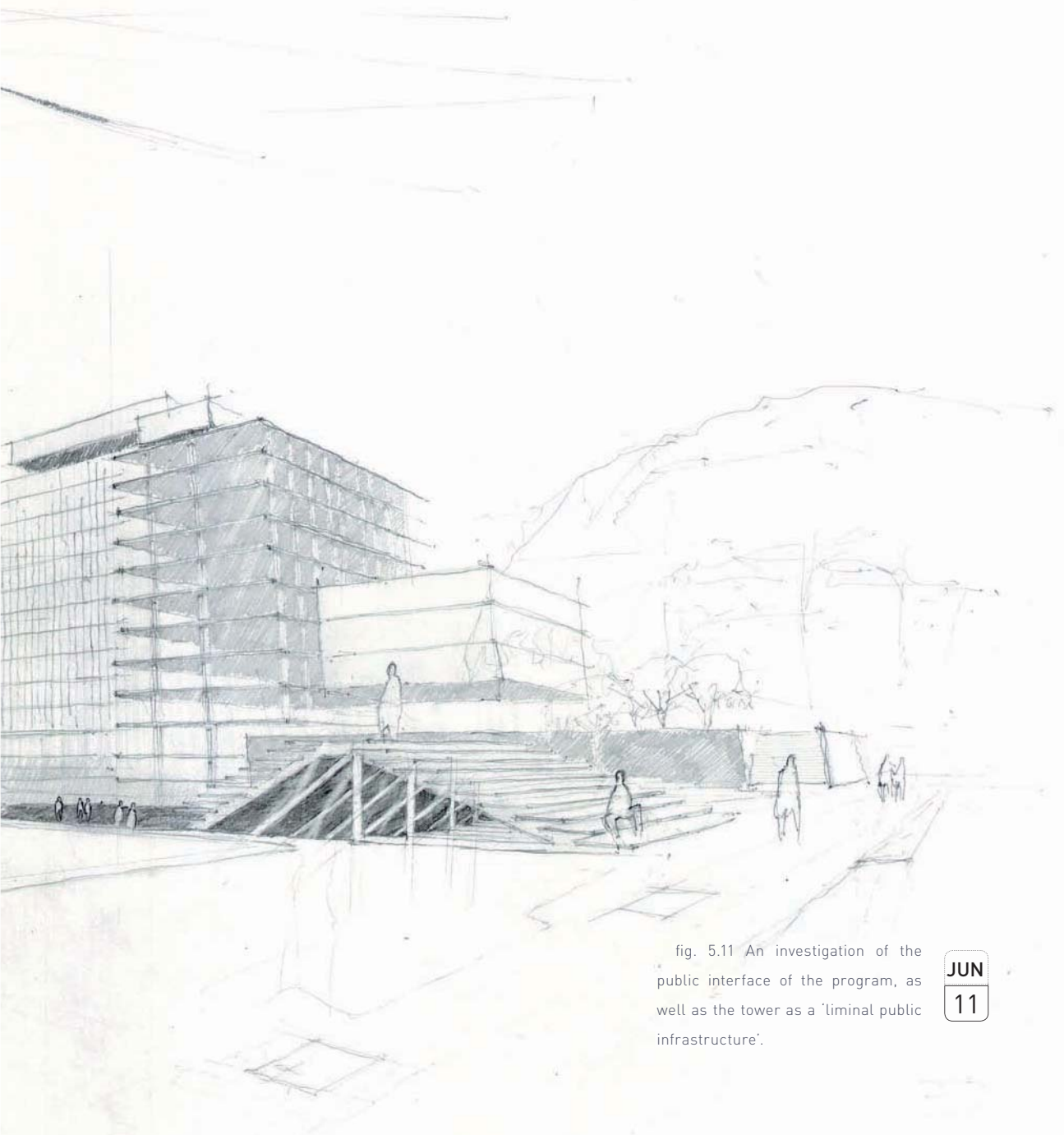
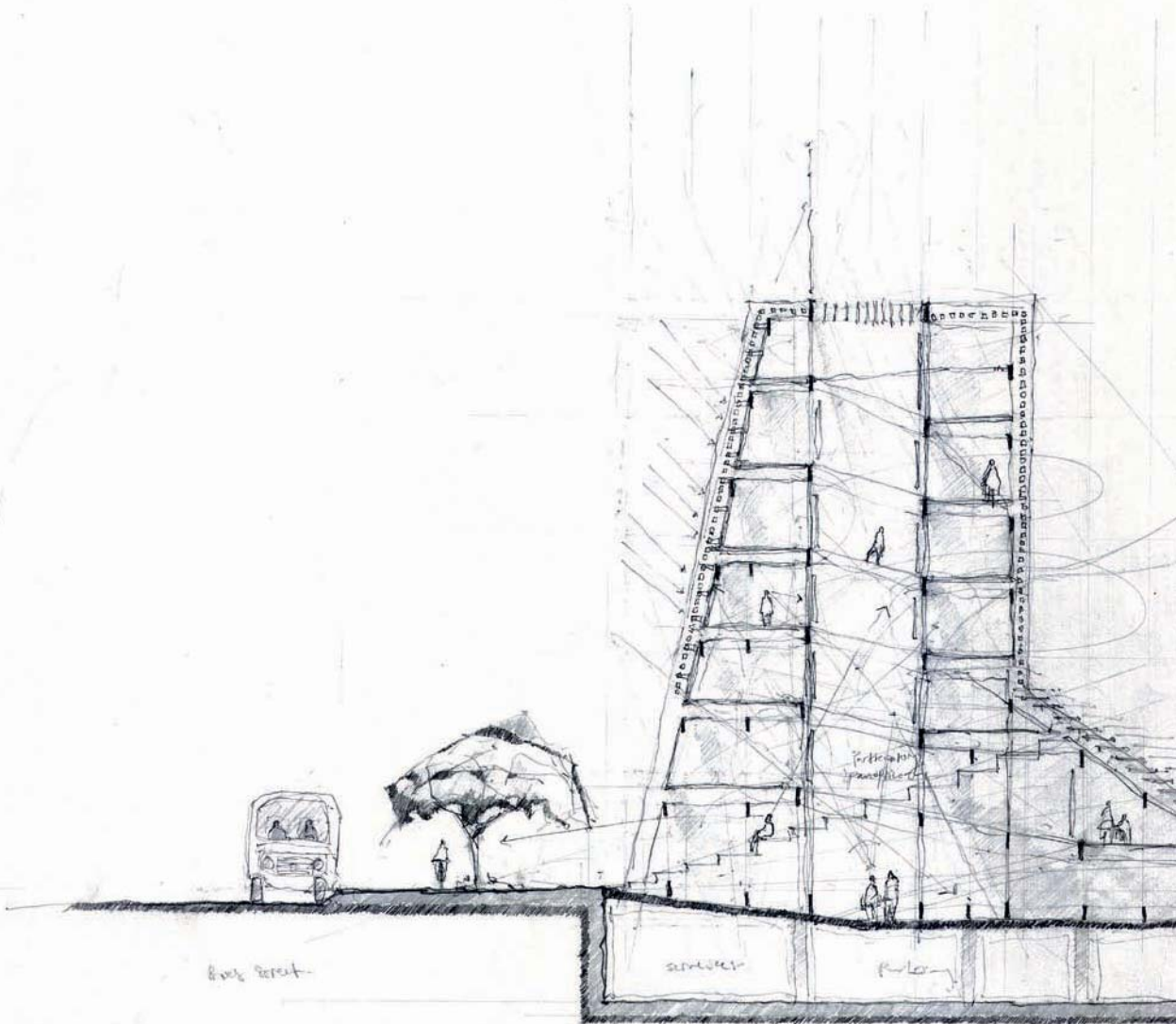
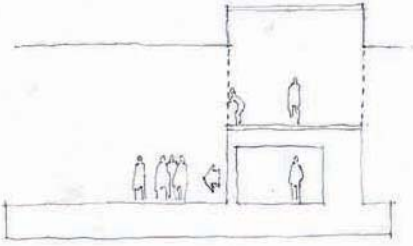


fig. 5.11 An investigation of the public interface of the program, as well as the tower as a 'liminal public infrastructure'.



Section B-B @1:100

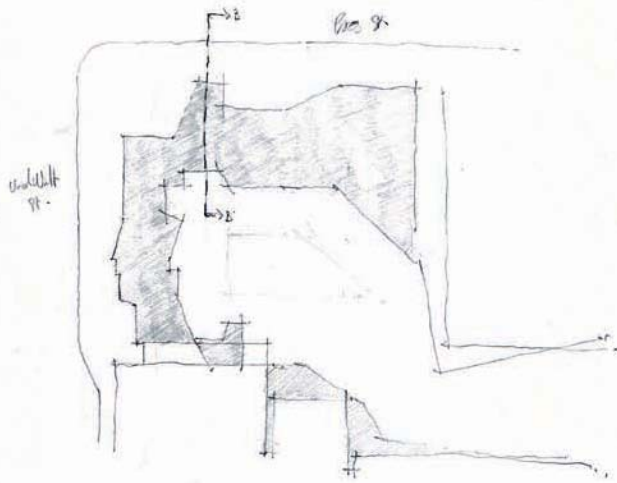


fig. 5.12 Conceptual section of the tower as liminal public infrastructure, creating connections to everyday context.

Meanwhile this intensive video surveillance is then filtered and carried over to the neighbouring digital arts pavilion, where artists can re-interpret the data and use it to generate various art forms. The stairway and its adjacent infrastructures thus become an interplay between public and private, viewer and performer... which challenges the 'panopticon' model, allowing for the exposure of the quotidian. At the same time the relationship between the stairway and the neighbouring digital arts pavilion (design by L. Kruger, 2011; fig. 5.13) animates the urban cavity, allowing for a multiplicity of activities and events (Fig. 5.14).

*L. Kruger Project summary:*

*The project focuses on architecture in the information age. Information technology is evolving at an alarming rate, which opens up a vast landscape of possibilities within the architectural realm. These possibilities are discussed and implemented into an architectural intervention, with a specific focus on the relationship between the real and the virtual.*

*A digital art pavilion is proposed on the corner of Proes and Van der Walt Street in Pretoria CBD, where the Muntoria Complex is currently situated.*

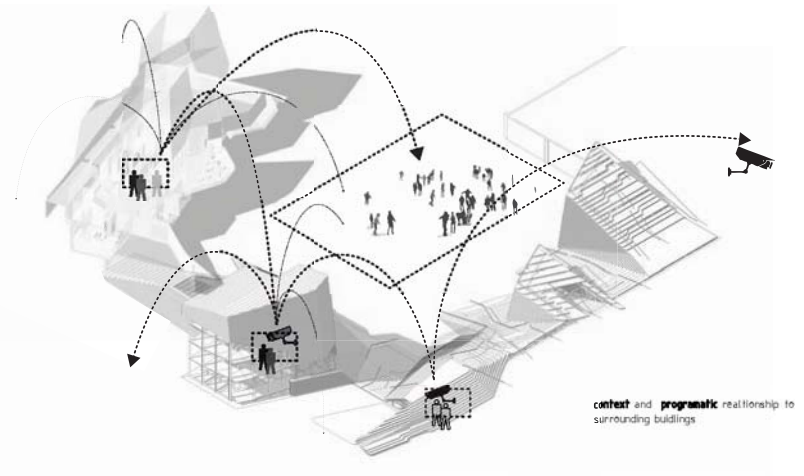


fig. 5.13 Relationship between Stairway and neighbouring Digital arts pavilion

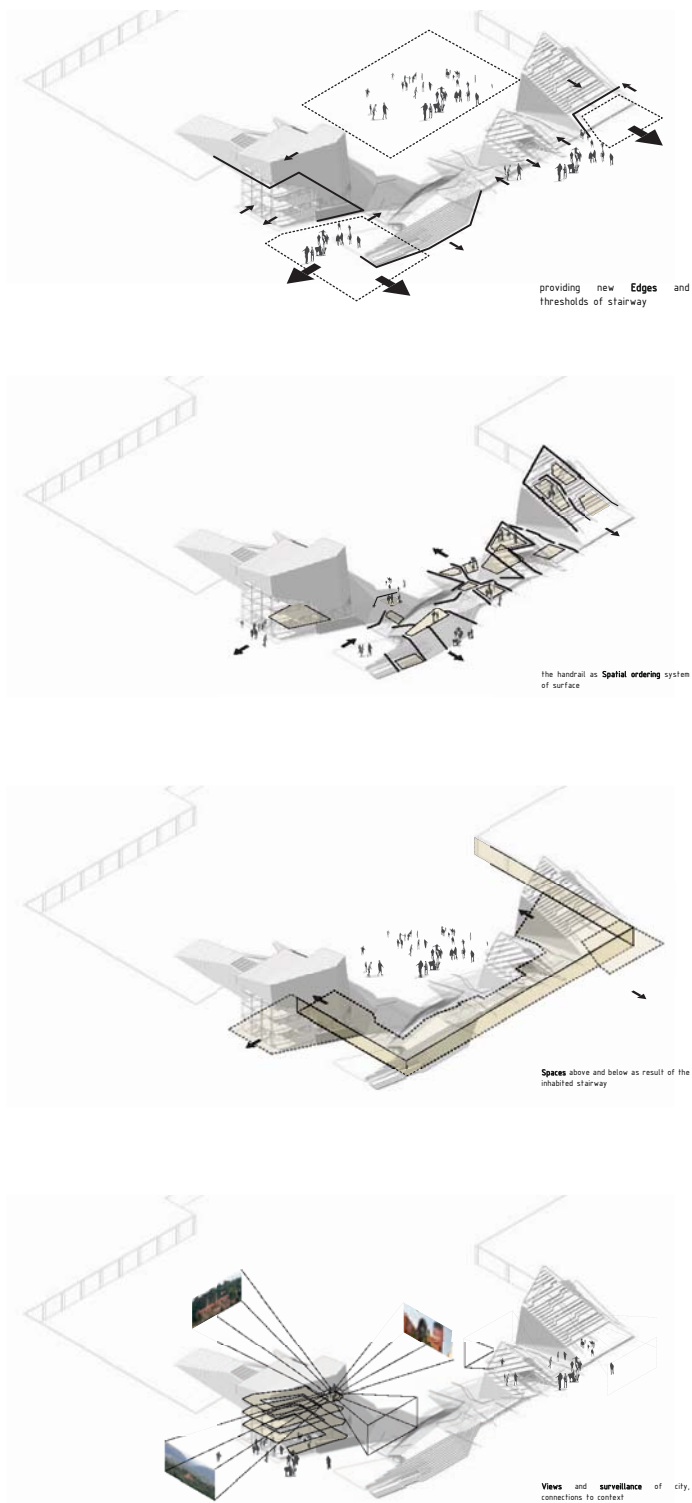


fig. 5.14 Architectural response of Stairway to quotidian context.

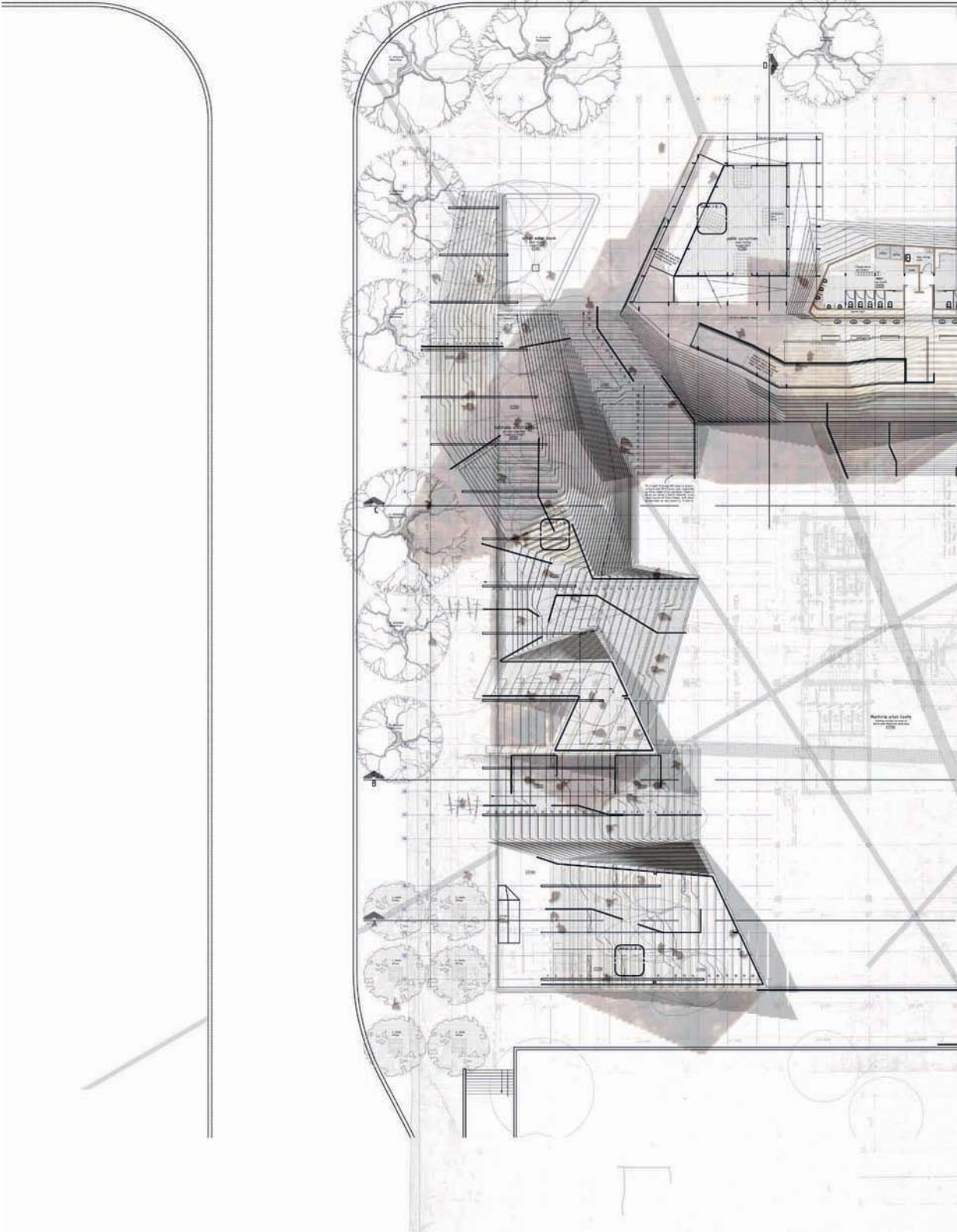
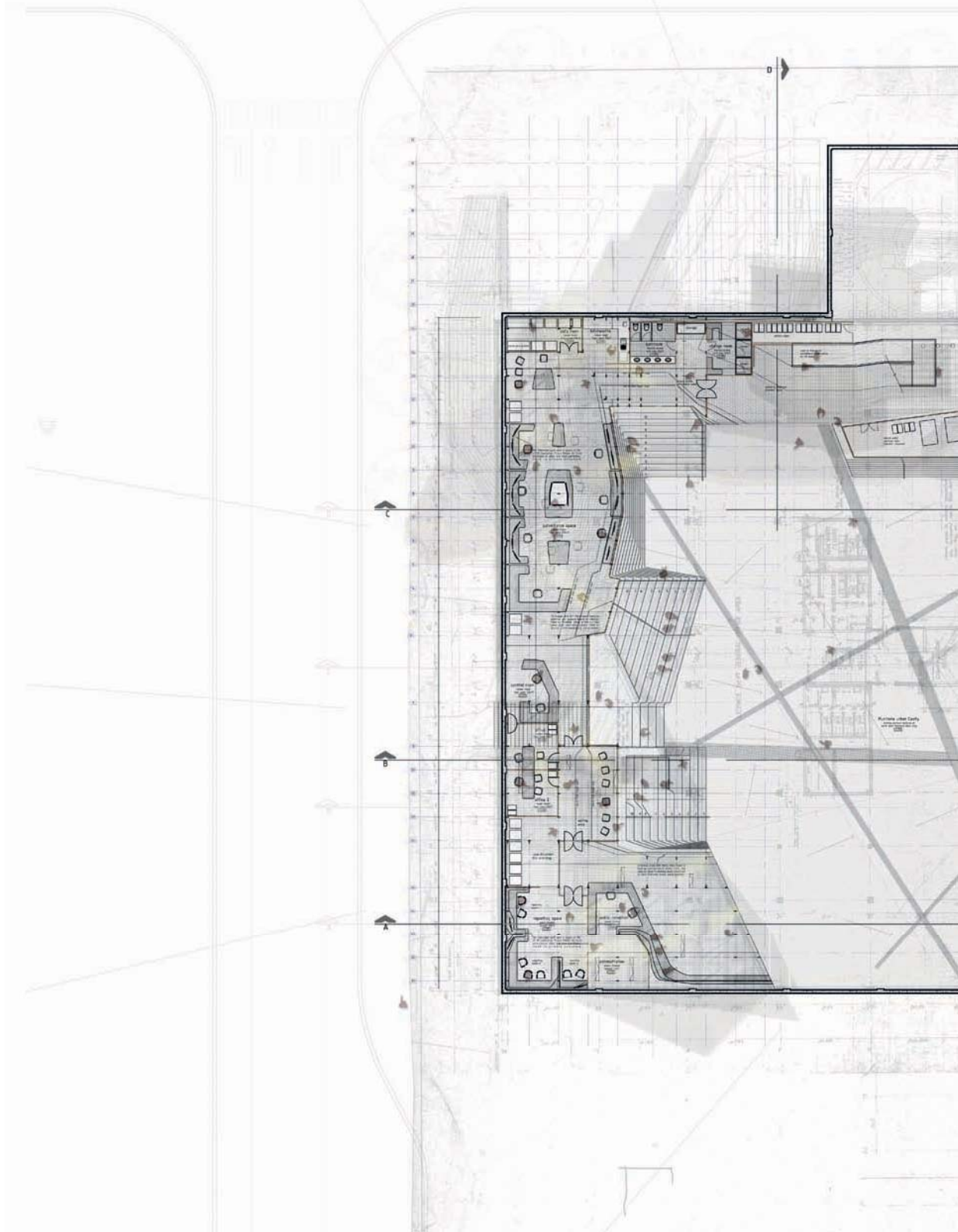




fig. 5.15 Ground floor plan of Stairway within Munitoria cavity, showing tower and other public infrastructures (Public Ablutions)



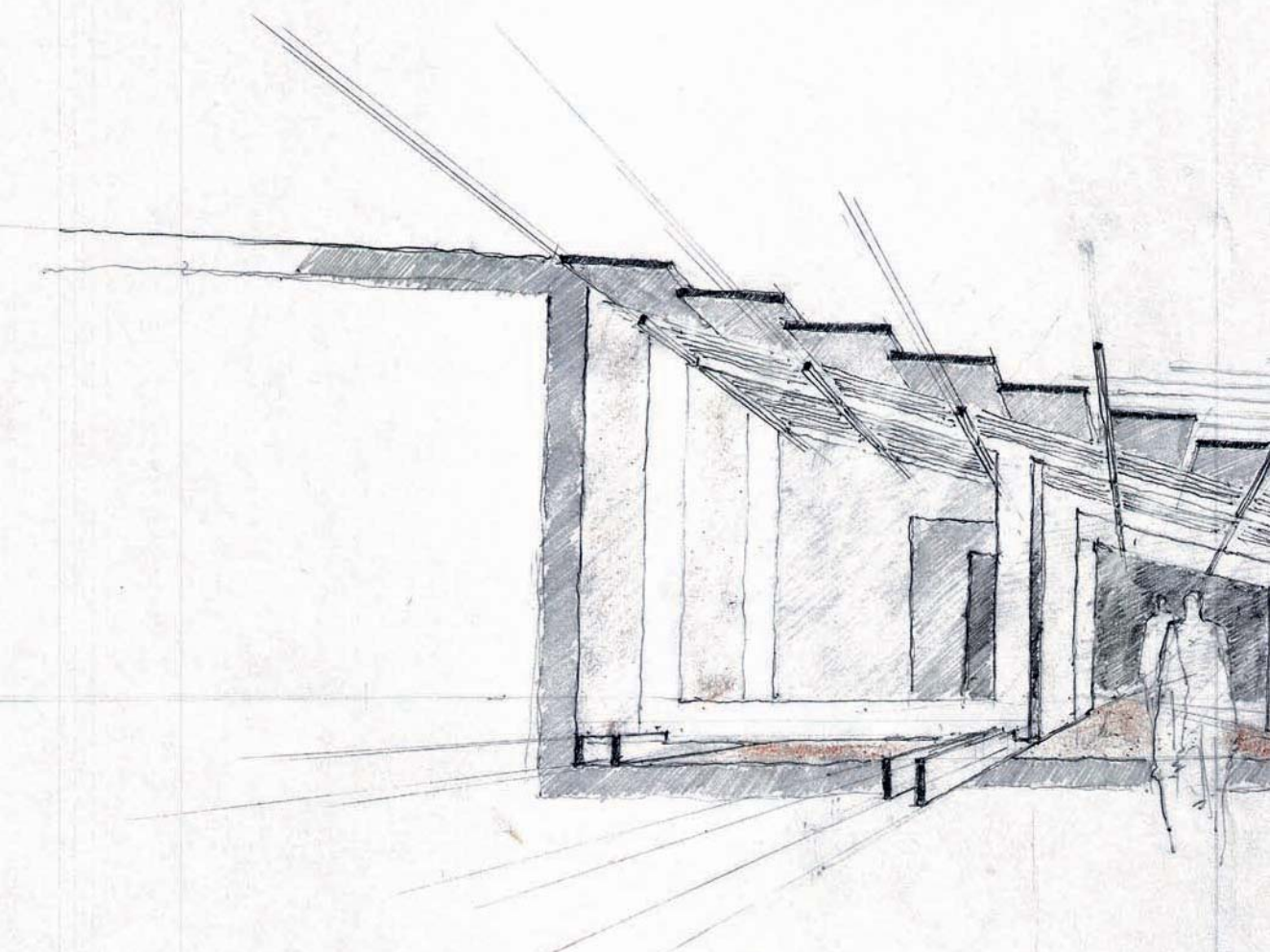




Architect: Urban Craft  
© 2010 Urban Craft



fig. 5.16 Basement plan of the Stairway, showing interior spaces below, of surveillance control space (public and private), as well as surface textures of the urban cavity.

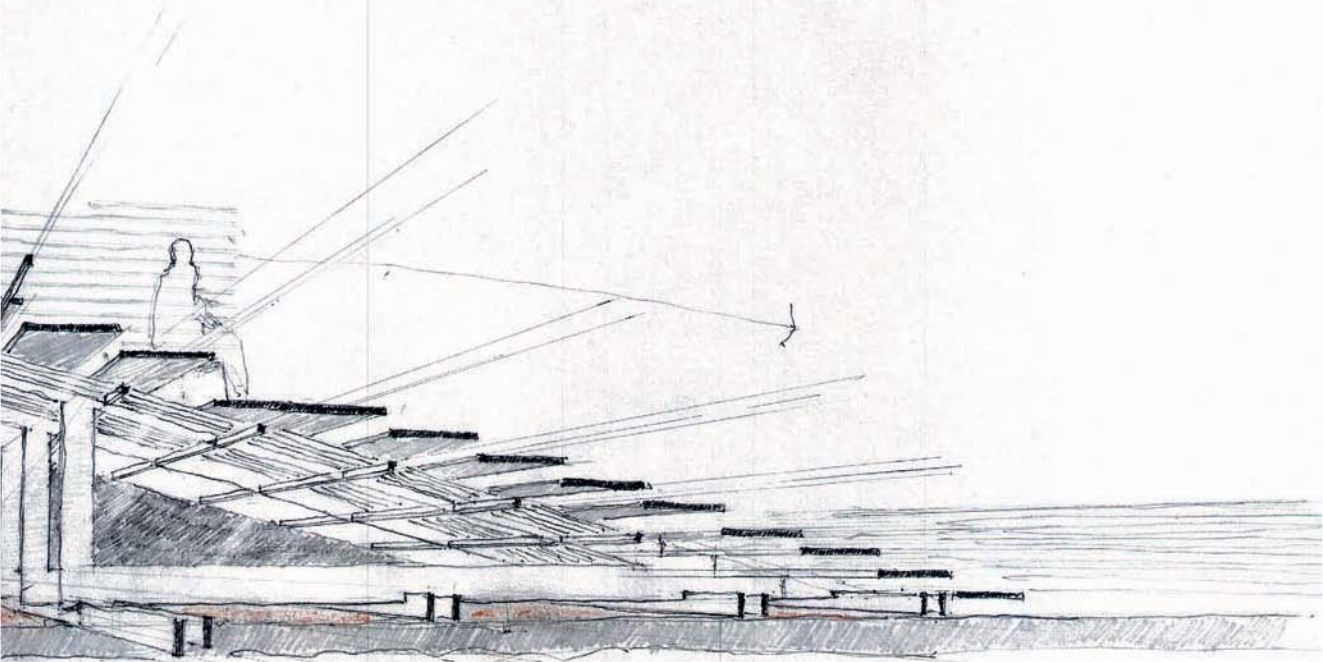


encouraging  
space

public  
walkway

Section C-C. rts.





space  
space

fig. 5.17 Conceptual exploration of tectonics and spatiality of spaces below Stairway.

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# Techné

Conceptually the building is comprised of 4 main components (fig. 5.18):

- 1) The existing **urban cavity**, where the architecture is to respect and celebrate the present everyday; as well as the burnt down of the Munitoria West Wing and its memory.
- 2) The **spaces** created both above and below the stairway, coupled with the surveillance programs that are accommodated therein.
- 3) A primary timber (Pine ThermoWood) support **structure** responding to both the urban cavity and the street; providing the inhabitable stairway.
- 4) The **surface** or stairs, which is an extension of the urban surface, stitching the urban cavity back to the city.

The stairway's tectonics' are designed at a humane scale, allowing for a haptic and positive experiential interaction with the architecture. The choice of materials thus responds to the existing urban cavity and the experiential qualities of the urban context. The following section will expand on the spatiality and tectonics of the architecture, in relation to the **space**, **structure** and **surface** (the urban cavity has been previously discussed on page 68):

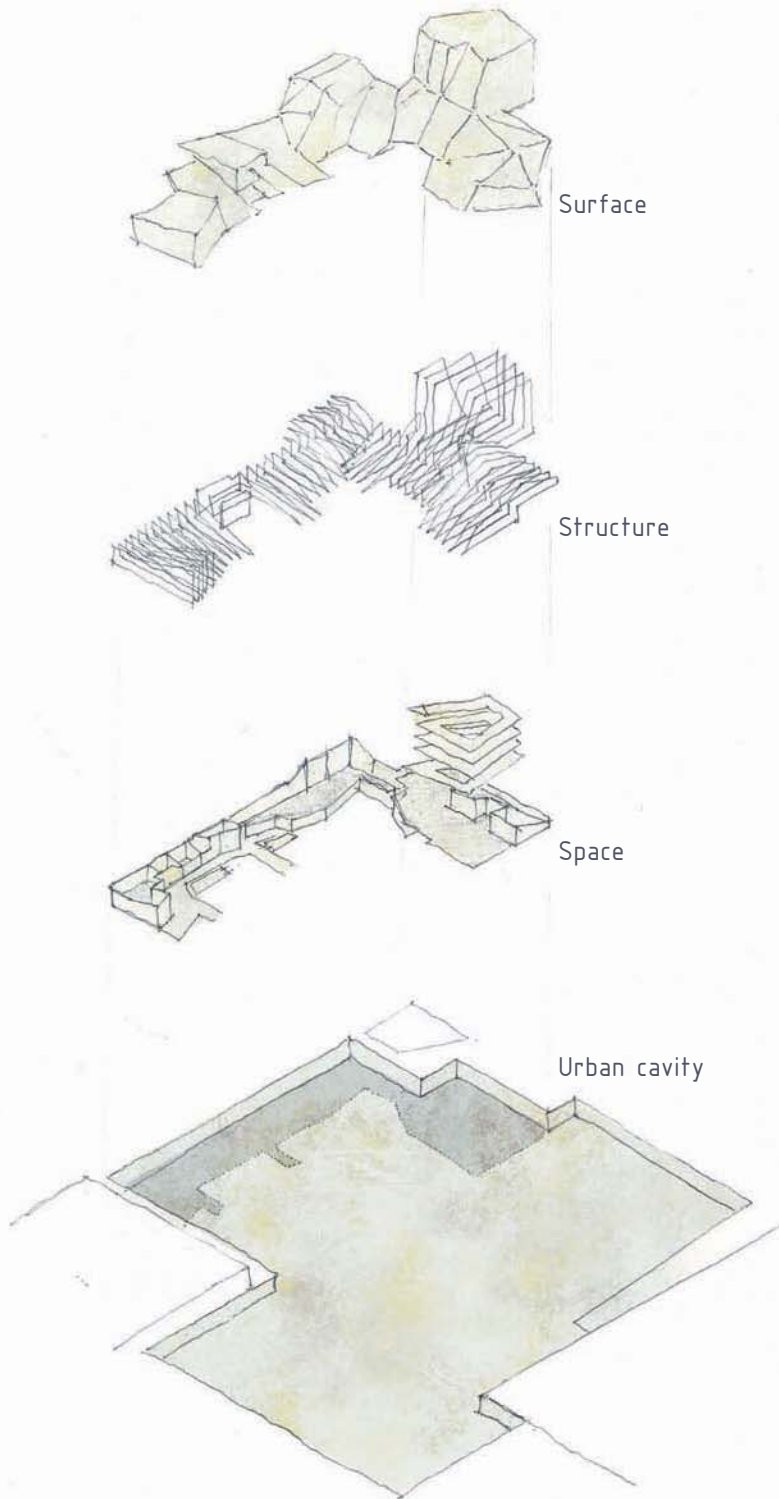


fig. 5.18 Concept of #3 Stairway [July 2011]

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# Space

The stairway encloses various forms of spaces, both private and public; above and below ground spaces. These spaces respond to the previously described urban cavity at the site of the burnt down West wing of Munitoria. The Stairway reciprocates the existing urban context, allowing for the public inhabitation of the stair surface, which is folded to provide edges and surfaces allowing the structure's inhabitation of everyday performances (fig. 5.19).

The concept of surveillance is used to experience the spectacle of the everyday performances of the urban environment. The building will accommodate a control centre for the existing and network of closed-circuit television cameras throughout the CBD. This venture is said to reduce crime by 80% through 'aggressive surveillance' (Sensormatic, 2010). The interventions is to be financed by the City Council of Tshwane, working with private bodies such as Sensormatic SA (Pty) Ltd. for the installation and maintenance of such equipment. This control centre requires a certain level of privacy and security in aspects of access and function, where the perceived spaces below the stairway can accommodate these aspects of the 'secretive' program. The paradoxical cross-programming such a private program within a public space sector of the city can thus lend itself to an interesting architectural typology, as stressed by Tschumi (1994: 173).

In turn the public is made aware of itself, through an augmented relationship with the city. The stairway thus becomes the platform to experience of this spectacle, allowing for the inhabitation of the everyday within a liminal public architecture.

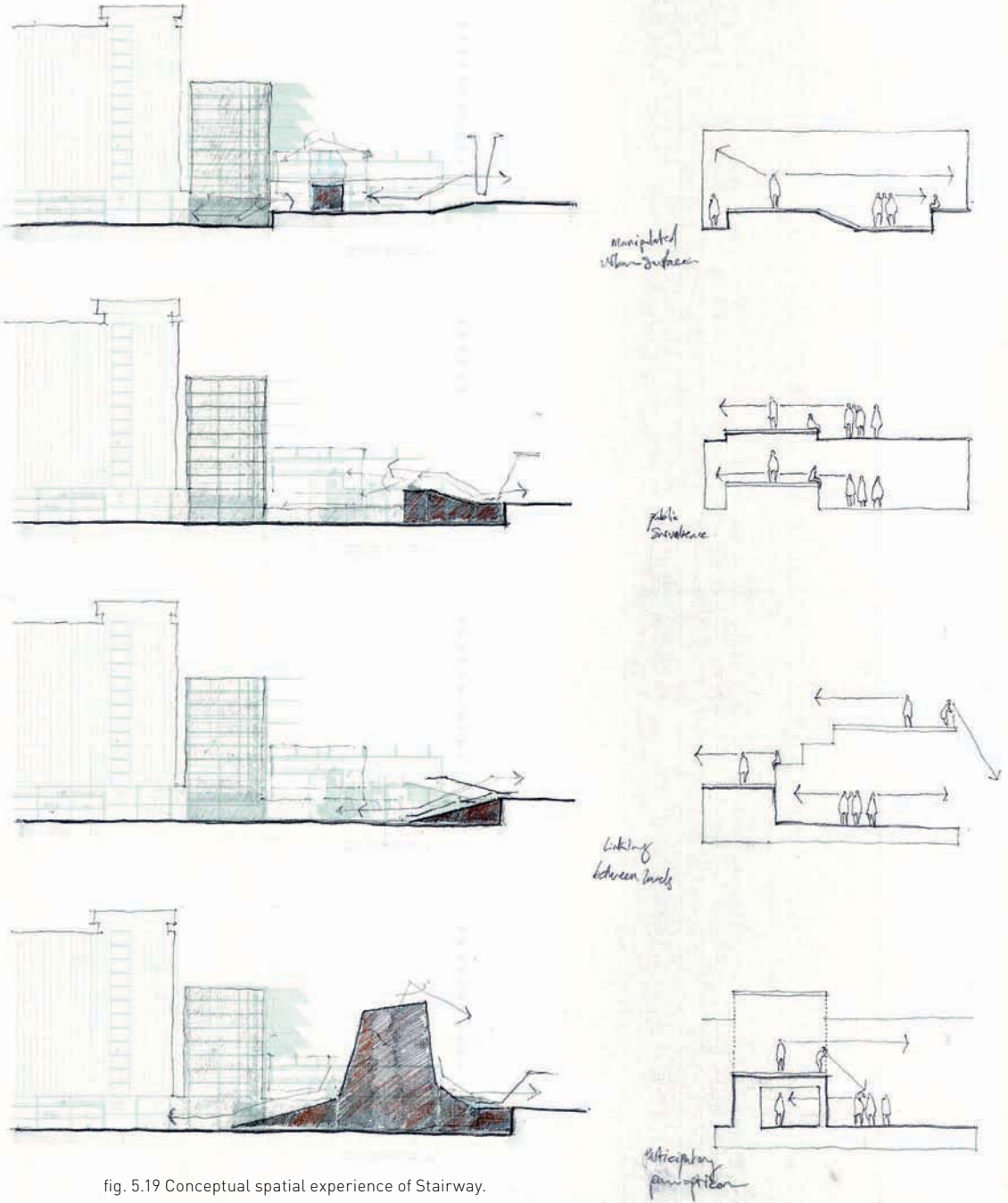
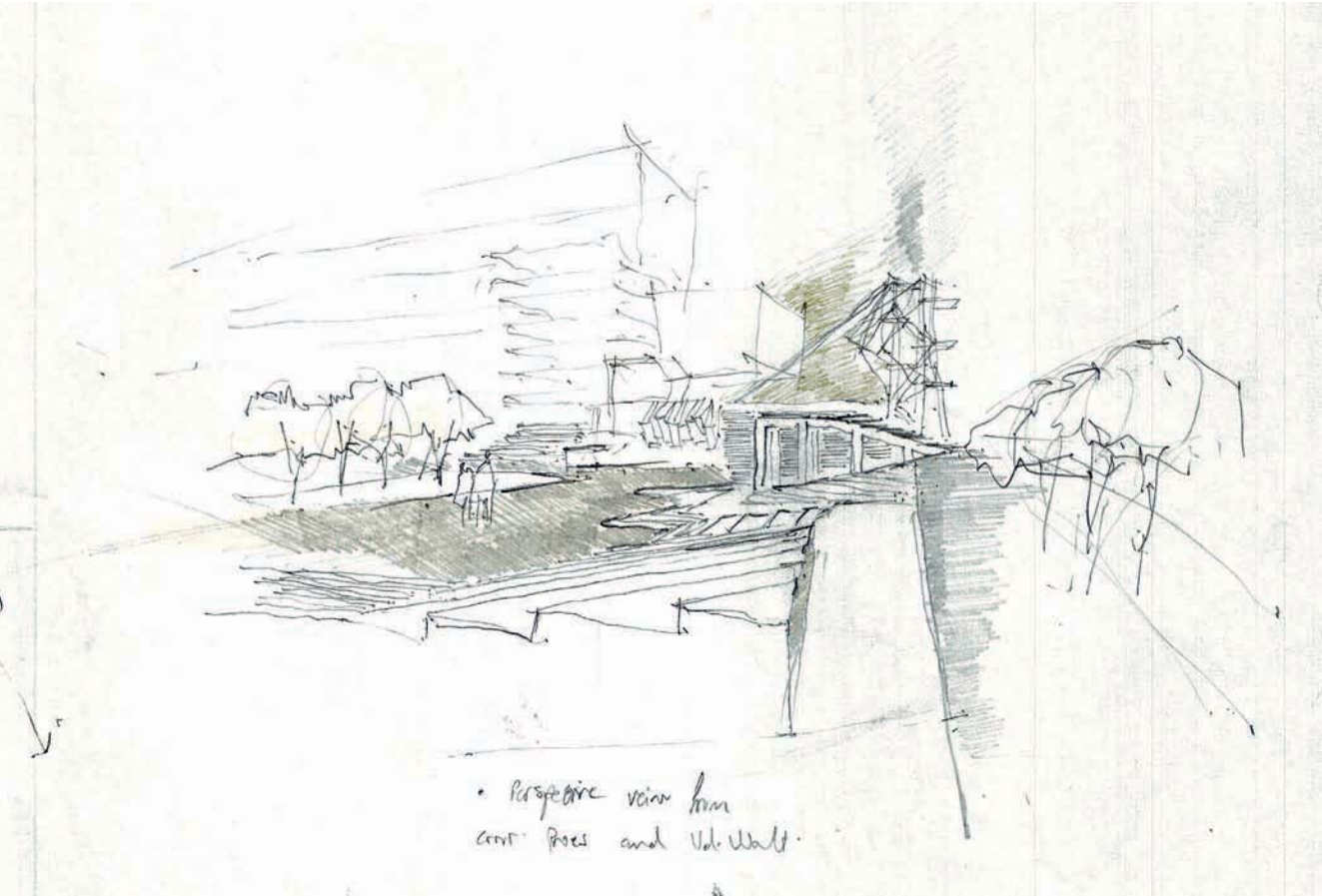


fig. 5.19 Conceptual spatial experience of Stairway.





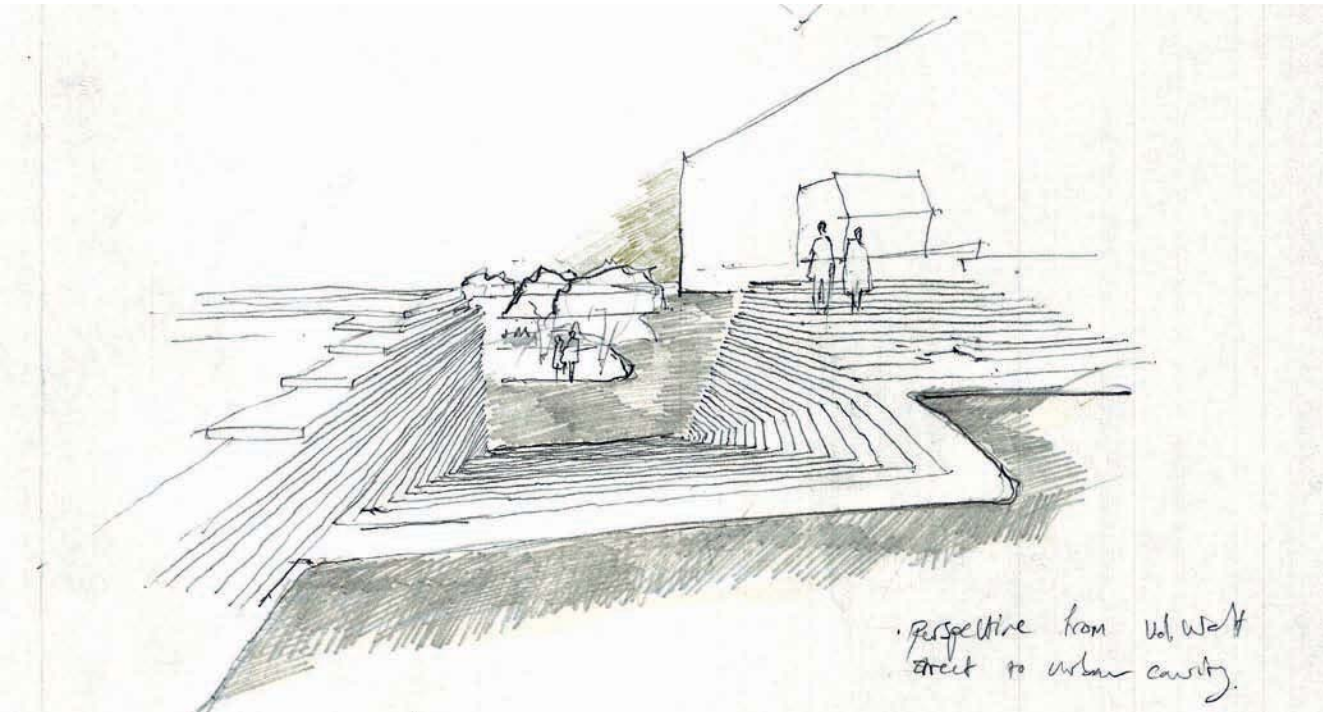
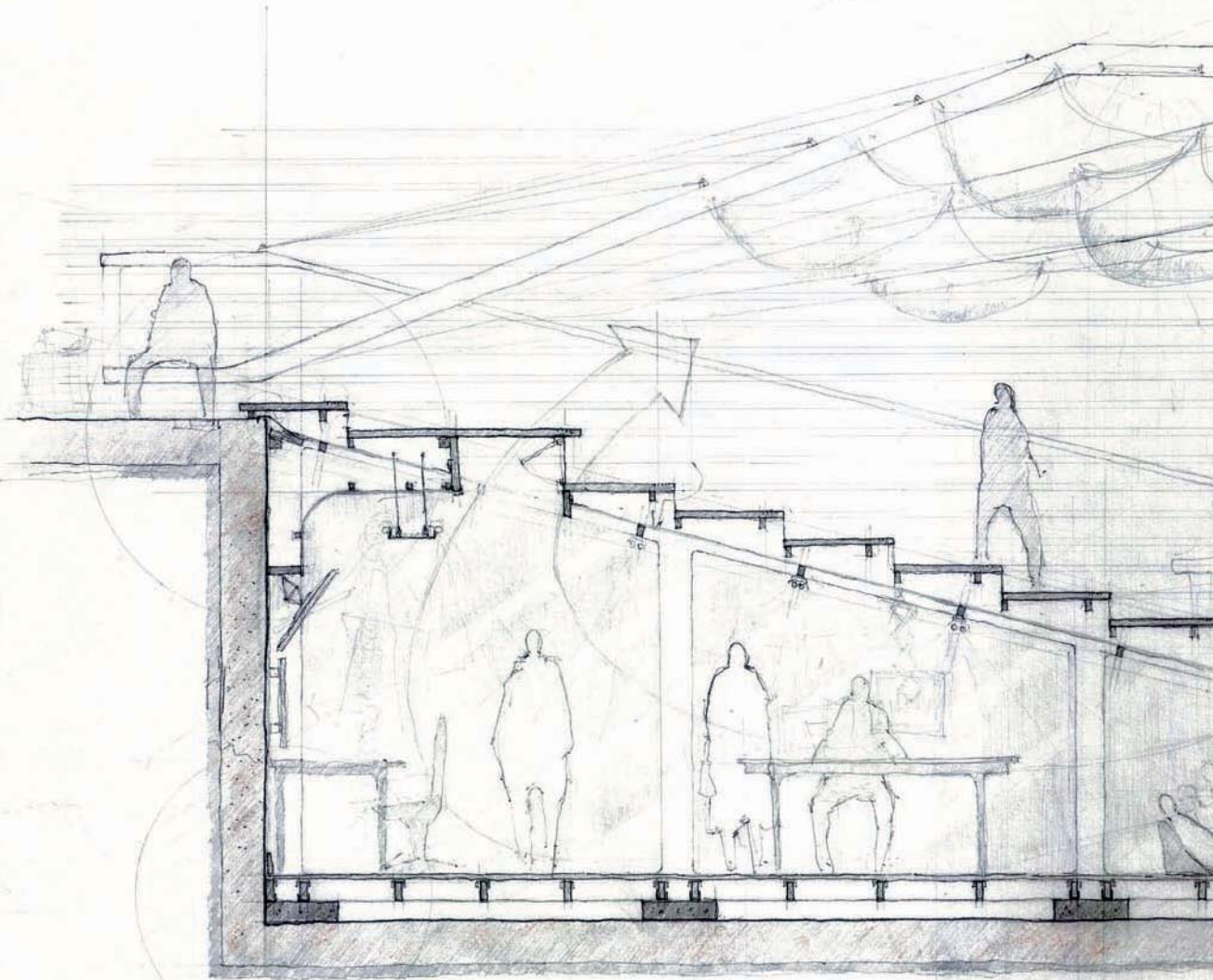


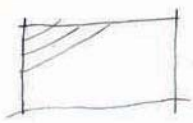
fig. 5.20-21 An investigation of the spatial qualities of the urban surface.



← Street  
space (at 4m)

Work  
space

Access  
space



typical section 1:20

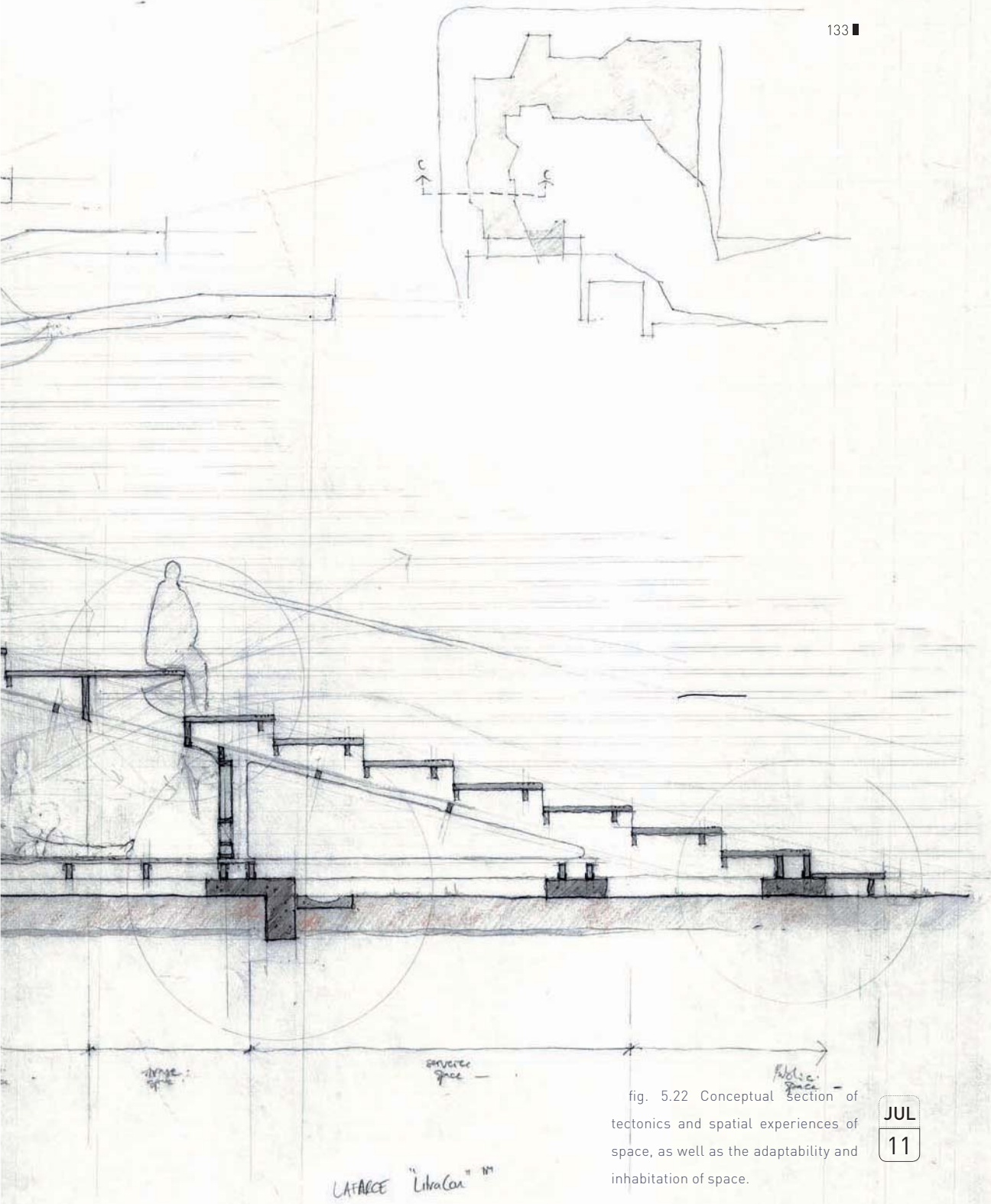
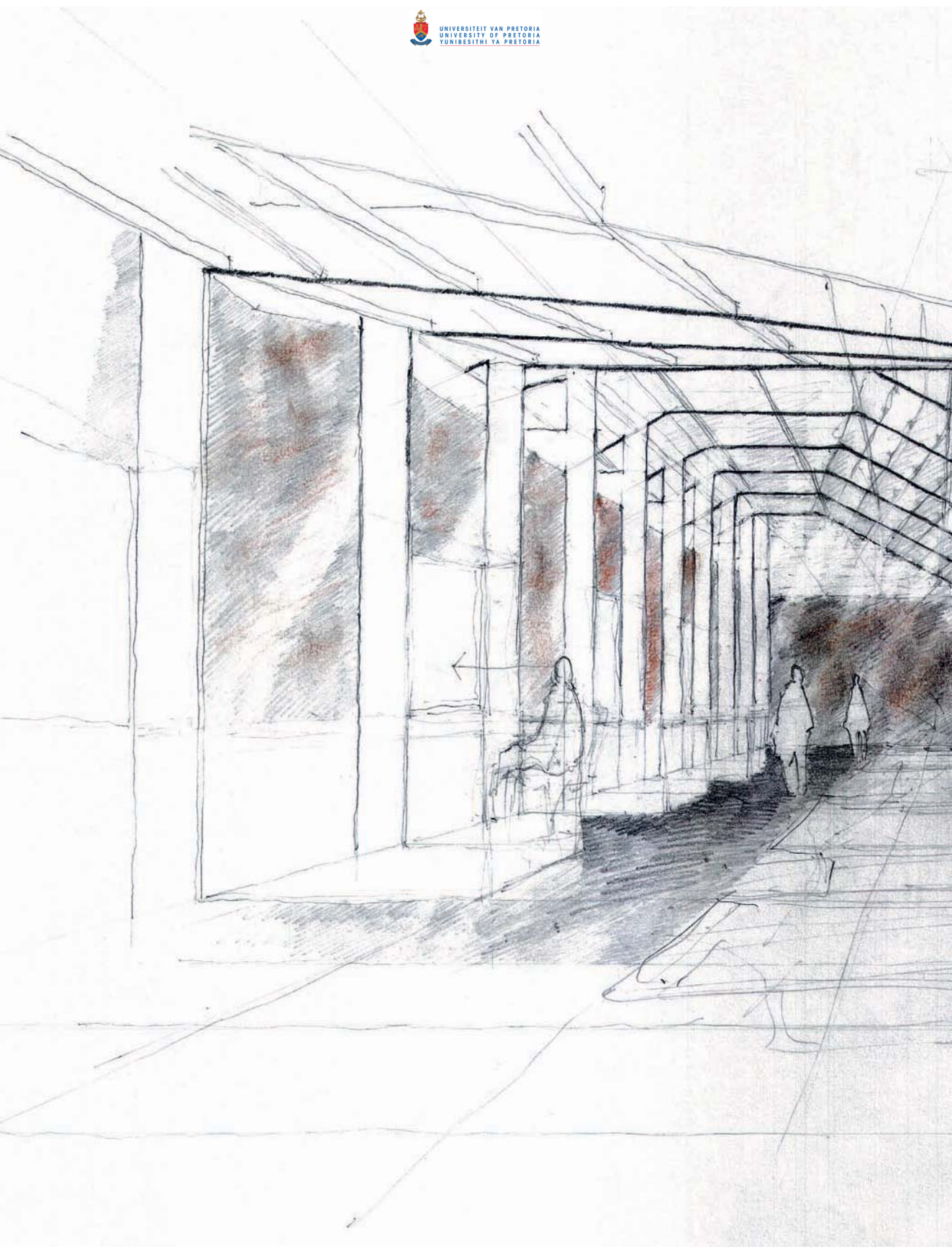


fig. 5.22 Conceptual section of tectonics and spatial experiences of space, as well as the adaptability and inhabitation of space.



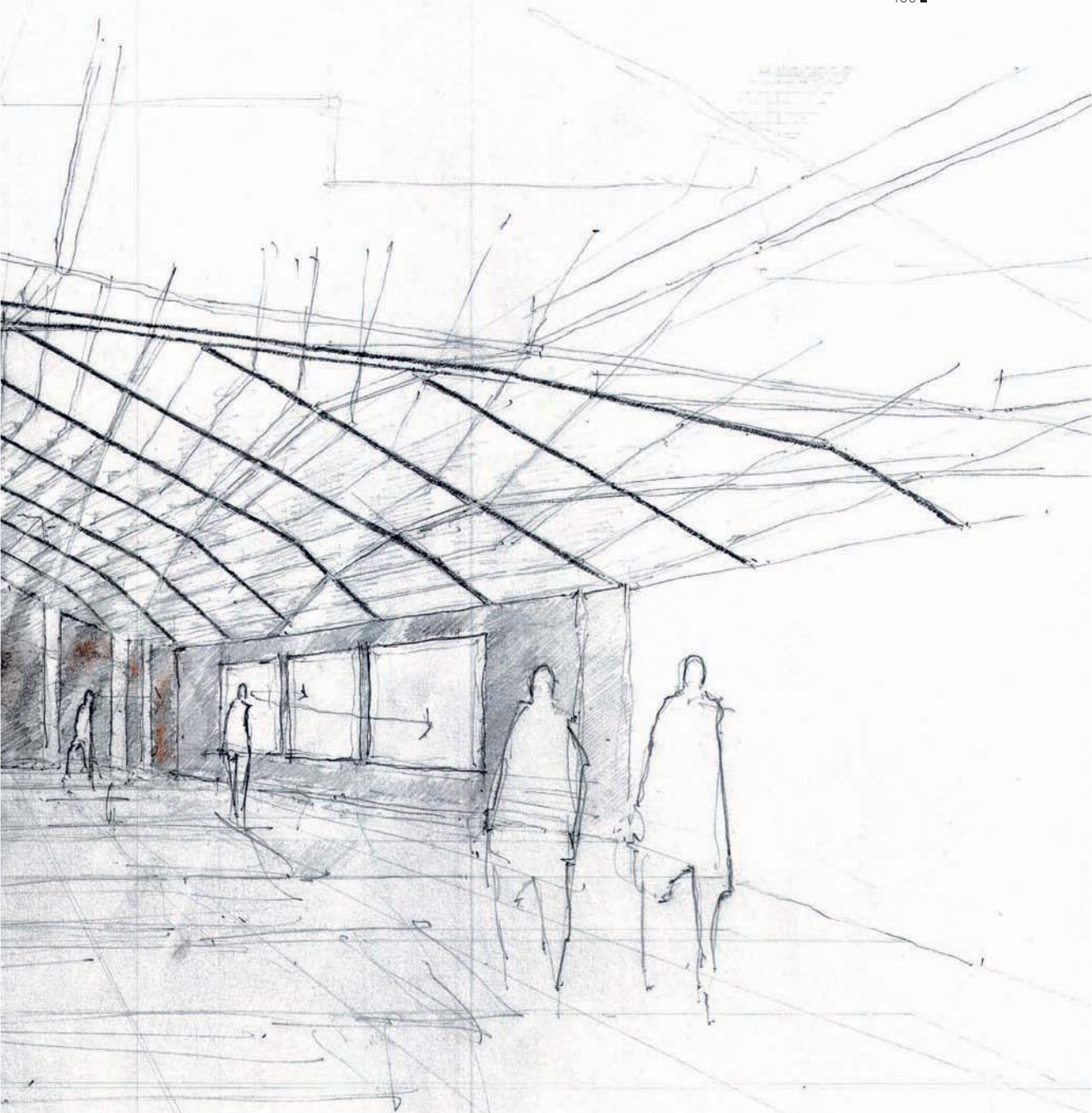


fig. 5.23 Secretive surveillance spaces below Stairway, where the urban surface above folds.

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# Structure

The structure of the Stairway is to be constructed of local Pine which has been thermally-treated. Timber is selected as a structural material as it responds to both the design and spatiality of the architecture, for the following reasons (ThermoWood, 2003: 18-42):

- 1) Wood presents a 'soft' tactile quality, responding to the everyday on a humane detail level.
- 2) Modulation and prefabrication of members, allowing for ease of construction and experimentation of form.
- 3) Considered as "new light" material, as it is a sustainably conscious renewable material.
- 4) Timber construction is a lightweight building typology, suitable for the infill of the existing Munitoria basement.
- 5) Wood is used to highlight and express elements of the design.

The primary support structure consists of prefabricated CNC timber members (fig. 5.24). The thermally treated soft-wood (local Pine) gains the characteristics of a hardwood, giving it greater resistance to weather fluctuations (ThermoWood, 2003: 20). The primary structure is segmented into smaller members to be assembled on site, and reduce wastage during fabrication.

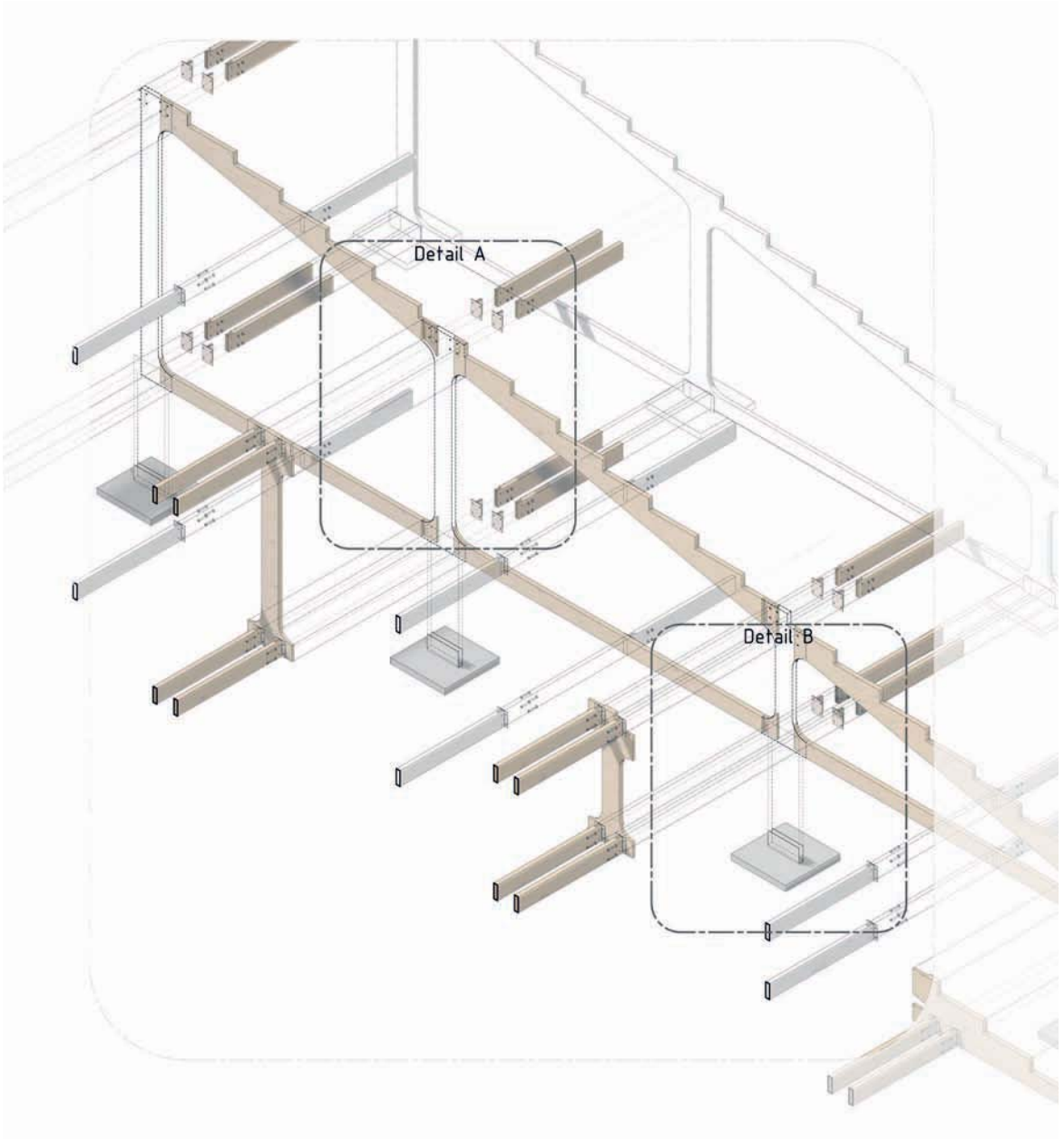


fig. 5.24 Structural exploration of Stairway



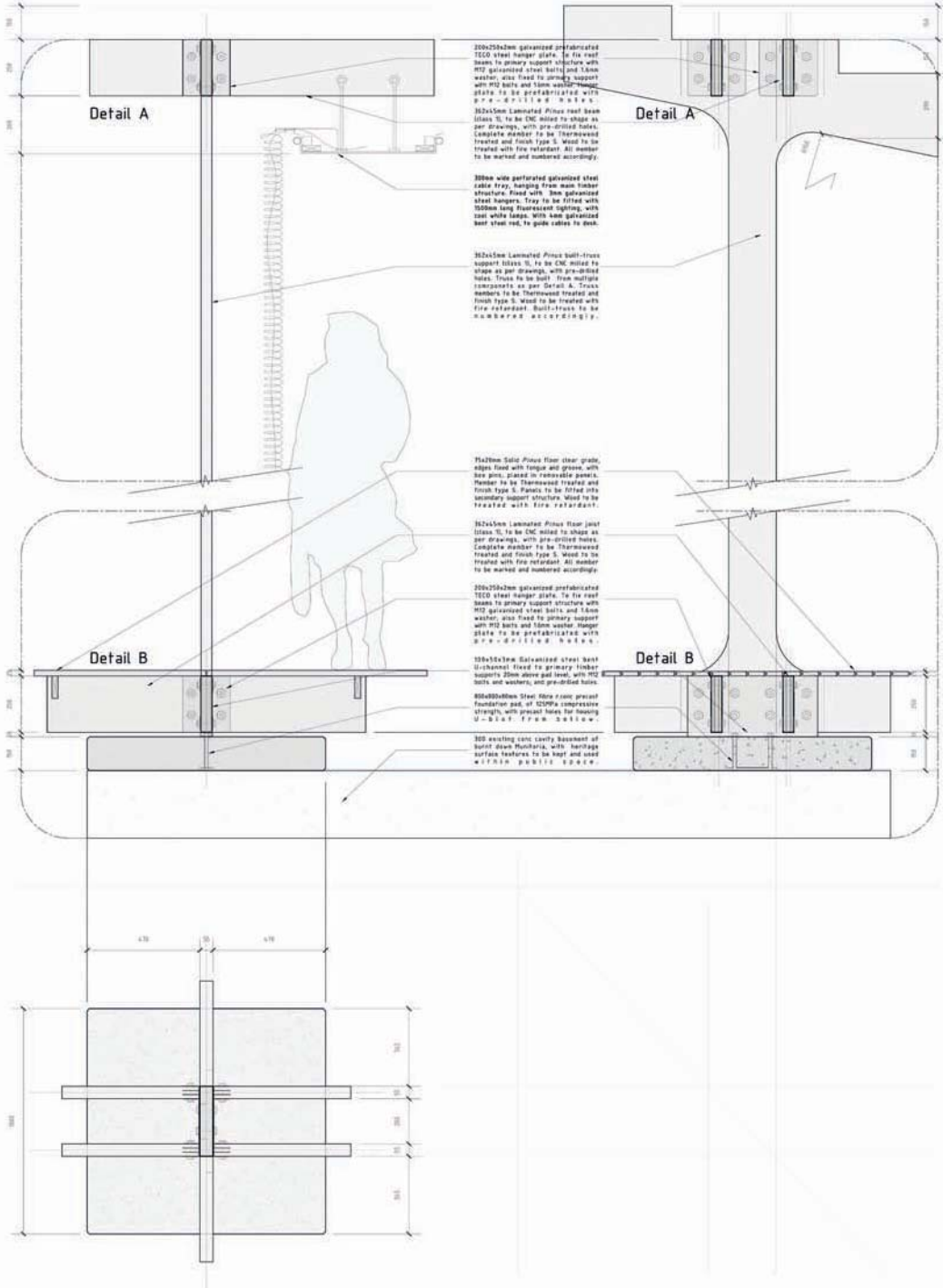


fig. 5.25 Detail exploration of structure tectonics

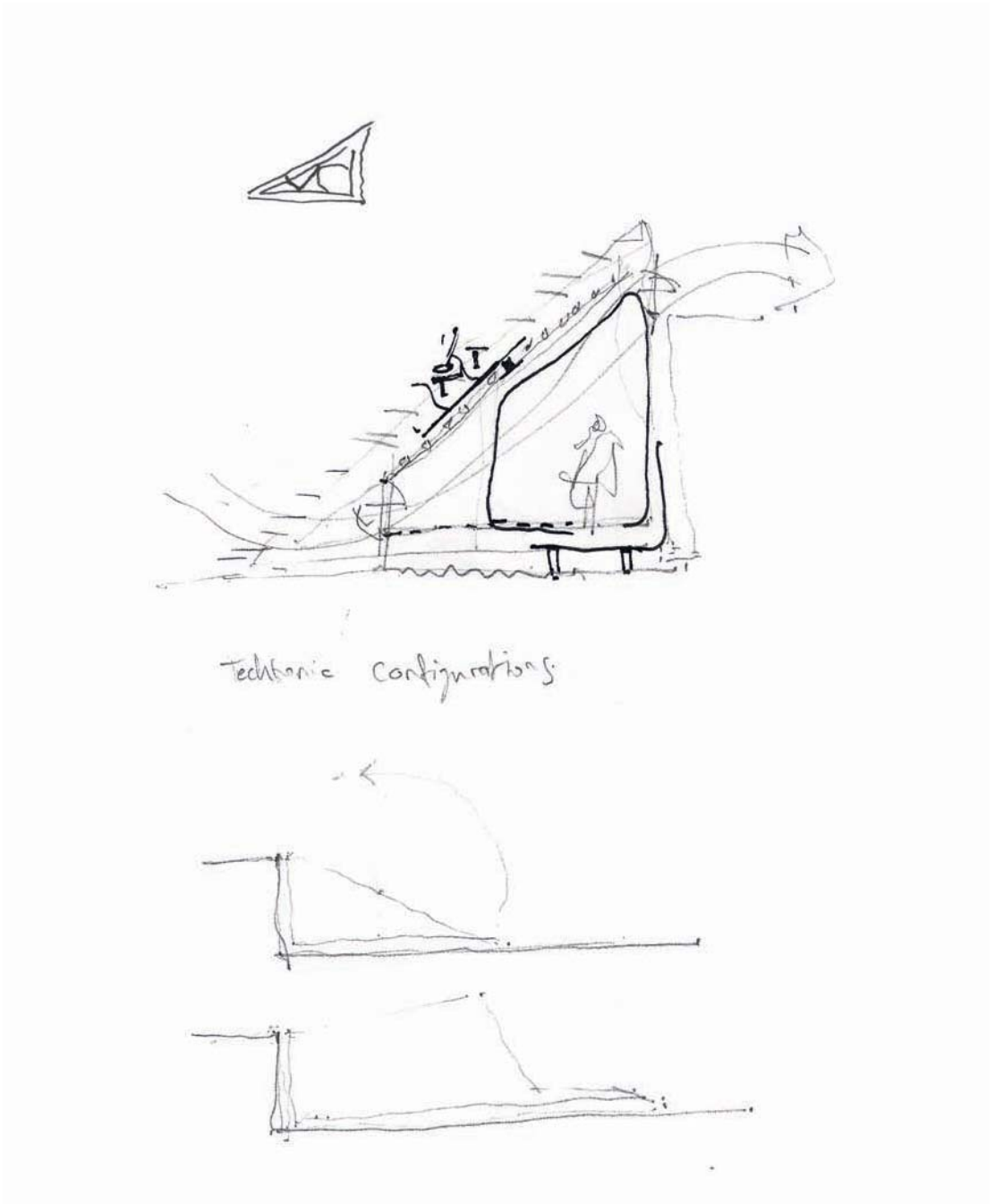
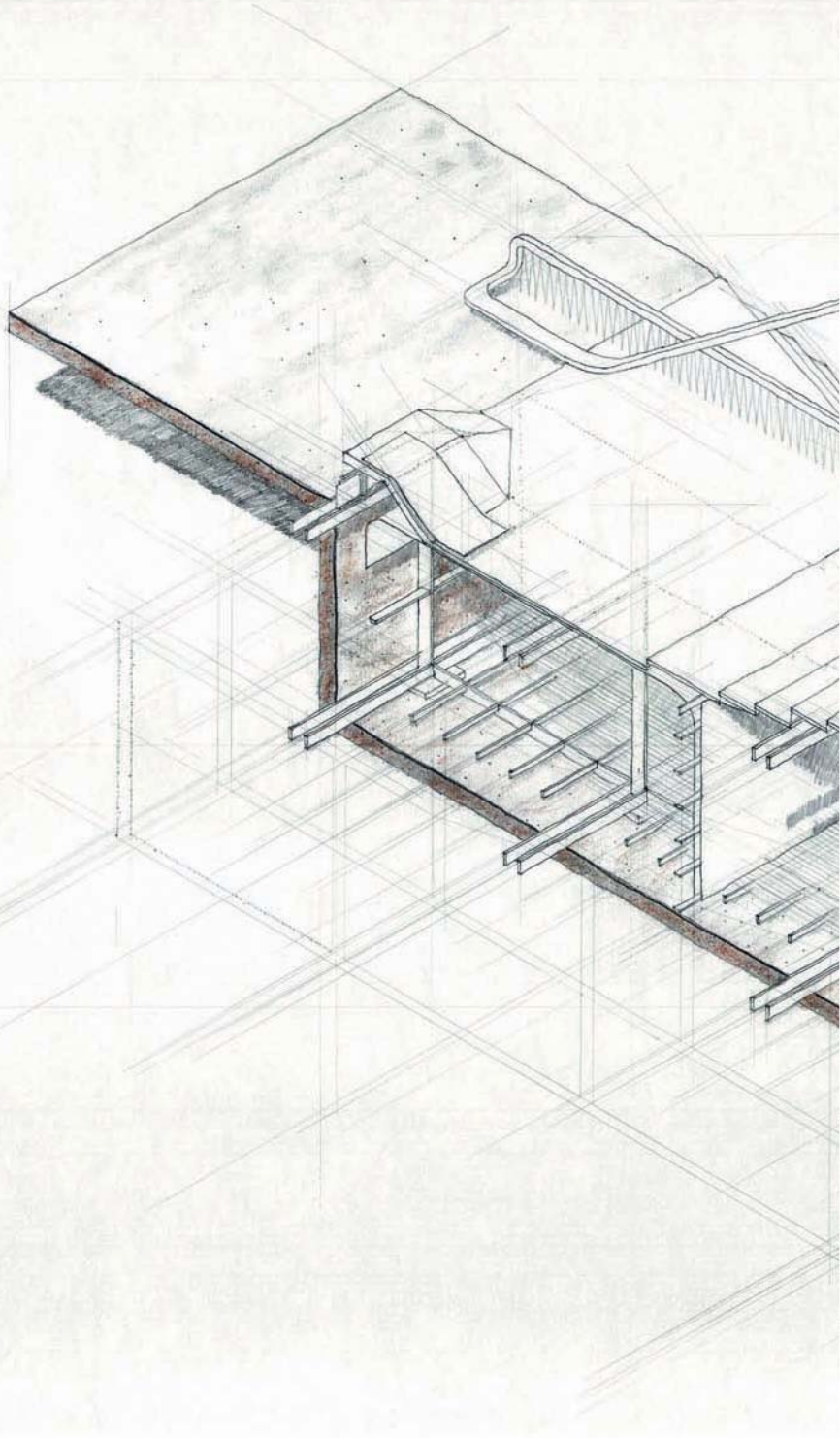


fig. 5.26 Concept exploration of structure tectonics



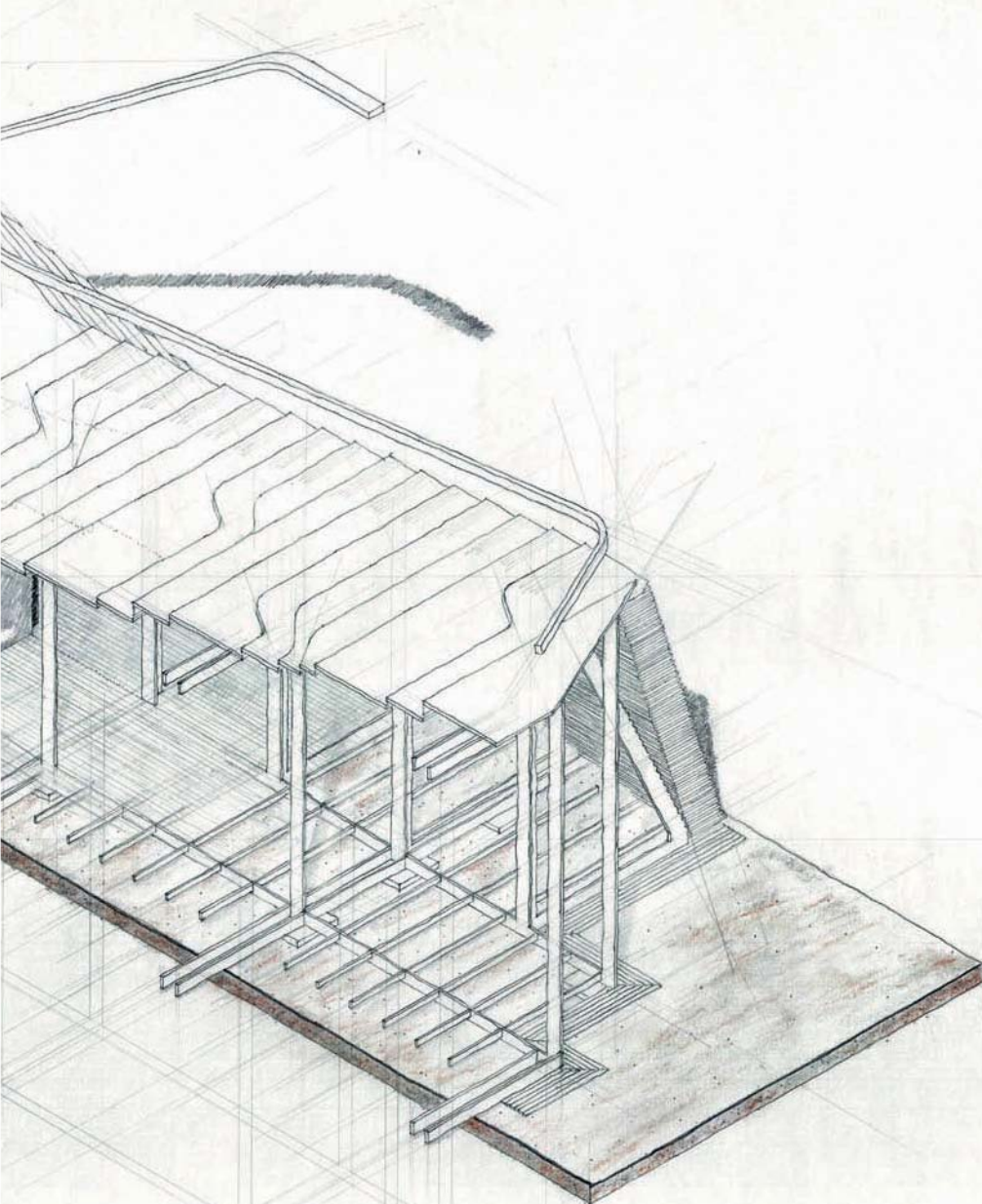


fig. 5.27 Axonometric A of stairway: public interface



+3.020  
UFFL ▽ top surface level

+0.000  
UFFL ▽ street level

-3.375  
UFFL ▽ surveillance level

UFFL ▲ basement level  
-3.750

v.d. Wall Street Edge

extension of Urban Surface

Surveillance space

180x50mm Pine Custom timber handrail, which is clean laser according to required profile. Timber handrail supported by bent 2mm galvanized steel railing, fixed to timber with dia. 4mm brass screws and bottom with M16 expansion bolts. Timber railing to be thermosealed treated, and left unfinished to weather grey as per Detail 2.

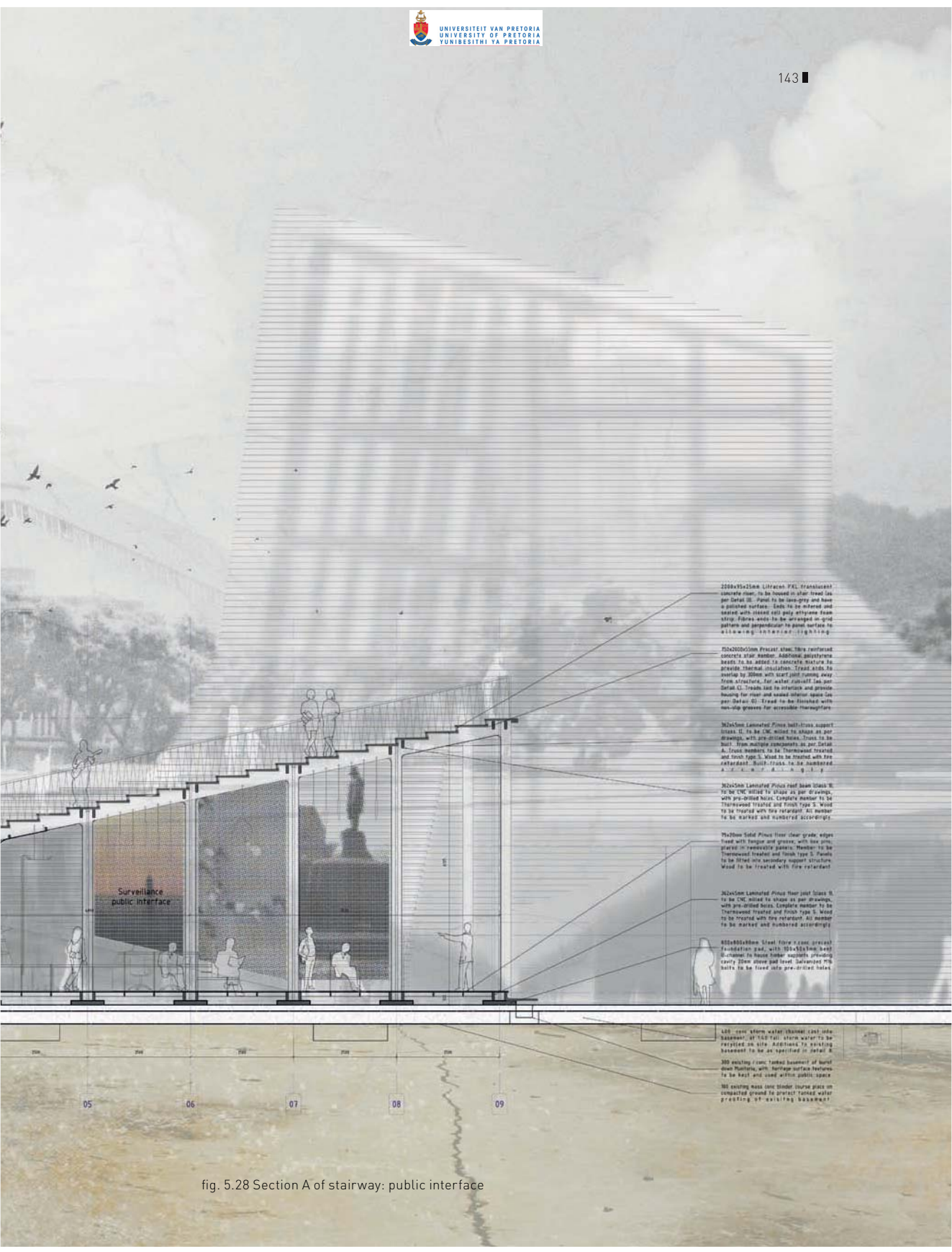
Timber window frame set into concrete slabs with 4mm safety glass and mesh mesh screen to protect it. Frames to be finished with laminated oil wood glue to be separated from concrete surface with translucent layer. Window frame to have weather strip to shed water.

180x45mm Laminated Pine roof beam slats to be CNC milled to shape as per drawings, with pre-drilled holes. Complete member to be thermosealed treated and finish type 3, wood to be treated with fire retardant. All member to be marked and numbered accordingly.

400 mm alpha water channel cast into into street level, at 180 mm. Storm water to be filtered and recycled on site for reuse.

300mm wide perforated galvanized steel cable tray, hanging from main timber structure. Fixed with 2mm galvanized steel hangers. Tray to be fitted with 1500mm long fluorescent lighting, with cool white lamps, with 4mm galvanized bent steel feet, to guide cables to desk.

180x50mm Pine timber rails fixed at 450 o.c. to support interior furniture and fixtures, frame existing basement structure, interior furniture to be extension of urban surface.



200x35x25mm Litracor PKL translucent concrete riser. To be housed in star tread (as per Detail 10). Panel to be cast grey and have a polished surface. Ends to be tapered and leaded with hidden call-pipe edge-cure from string. Fibres ends to be arranged in grid pattern and perpendicular to panel surface to allow for internal lighting.

20x200x50mm Precast slab. This reinforced concrete slab member. Additional reinforcement needs to be added to concrete structure to provide structural stiffness. Tread ends to overlap by 50mm with start joint running away from structure. For water runoff (see per Detail 1). Treads and the interface and provide housing for rain and waste water pipe (see per Detail 1). Tread to be finished with non-slip grooves for accessible circulation.

32x50mm Laminated Fibre shell (from support Detail 1). To be CNC milled to shape as per drawings, with pre-drilled holes. Tread to be built from multiple components as per Detail 6. Tread members to be thermosealed treated and finish type 3. Wood to be treated with Fire retardant. Each track to be numbered A, B, C, D, E, F, G, H, I, J.

32x50mm Laminated Fibre roof beam (from Detail 6). To be CNC milled to shape as per drawings, with pre-drilled holes. Complete member to be thermosealed treated and finish type 3. Wood to be treated with Fire retardant. All member to be marked and numbered accordingly.

75x50mm Solid Fibre floor clear grade edge. Tread fixed with tongue and groove, with face painted in non-slip finish. Member to be thermosealed treated and finish type 3. Panels to be fixed into secondary support structure. Wood to be treated with Fire retardant.

32x50mm Laminated Fibre floor joint (from Detail 6). To be CNC milled to shape as per drawings, with pre-drilled holes. Complete member to be thermosealed treated and finish type 3. Wood to be treated with Fire retardant. All member to be marked and numbered accordingly.

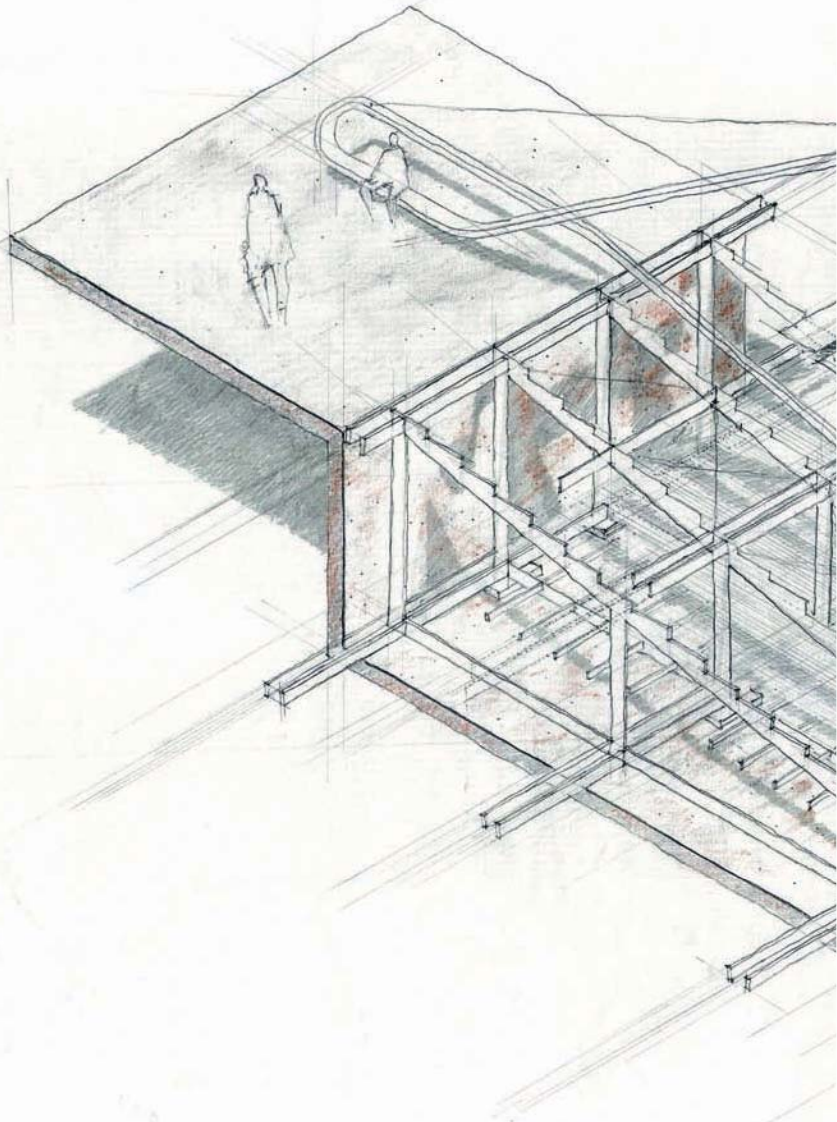
600x800x80mm Steel fibre (from precast foundation pad, with 10% fibre) to be used to house beam supports providing early fibre stress and level. Supports and bolts to be fixed into pre-drilled holes.

400 mm storm water channel cast into basement at 10% fall. Storm water to be recycled on site. Details to be working basement to be as specified in detail 8.

300 existing conc. framed basement of burial space Platform, with heritage surface features to be kept and used within public space.

100 existing mass conc slender concrete plate on compacted ground to protect tunnel wall protecting existing basement.

fig. 5.28 Section A of stairway: public interface



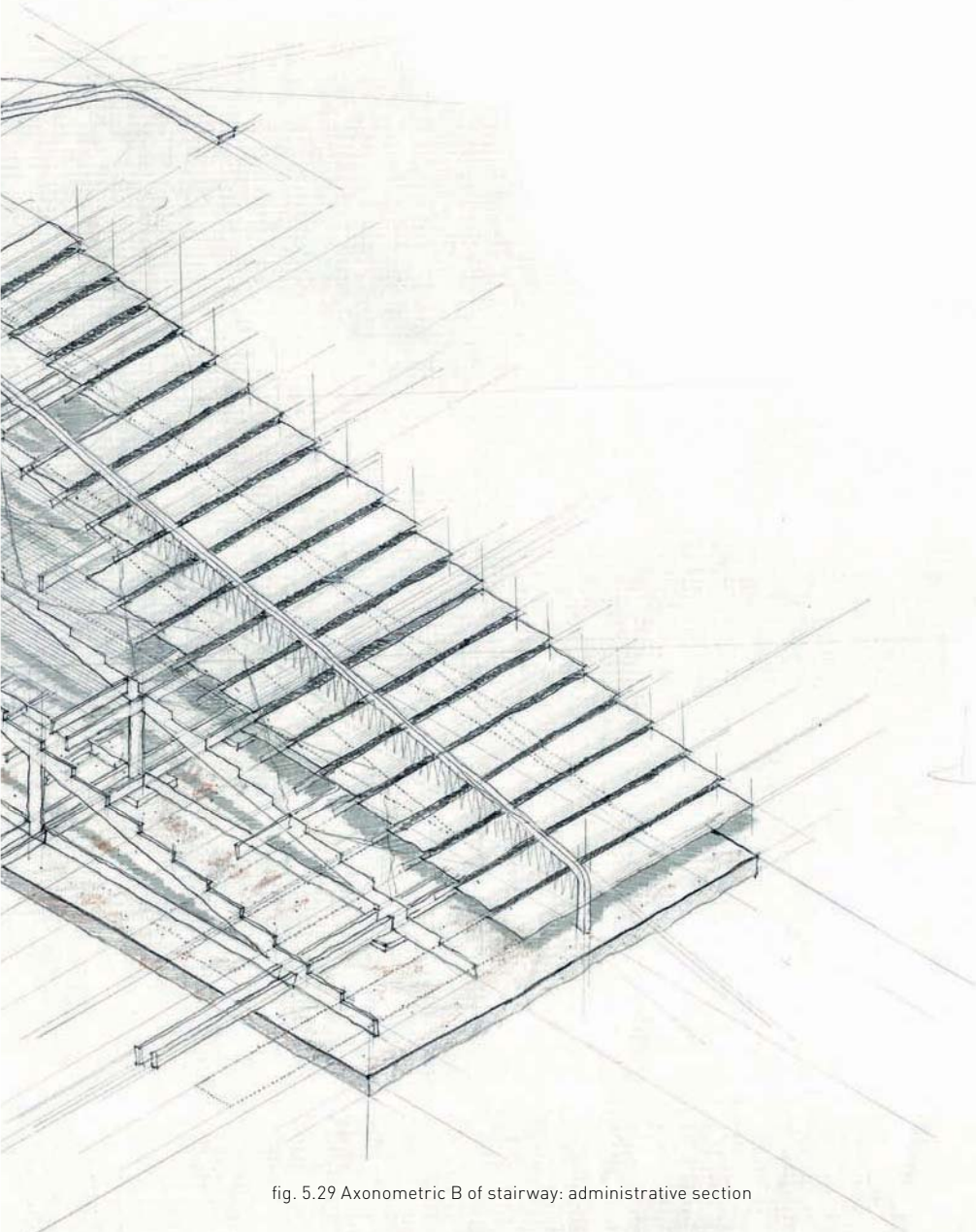
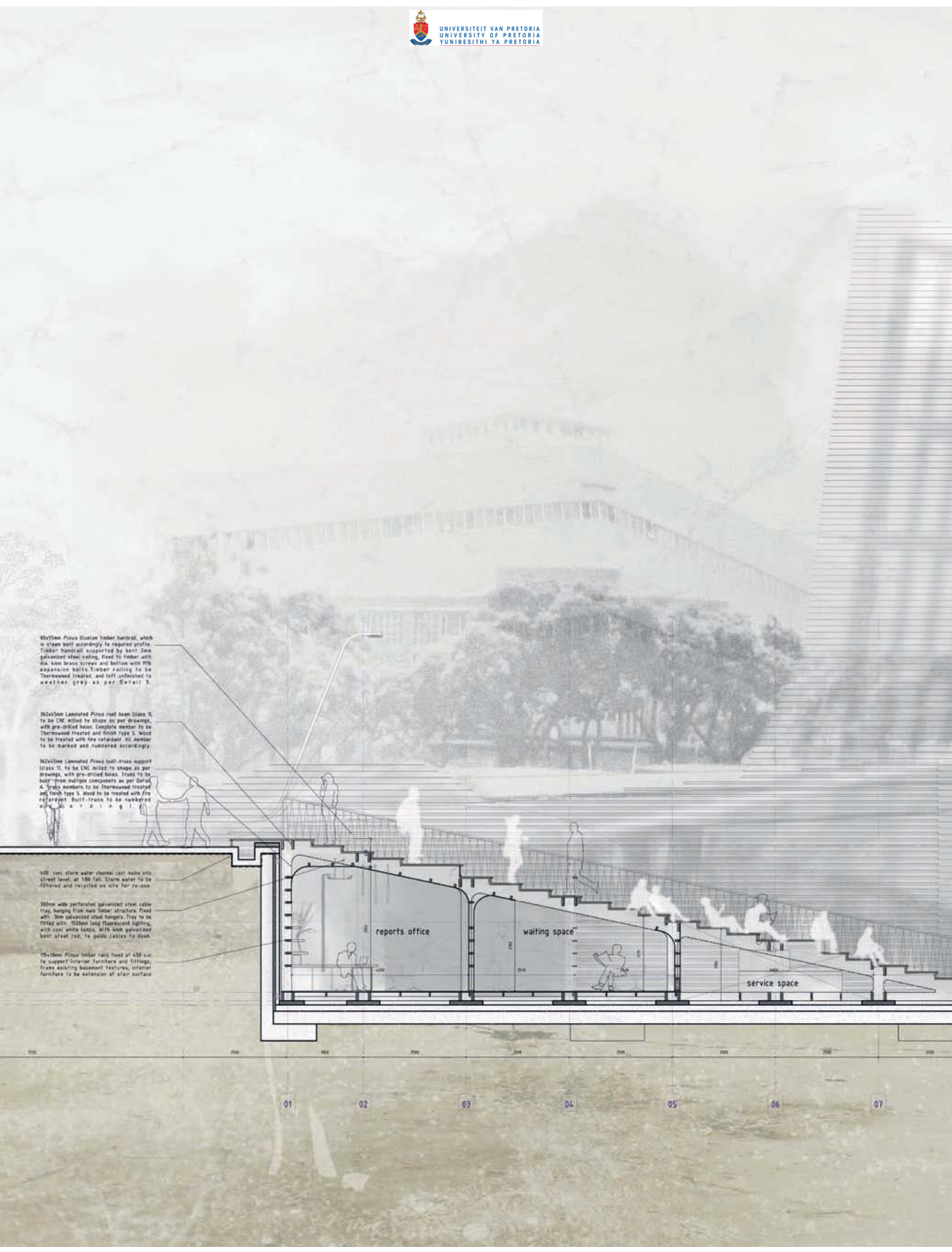


fig. 5.29 Axonometric B of stairway: administrative section





80x150mm Pinus Khasian timber handrail, which is a steam bent assembly to required profile. Timber handrail supported by bent 20mm galvannead steel railing. Fixed to timber with 6mm long brass screws and bottom with PMS expansion bolts. Timber railing to be Thermowood treated, and left unfinished to weather. Gray as per Detail 3.

162x150mm Laminated Pinus roof beam (class 1), to be CNC milled to shape as per drawing, with pre-drilled holes. Complete member to be Thermowood treated and finish type 5. Wood to be treated with the standard. All members to be marked and numbered accordingly.

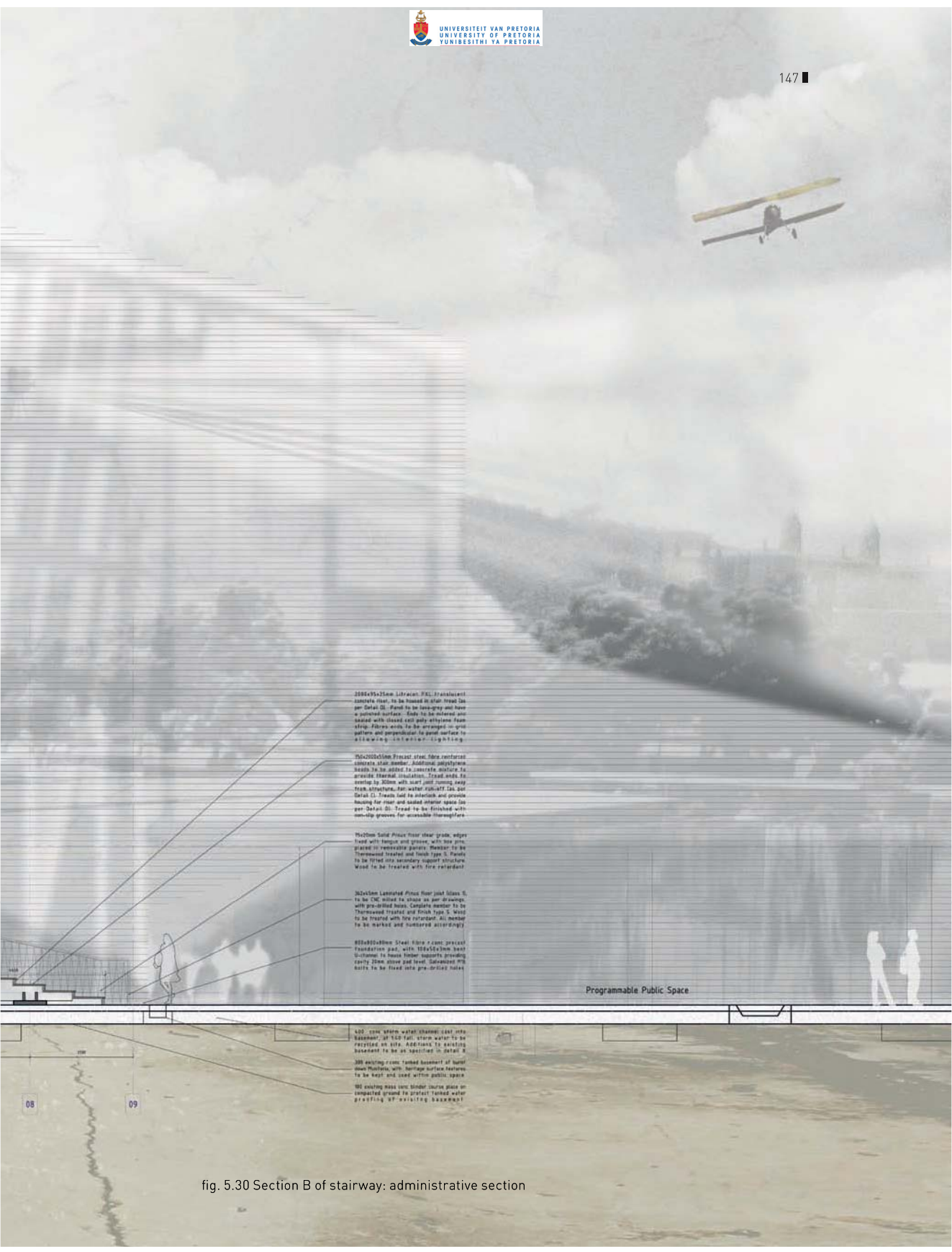
162x150mm Laminated Pinus built-in-truss support (class 1), to be CNC milled to shape as per drawing, with pre-drilled holes. Truss to be built from multiple components as per Detail 4. Truss members to be Thermowood treated and finish type 5. Wood to be treated with fire retardant. Built-truss to be numbered with 10 x r x d x i g l e t.

400 ltr. storm water channel cast into street level at 100 fall. Storm water to be filtered and recycled on site for re-use.

300mm wide perforated galvannead steel ceiling tray, hanging from main timber structure. Fixed with 20mm galvannead steel hangers. Tray to be fitted with 1500mm long fluorescent lighting with cool white lamps. With 10mm galvannead bent steel rods to guide cables to desk.

100x100mm Pinus timber raily fixed at 450 c/c. To support interior furniture and fittings. Frame existing basement fixtures, interior furniture to be extension of stair surface.

01 02 03 04 05 06 07



200x45x15mm Fibrecon FRC Fibre Reinforced concrete floor to be finished in slip tread Deep Grey Detail C1. Needs to be long-grain and have a polished surface. Ends to be mitred and sealed with closed cell polyethylene foam strip. Fibres needs to be arranged in grid pattern and perpendicular to panel surface to allow long and narrow lighting.

750x200x15mm Fibrecon steel fibre reinforced concrete stair nosing. Additional polyethylene beads to be added to concrete surface to provide thermal insulation. Tread needs to overlap by 30mm with next joint turning away from structure. Hot water radiators in gap Detail C1. Treads need to interlock and provide housing for rear and raised interior space lamp. Detail D1. Tread to be finished with non-slip grooves for accessible thoroughfare.

750mm Solid Pine floor stair grade, edge fixed with tongue and groove, with base prepared in reversible panel. Member to be Thermoseal treated and finish Type 3. Needs to be fitted into secondary support structure. Wood to be treated with fire retardant.

300x30mm Laminated Pine floor joint (max 6), to be CNC milled to shape as per drawings, with pre-drilled holes. Complete member to be Thermoseal treated and finish Type 3. Wood to be treated with fire retardant. All member to be marked and numbered accordingly.

800x900x90mm Steel fibre + com. precast foundation post with 100x100x10mm beam channel to house timber supports providing cavity above nose and level. Substrate 100 bolts to be fixed into pre-drilled holes.

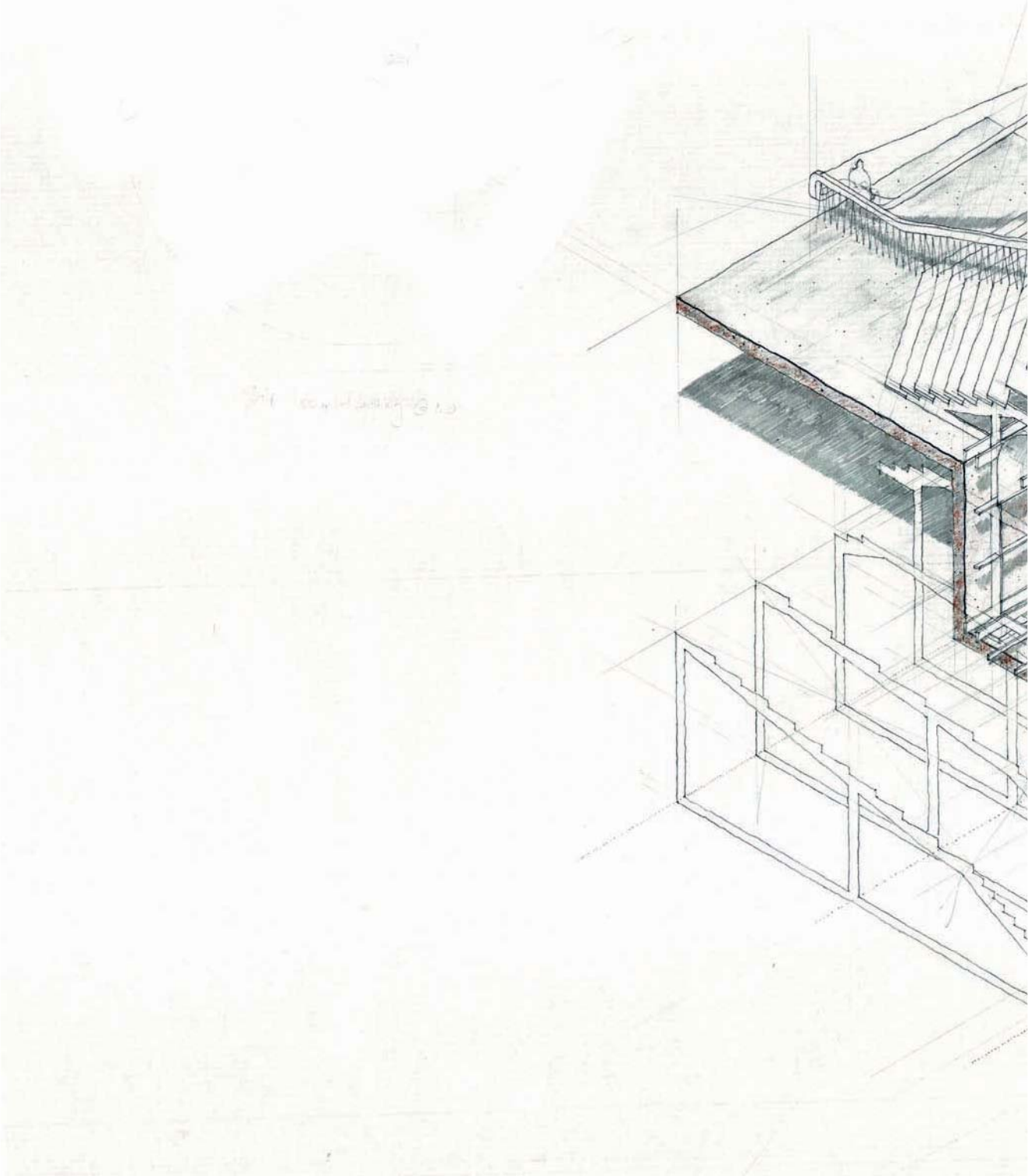
Programmable Public Space

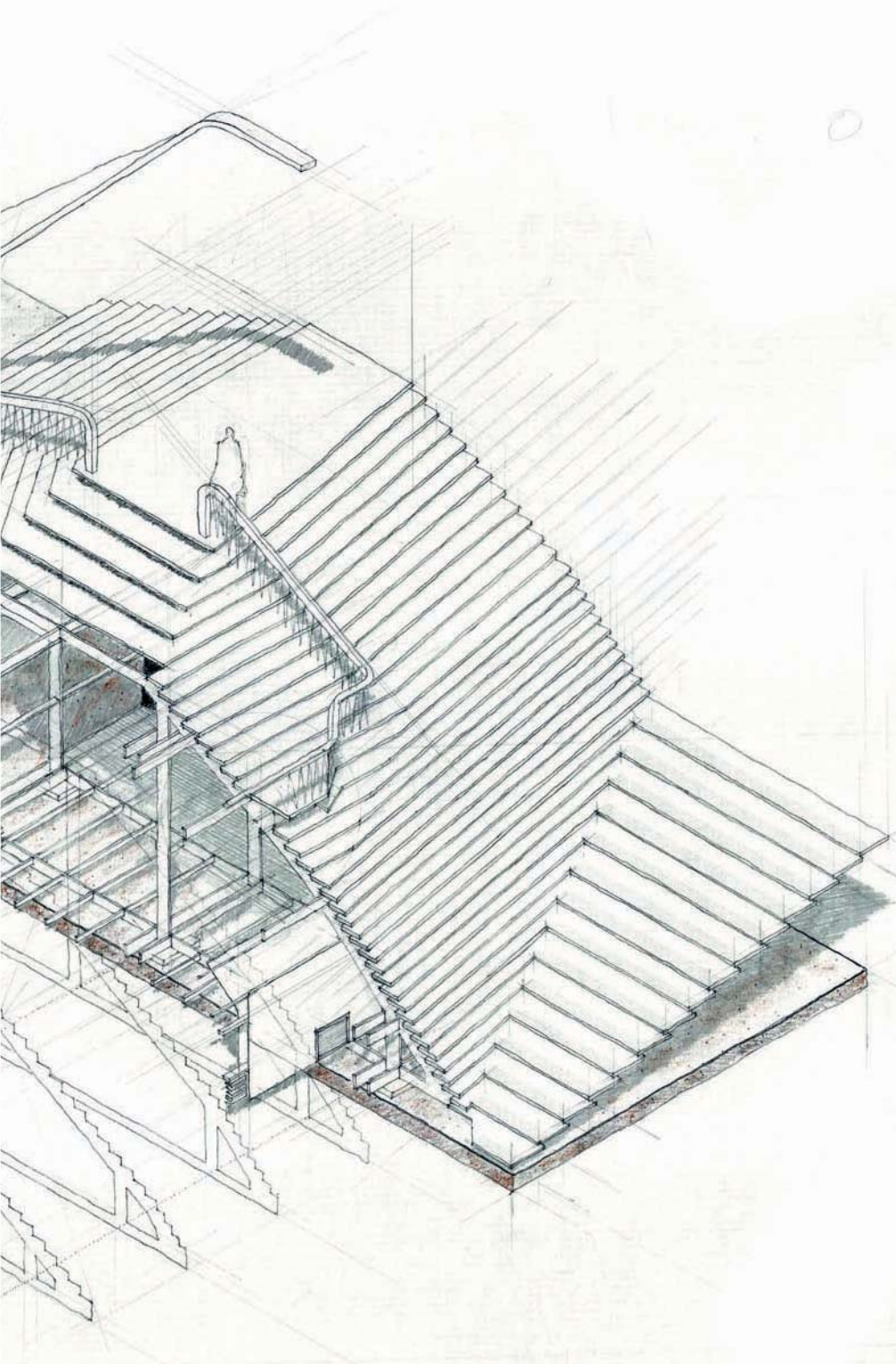
400 mm storm water channel cast into basement, at 100 fall, storm water to be recycled on site. Additions to existing basement to be as specified in Detail 3.

300 existing com. timber basement of hotel above Public, with heritage surface features to be kept and used within public space.

100 existing base and blower source place on compacted ground to prevent water proofing of existing basement.

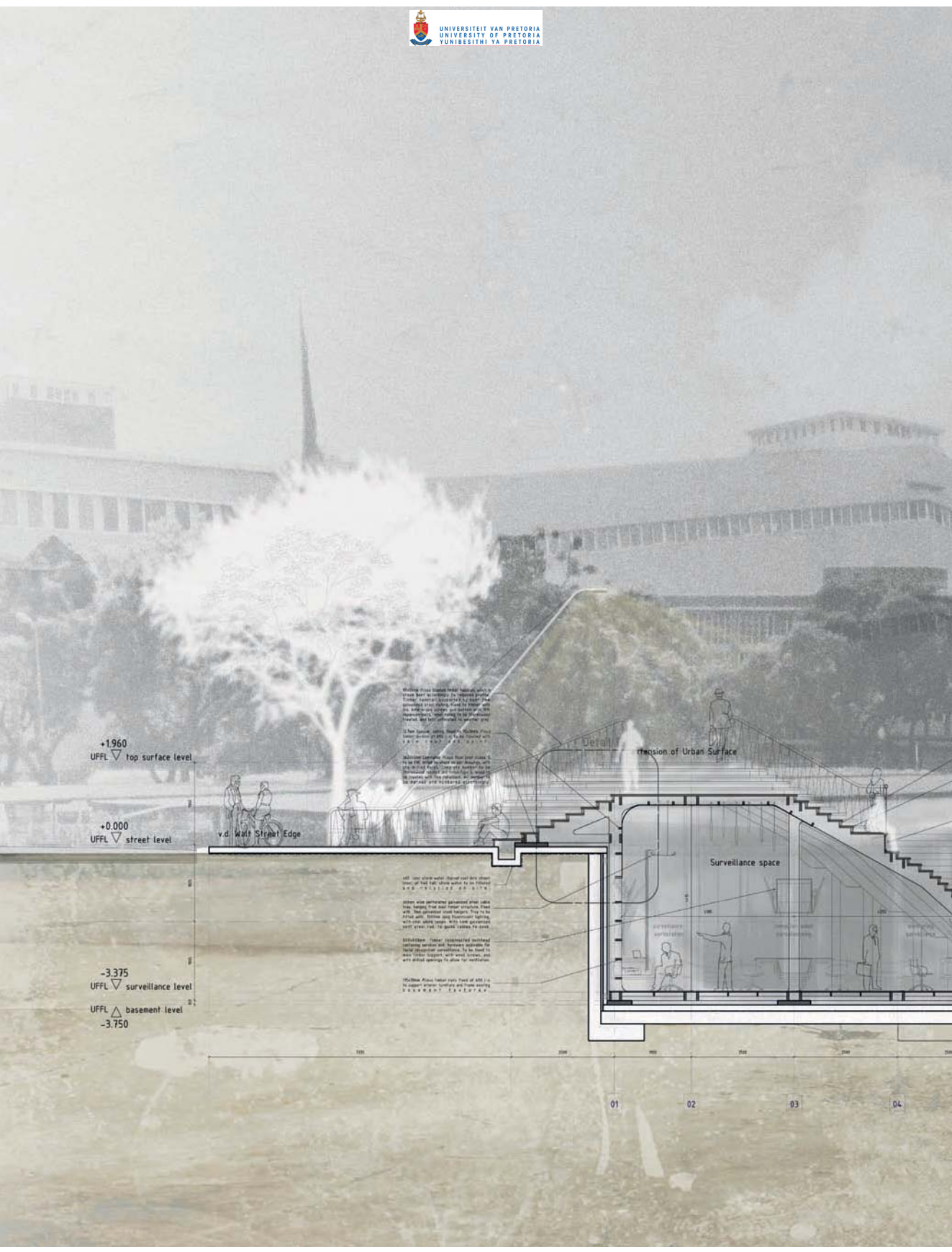
fig. 5.30 Section B of stairway: administrative section





AUG  
11

fig. 5.31 Axonometric C of stairway: surveillance space



+1.960  
UFFL top surface level

+0.000  
UFFL street level

v.d. Wolf Street Edge

-3.375  
UFFL surveillance level

-3.750  
UFFL basement level

Working floor beams below level, which have been reinforced to transfer loads to the concrete structure. The floor is reinforced with steel mesh and concrete. The floor is reinforced with steel mesh and concrete. The floor is reinforced with steel mesh and concrete.

100mm concrete slab on top of the floor. The floor is reinforced with steel mesh and concrete. The floor is reinforced with steel mesh and concrete. The floor is reinforced with steel mesh and concrete.

100mm concrete slab on top of the floor. The floor is reinforced with steel mesh and concrete. The floor is reinforced with steel mesh and concrete. The floor is reinforced with steel mesh and concrete.

Transition of Urban Surface

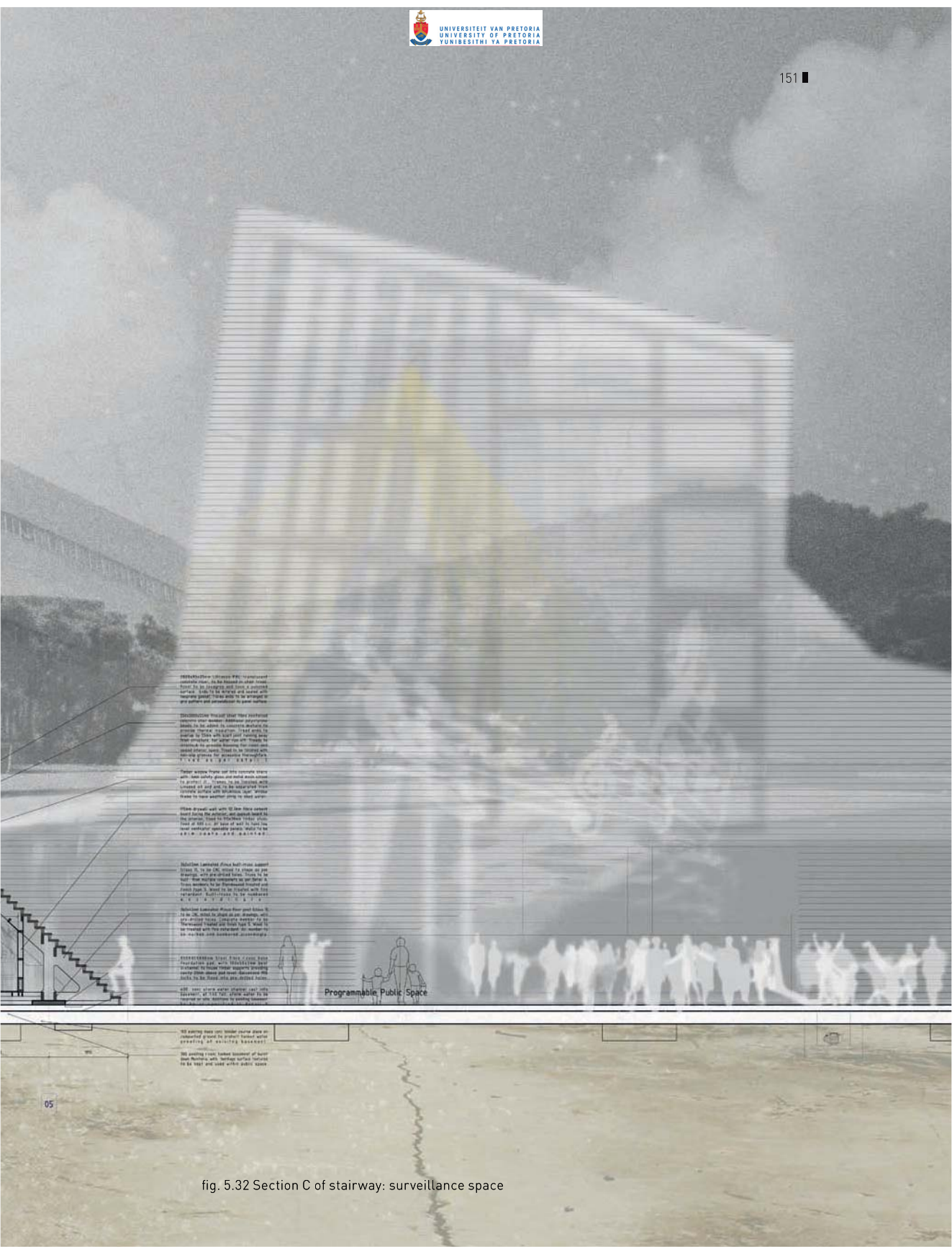
Surveillance space

01

02

03

04



PROVIDE A CLEAR VIEW OF THE STAIRWAY AND SURROUNDING AREAS TO ENHANCE SURVEILLANCE. THIS IS TO BE ACHIEVED BY THE USE OF GLASS AND OPENING UP THE STAIRWAY TO THE SURROUNDING AREAS.

CONSIDER THE USE OF LIGHTING TO ENHANCE SURVEILLANCE. THIS IS TO BE ACHIEVED BY THE USE OF LIGHTING TO ILLUMINATE THE STAIRWAY AND SURROUNDING AREAS.

TAKE INTO ACCOUNT THE NEED FOR A CLEAR VIEW OF THE STAIRWAY AND SURROUNDING AREAS. THIS IS TO BE ACHIEVED BY THE USE OF GLASS AND OPENING UP THE STAIRWAY TO THE SURROUNDING AREAS.

THE STAIRWAY SHOULD BE DESIGNED TO BE A CLEAR AND OPEN SPACE. THIS IS TO BE ACHIEVED BY THE USE OF GLASS AND OPENING UP THE STAIRWAY TO THE SURROUNDING AREAS.

CONSIDER THE USE OF LIGHTING TO ENHANCE SURVEILLANCE. THIS IS TO BE ACHIEVED BY THE USE OF LIGHTING TO ILLUMINATE THE STAIRWAY AND SURROUNDING AREAS.

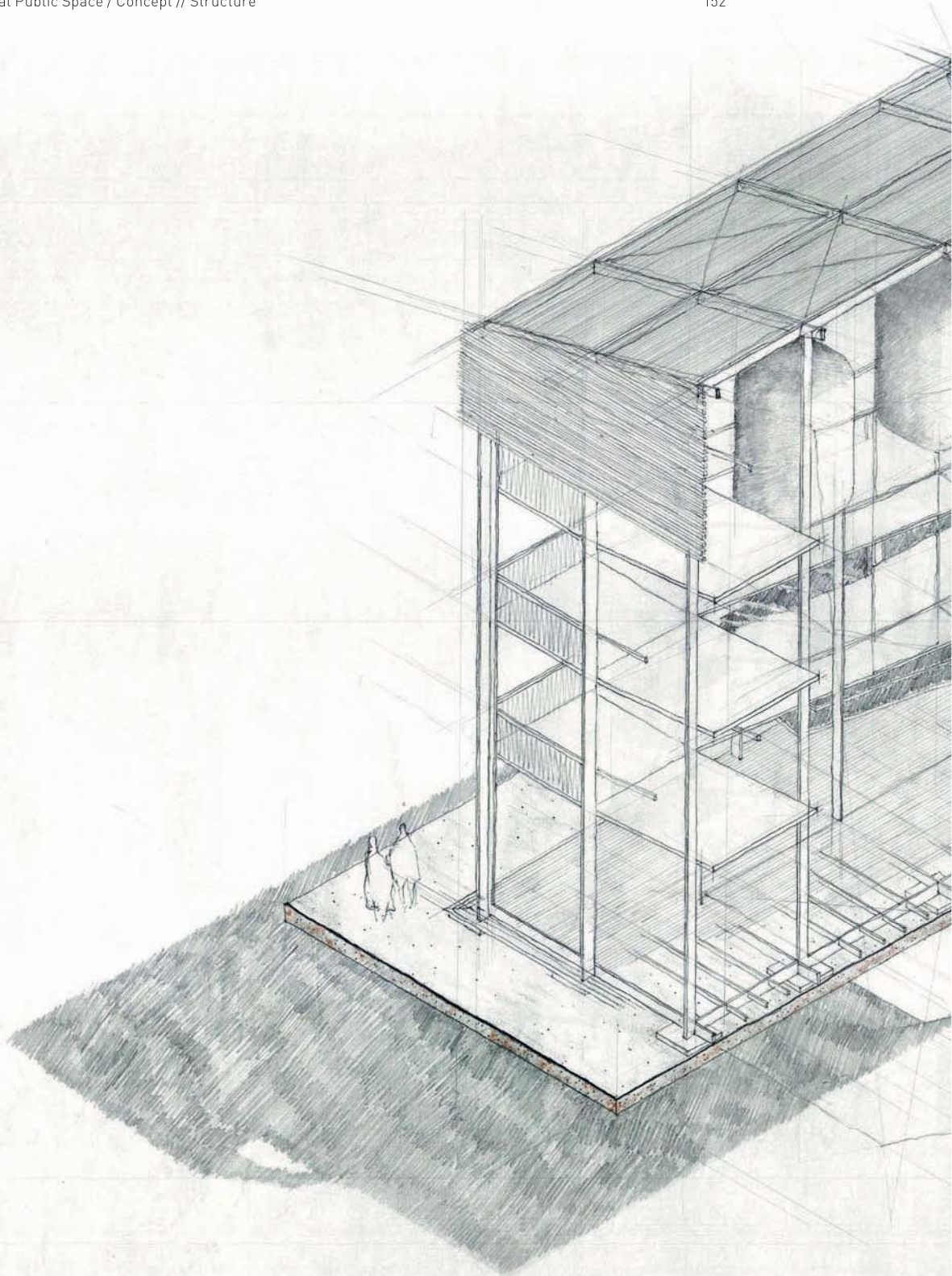
TAKE INTO ACCOUNT THE NEED FOR A CLEAR VIEW OF THE STAIRWAY AND SURROUNDING AREAS. THIS IS TO BE ACHIEVED BY THE USE OF GLASS AND OPENING UP THE STAIRWAY TO THE SURROUNDING AREAS.

CONSIDER THE USE OF LIGHTING TO ENHANCE SURVEILLANCE. THIS IS TO BE ACHIEVED BY THE USE OF LIGHTING TO ILLUMINATE THE STAIRWAY AND SURROUNDING AREAS.

Programmable Public Space

CONSIDER THE USE OF LIGHTING TO ENHANCE SURVEILLANCE. THIS IS TO BE ACHIEVED BY THE USE OF LIGHTING TO ILLUMINATE THE STAIRWAY AND SURROUNDING AREAS.

fig. 5.32 Section C of stairway: surveillance space



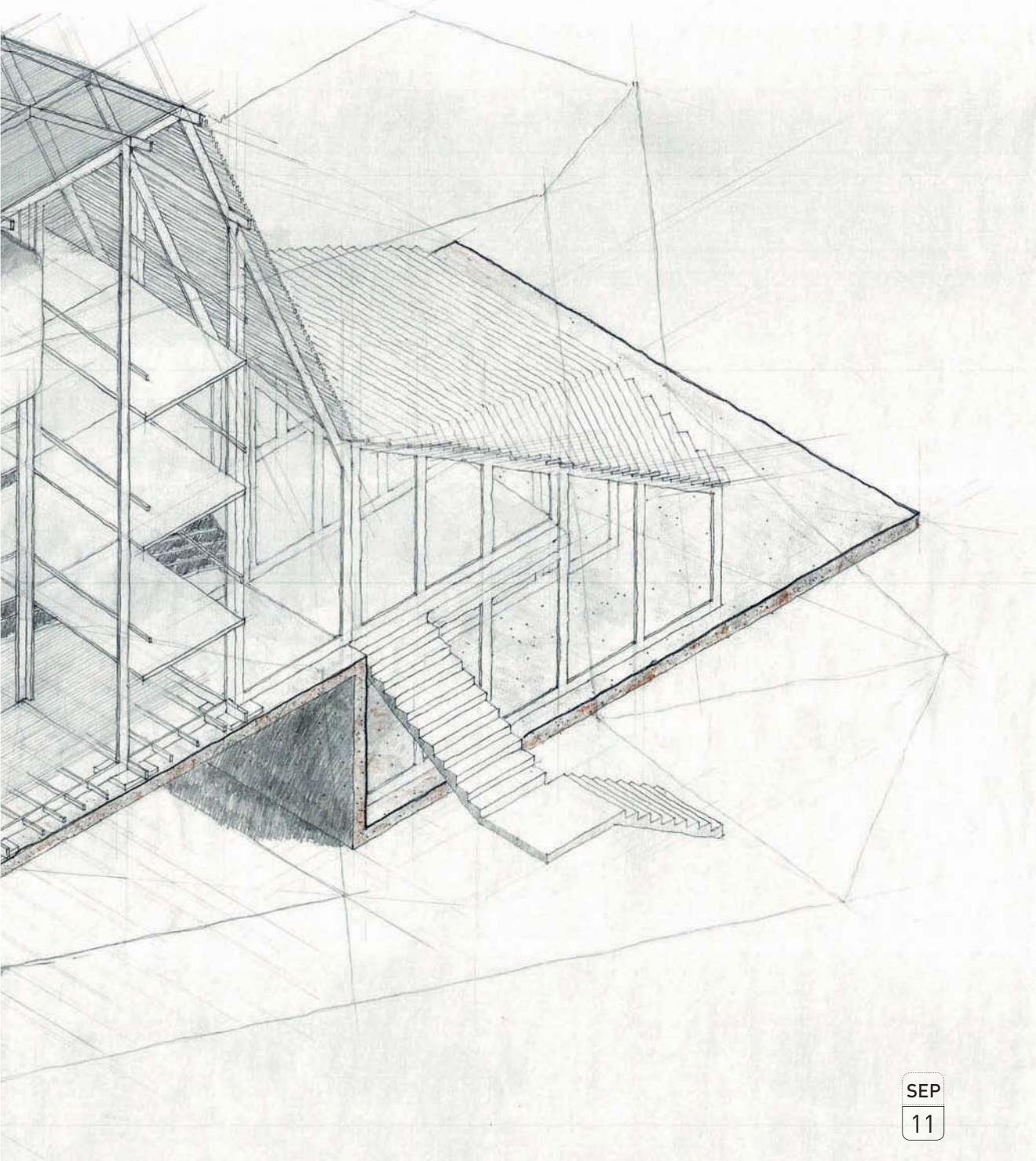


fig. 5.33 Axonometric D of stairway: public surveillance tower



+13.555  
UFLF ▽ roof level

PV solar film, laid over GKD stainless steel mesh. Facing North. Fixed to main timber structure with 36x38 battens and galvanneal MS bolts. Solar film to produce 2000kwh, with ventilator battery store in basement below.

36x38mm laminated Pine roof beam spans 12, to be CNC milled to shape as per drawings, with pre-drilled holes. Complete member to be Thermowood treated and finish type 5. Wood to be treated with fire retardant. All member to be marked and numbered accordingly.

300mm wide perforated galvanneal steel cable trays, hanging from main timber structure. Fixed with 10mm galvanneal steel hangers. Trays to be fitted with 1200mm long fluorescent lighting, with cool white lamps. With 10mm galvanneal bent steel rods, to guide cables to desk.

42x40x2000 42 Galvanneal insulation panels, hanging from main timber structure. Fixed at varying heights with 10mm galvanneal steel n. 6. 6. 6. 6.

55x200x45mm Precast steel fibre reinforced concrete slab member. To be fixed from inside of structure with 10mm stainless steel thumb screws as per Detail 3. Slab members to have open joints, allowing the exposure to natural elements and external views.

+8.830  
UFLF ▽ surveillance level

Public panoramic surveillance pods, as per Detail 4. To be fixed to primary timber support structure with 10mm brass bolts, and secured from cable trays above.

+6.050  
UFLF ▽ observation level

Stainless steel GKD Media-Mesh to display surveillance video to public. Mesh to be fitted into stainless steel frame and fixed with bent stainless steel brackets fixed to primary timber support structure with 10mm stainless steel screws as per Detail 3.

+3.270  
UFLF ▽ veiling level

80x100mm Pine Glulam Timber Rafter, which is fixed into secondary to replace precast timber Rafter(s) supported by bent 10mm galvanneal steel rafter. Fixed to timber with 10mm brass nuts and washers with 10mm expansion bolts. Timber rafter, to be Thermowood treated, and left untreated to weather gray as per Detail 3.

+0.000  
UFLF ▽ street level

-3.375  
UFLF ▽ surveillance level

UFLF ▲ basement level  
-3.750

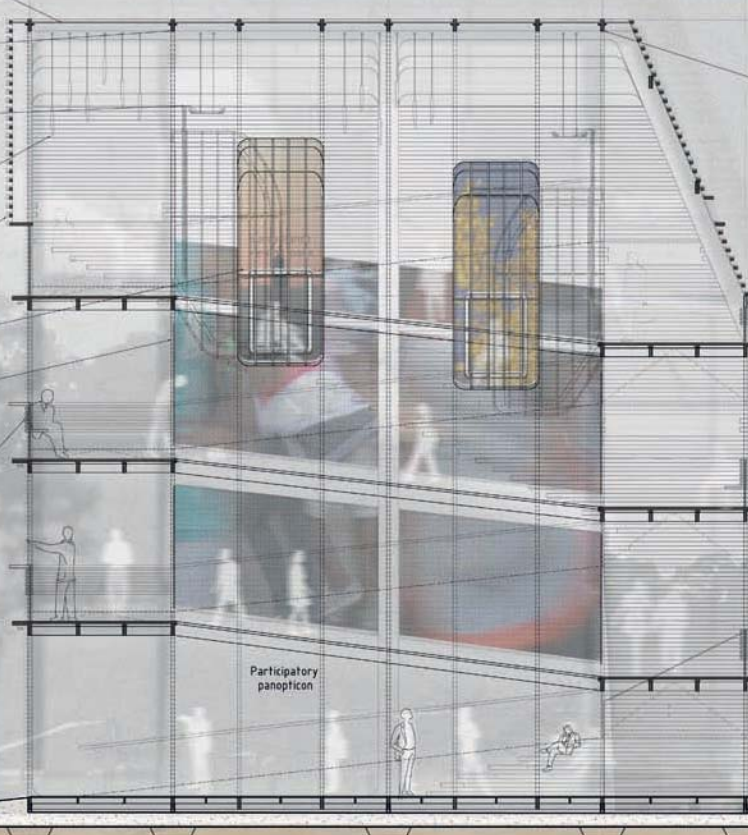




fig. 5.34 Section D of stairway: public surveillance tower

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# Surface

The Stairway surface is an extension of the urban surface, where it provides a continuation of the habitable urban plane, seamlessly linking both the urban cavity and the street. This is housed on the Stairway's surface, while enclosing surveillance spaces below. The surface is the physical manifestation of Cruz and Gage's (2009: 114) 'inhabitable interface'. As the concept lies in extending the urban surface, a material associated with the quotidian context is used, concrete (steel fibre reinforced concrete) (fig. 5.35). It is this surface that creates the stage for the spectacle of the everyday to be realized (fig. 5.36).

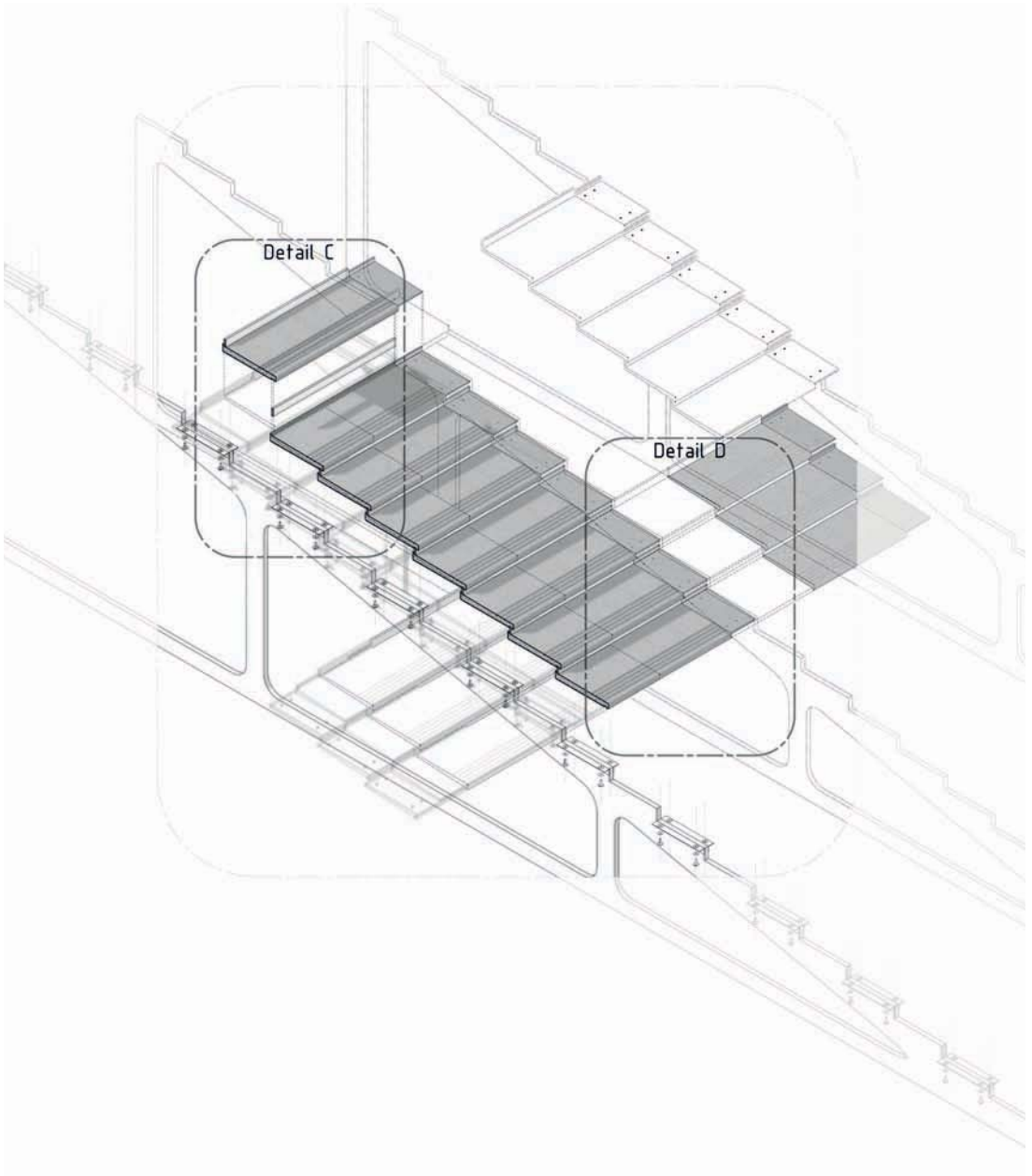


fig. 5.35 Surface exploration of Stairway

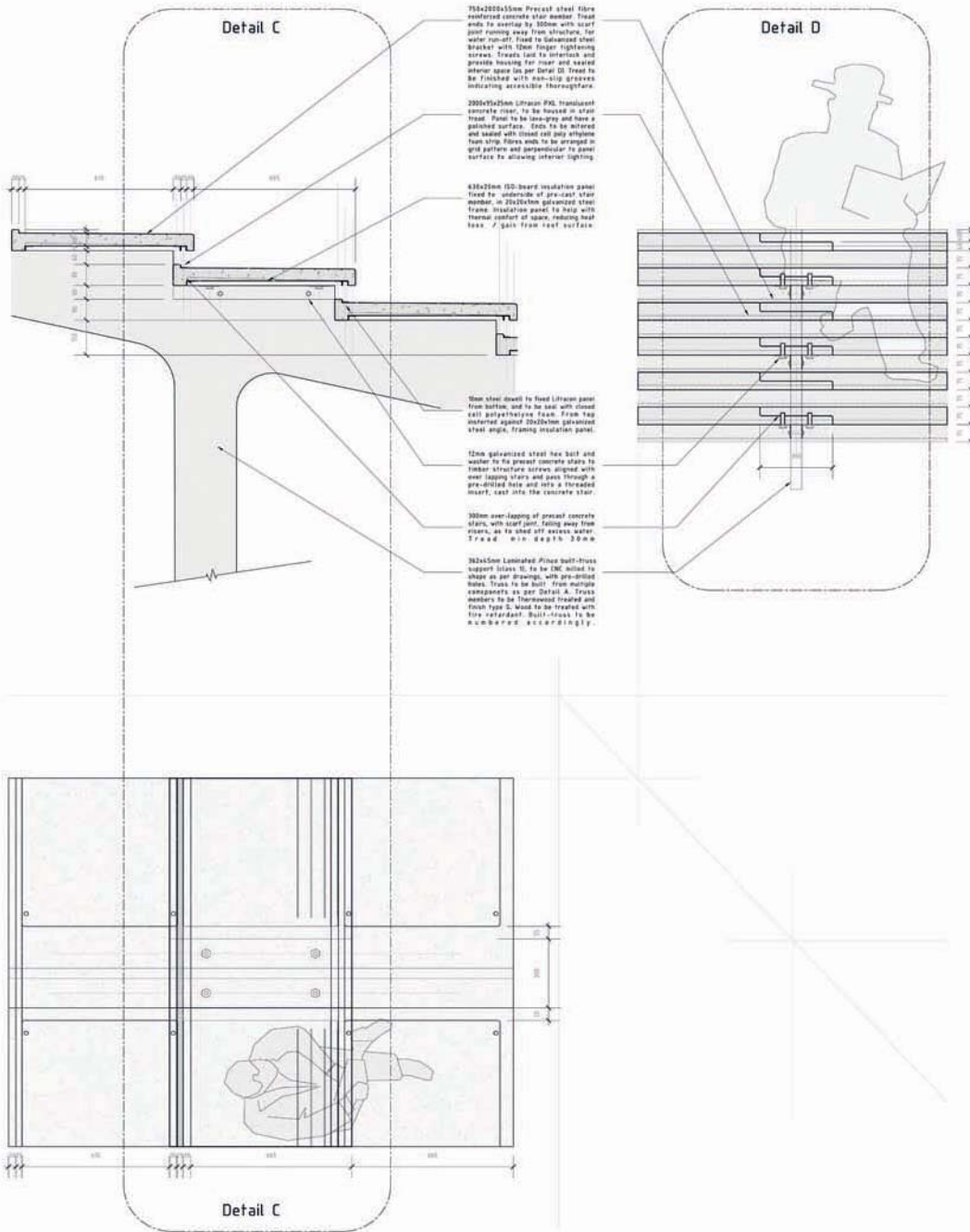


fig. 5.36 Detail exploration of surface tectonics

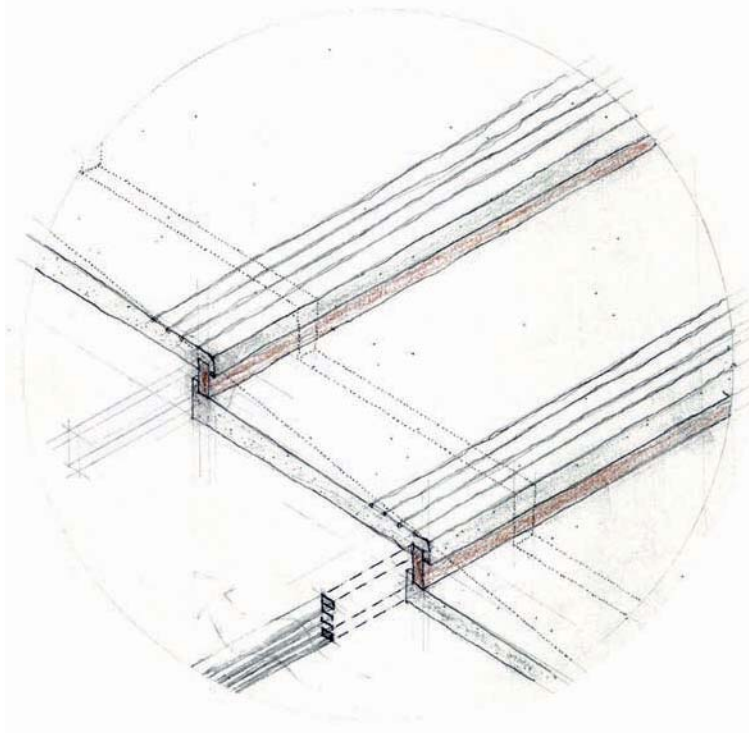
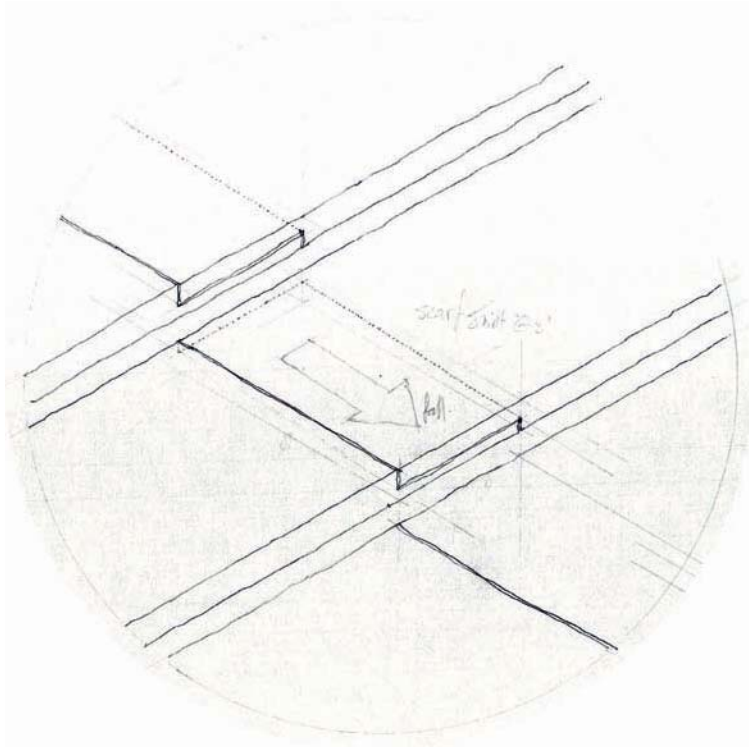


fig. 5.37 Concept exploration of surface tectonics

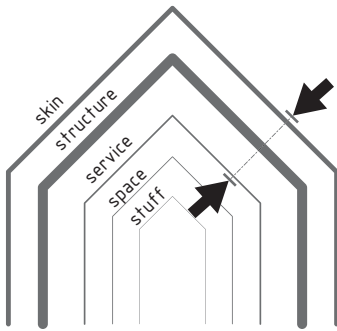
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### Skin»

The skin of the structure can be compared to that of a conventional building. Usually a building's skin is comprised of an exterior finish, a supporting structure, insulating material and internal finish (fig. 5.38) (Brand, 1994: 23). Within the stairway surface the skin follows the same principle; however it is compacted into the stair member. Through innovative use of concrete and recent research, it is then possible to combine these elements to provide the same concept as a conventional skin, but in a compacted member, where the skin is the structure, finish and insulation at the same time.

By using new technologies of steel fibre reinforced concrete, according to Lafarge (2011) a strength of 125MPa can be achieved with members as slender as 30mm. Also much research has gone into finding new aggregates for concrete. Thus within this innovative member, we can achieve the same characteristics as that of a conventional skin, however within a single building component. The stair treads also become critical in creating the spatial qualities of the architecture. The tread allows for the opportunity for lighting and ventilation of the space, where the tread is either a Litracon translucent panel or a louvred member to allow cross ventilation.

conventional  
building skin



#3 Stairway

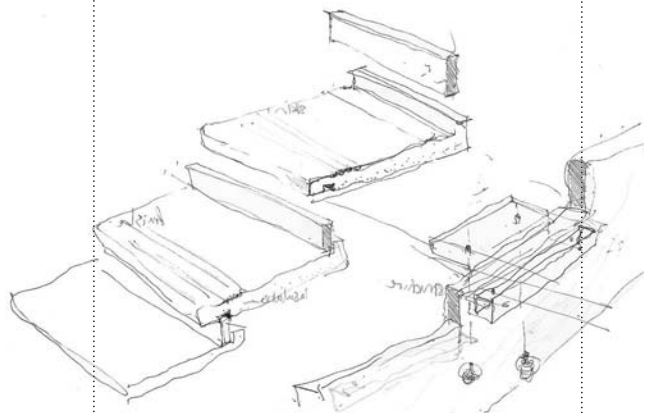
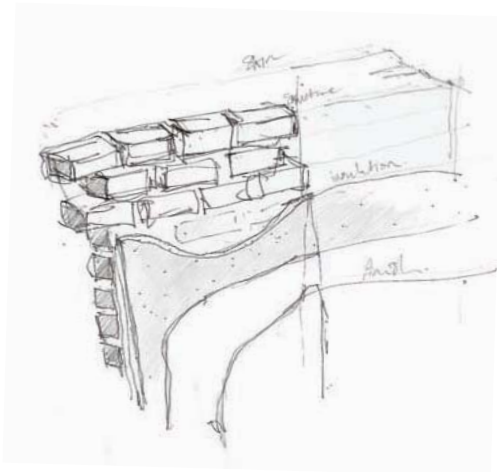
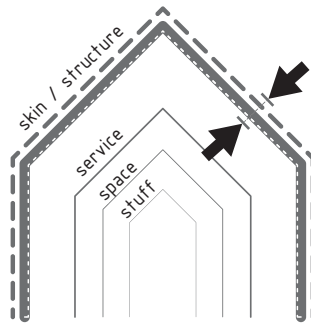


fig. 5.38 Analogy of skin typologies



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## Handrail»

In the same manner that the stairway can achieve more, so is the conceptual thinking behind the handrail design. The handrail is used to as a design tool to provide order within the stairway. It is used to soften space, acting as an infrastructural element. The handrail is to be constructed of a steam bent, laminated wood member, which folds to become a handrail, seating or light fixture (fig. 5.39).

Wood is chosen as it offers a tactile quality to the surfaces that a person interacts with and touches. The limitations of steam bending of wood are overcome through a segmented design of the handrail (fig. 5.40). The construction of the handrail is reminiscent to that of pipe work. As the wood can only be bent in a single direction, the wood member is adapted to suit the required form.

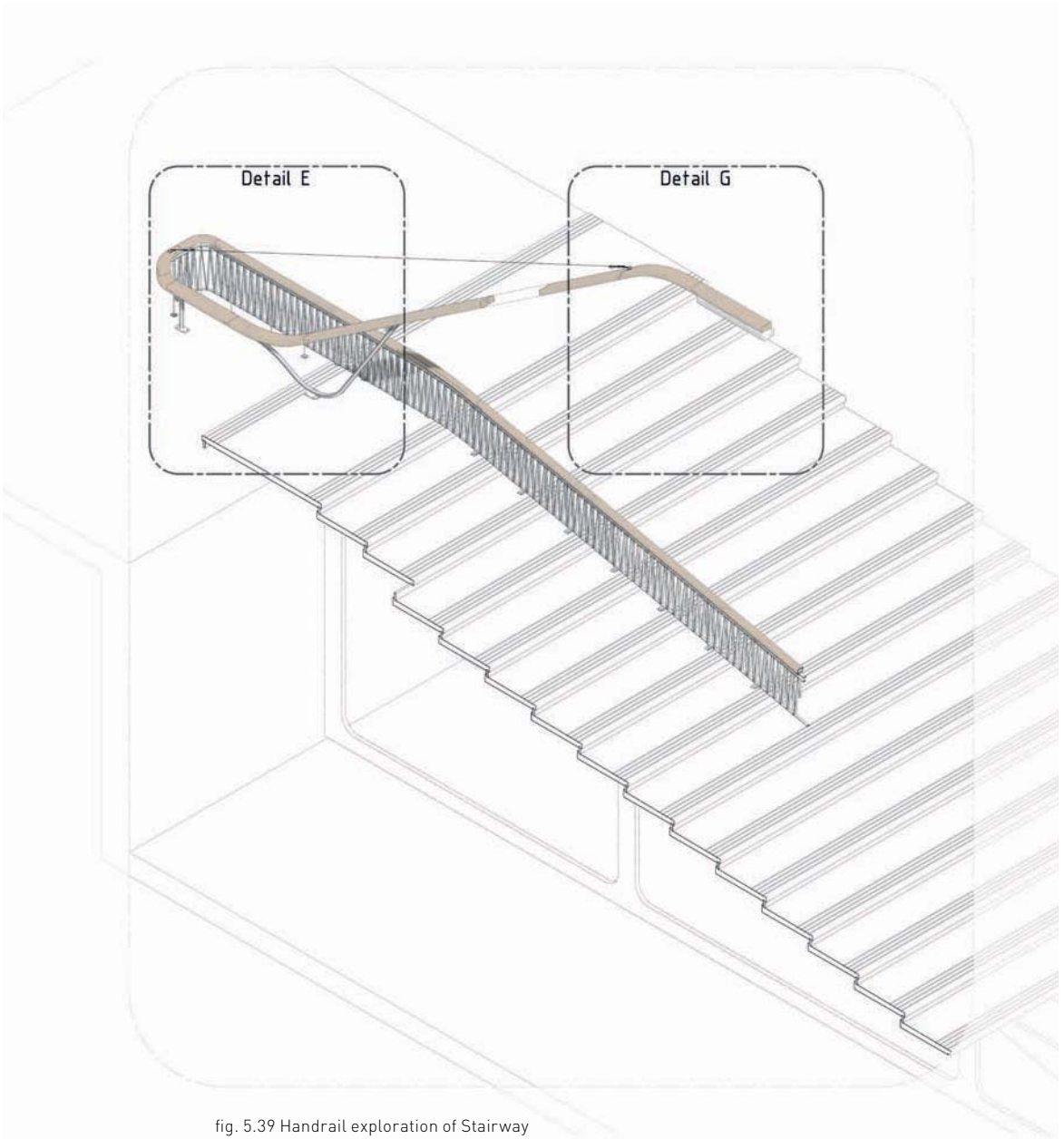


fig. 5.39 Handrail exploration of Stairway

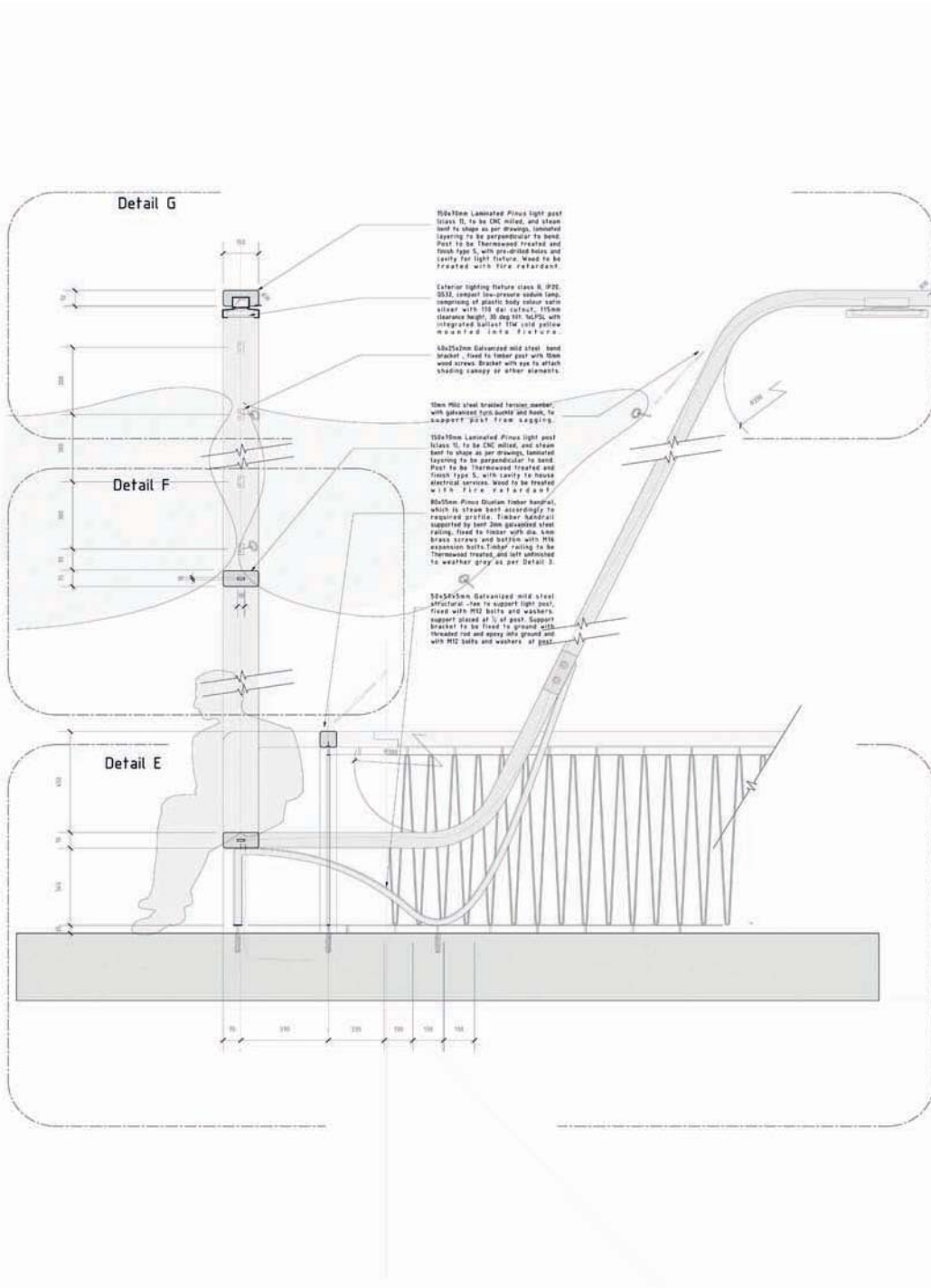


fig. 5.40 Detail exploration of handrail tectonics

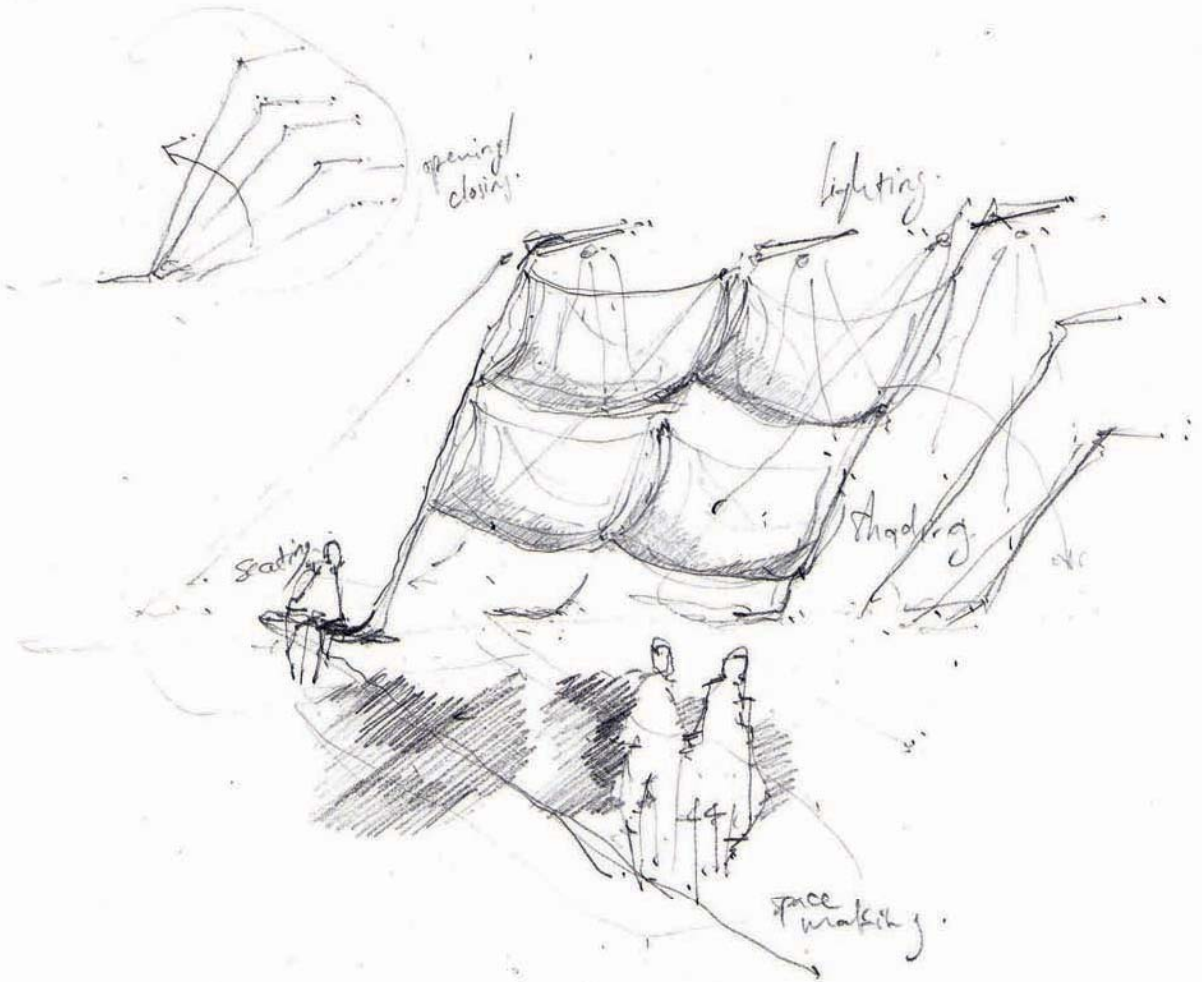


fig. 5.41 Concept exploration of handrail tectonics

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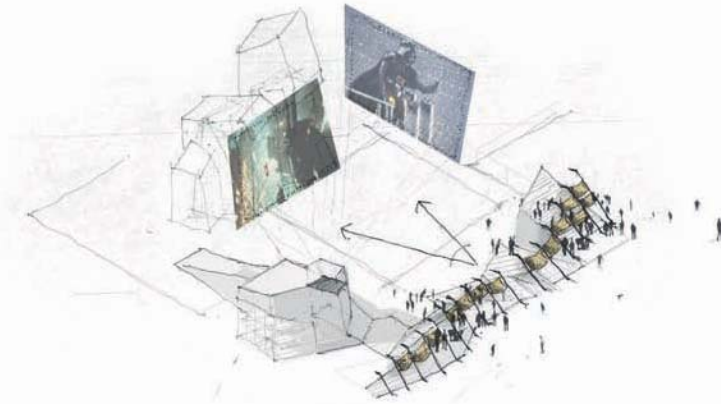
# Public Infrastructures

## Surface»

Koolhaas (2002: 305) defines the concept of 'flex-space' as an "undifferentiated, all-accommodating, flexible surface... becoming whatever it needs to at any given moment." While Bremner (2010: 280) identifies the need for the surface to become infrastructural, containing the possibility for multiple programmes. Here the stairway (at Munitoria) provides an extension of the urban surface, seen as a 'flex-space' while housing a multiplicity of programmes and events (fig. 5.42).

The stairway responds to the everyday activities of the city, but can be adapted to the needs of the users accommodating various spatial configurations (fig. 5.43).

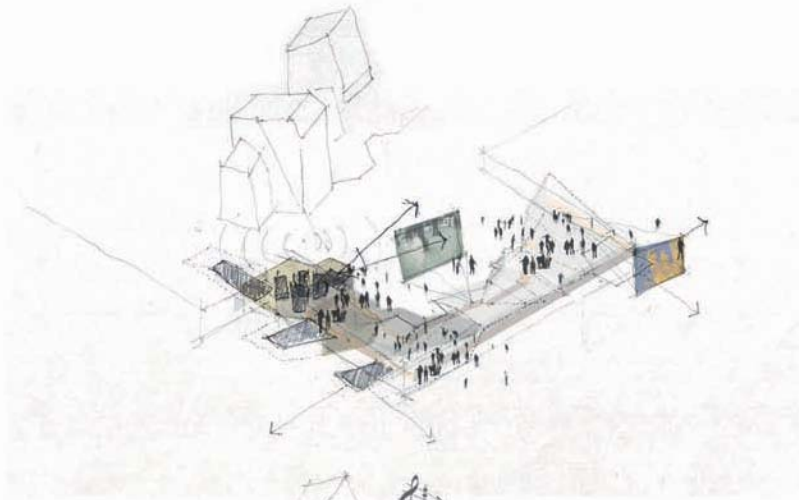




film  
screening



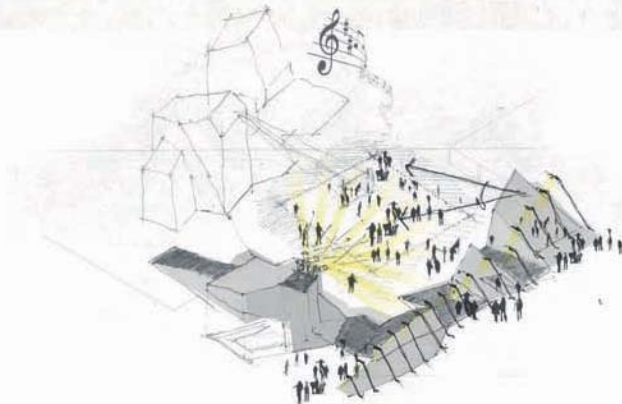
spectacle  
of everyday



events  
space



urban  
play



network of  
public space



outdoor  
exhibition



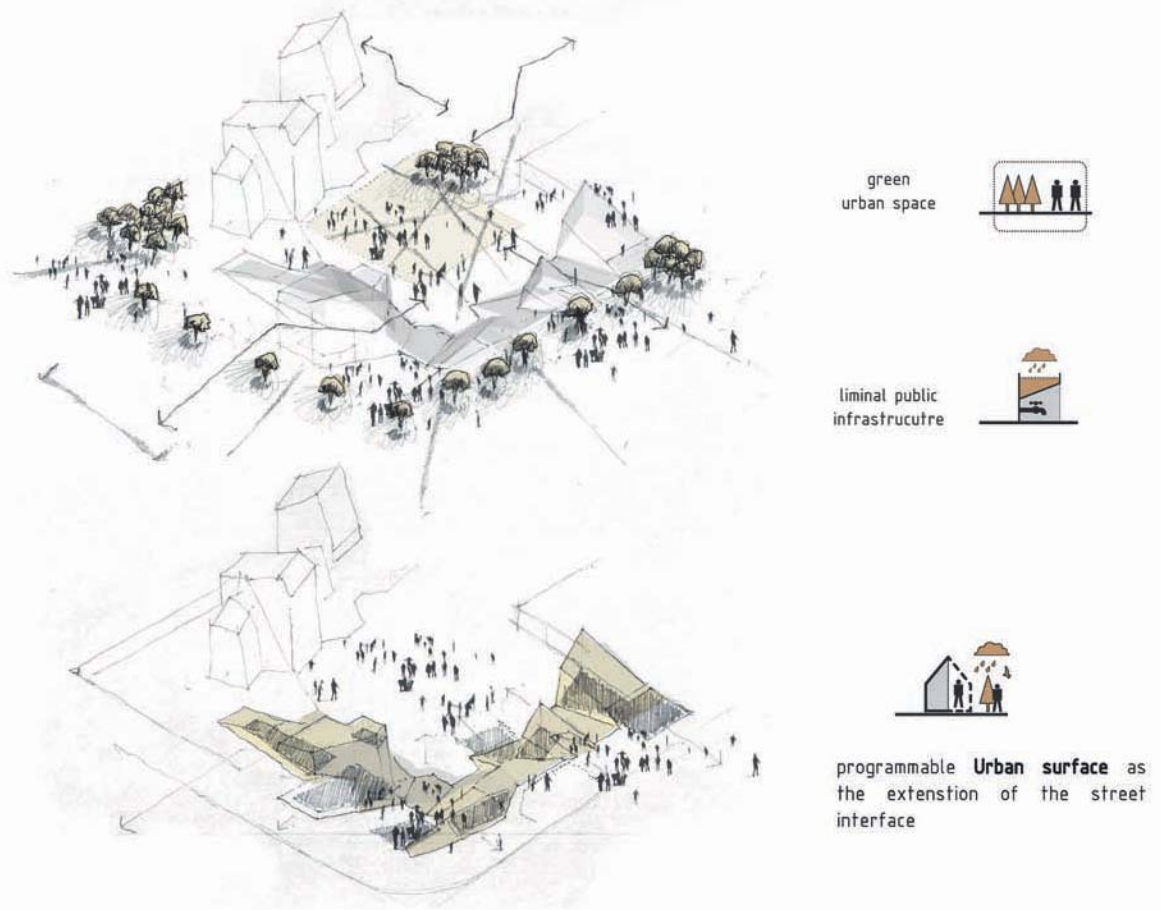


fig. 5.43 Multiplicity of programming of public space and Stairway.



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### Spatial response»

The spatial quality of the surveillance space is dependent on the thermal comfort of the space. A series of strategies is implemented to enhance the experience of the space, to allow for a comfortable space.

A ground to air heat exchange (GAHE) is used to regulate the interior temperature of the space. At a depth of 2 to 3m the soil strata have almost no diurnal temperature fluctuations, with an average temp of 19°C (Kyasol, 2011). Thus as a result the space's temperature is regulated to achieve a thermal comfort within the space in both summer and winter (fig. 5.44). A vertical earth tube of about 25-30m is required to complete the heat exchange, where a 70% reduction in energy consumption is expected as compared to conventional HVAC (Sharan & Jadhav, 2003: 14).

The effect of lighting is also taken into regard, with the activities that occur within the space in mind. The space is to essentially be occupied as a surveillance control space, where the viewing of monitors is prevalent. Here a soft diffused level of lighting is required as to reduce glare given off the screens (fig. 5.44). The spaces are equipped with task lighting where required to aid in the lighting of the space where necessary. The translucent risers allow for the penetration on natural lighting within the interior spaces and create a visual continuity with the external spaces.

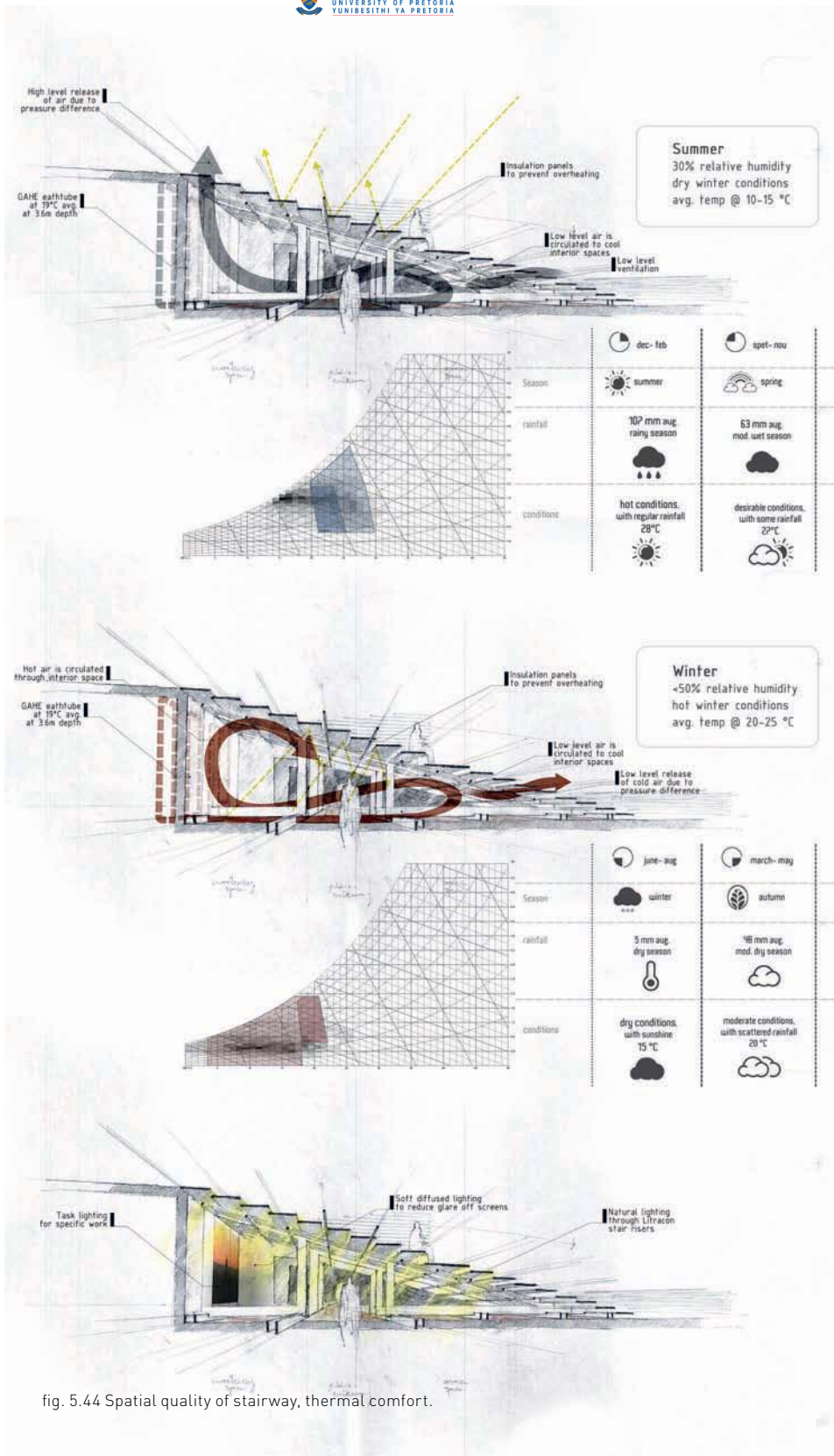






fig. 5.44 Spatial quality of stairway, thermal comfort.

## Materials»

The choice of materials responds to the quotidian context of the site. The site of the Urban Cavity contains a palimpsest of textures and meaning (fig. 5.45), where the design includes these materials to the design of the stairway, either highlighting them or blending in with the context (fig. 5.45). The primary materials used in the construction of the stairway are discussed below:

	material	description	application
<b>ThermoWood</b> lightweight primary timber structure		<ol style="list-style-type: none"> <li>1. Timber is lightweight construction, allowing for the simple addition of a new structure within the existing basement (Urban cavity) of Munitoria.</li> <li>2. ThermoWood heat-treated wood gives the timber the characteristics of a hardwood and makes its durable, weather resistance and finishes the wood.</li> <li>3. Pine is a locally harvested timber, and is a renewable resource ('new light' material).</li> </ol>	<ul style="list-style-type: none"> <li>- Used for the primary support structure of the Stairway, and other structural supports.</li> <li>- Interior floor spaces to be finished with suspended timber flooring.</li> <li>- Framing structure of existing basement wall textures.</li> <li>- Used to highlight spaces within the Stairway.</li> </ul>
<b>Steel fibre reinforced concrete</b> extension of urban surface		<ol style="list-style-type: none"> <li>1. Steel fibre reinforced concrete is significantly stronger than conventional reinforced concrete, and has better impact resistance.</li> <li>2. The steel fibre reinforcing allows for a slender member, that is strong, durable and water-tight.</li> <li>3. The precast members provide an accurate surface finish and allows for standardization.</li> </ol>	<ul style="list-style-type: none"> <li>- Robust surface finish of Stairway's skin, where concrete is an extension of the everyday urban surface.</li> <li>- A weather tight finish to the Stairway, protecting the interior spaces from the elements.</li> <li>- Used as a lightweight footing for the timber structure, distributing load to the existing basement.</li> </ul>
<b>Litracon</b> translucent concrete light transmitting surface		<ol style="list-style-type: none"> <li>1. Litracon is used to animate the interior spaces, below the stairway; providing a soft lighting of the interior spaces.</li> <li>2. The translucent concrete allows for a connection between the spaces below and above the urban surface, giving a hint on the activities on the other side of the surface.</li> <li>3. Provides a water-tight finish to the Stairway's surface.</li> </ol>	<ul style="list-style-type: none"> <li>- Translucent finish to stair treads, to allow visual connection between inside and outside.</li> <li>- Allow soft lighting of the interior space of the surveillance control space.</li> <li>- A weather tight finish to the Stairway, protecting the interior spaces from the elements.</li> </ul>
<b>GKD MediaMesh</b> translucent digital display screen		<ol style="list-style-type: none"> <li>1. The MediaMesh is a durable woven stainless steel / LED screen, used for external displays.</li> <li>2. Similar to the concept of the translucent concrete, the MediaMesh is used as a translucent screen to show the relationship between various spaces and the city.</li> <li>3. The LED display is a low energy screen, reducing energy consumption of the space.</li> </ol>	<ul style="list-style-type: none"> <li>- Mesh screen used as robust public displays of surveillance footage from CCTV cameras.</li> <li>- Translucent screen display, creating a continuity of space, as well as providing an augmented experience of the urban environment.</li> </ul>

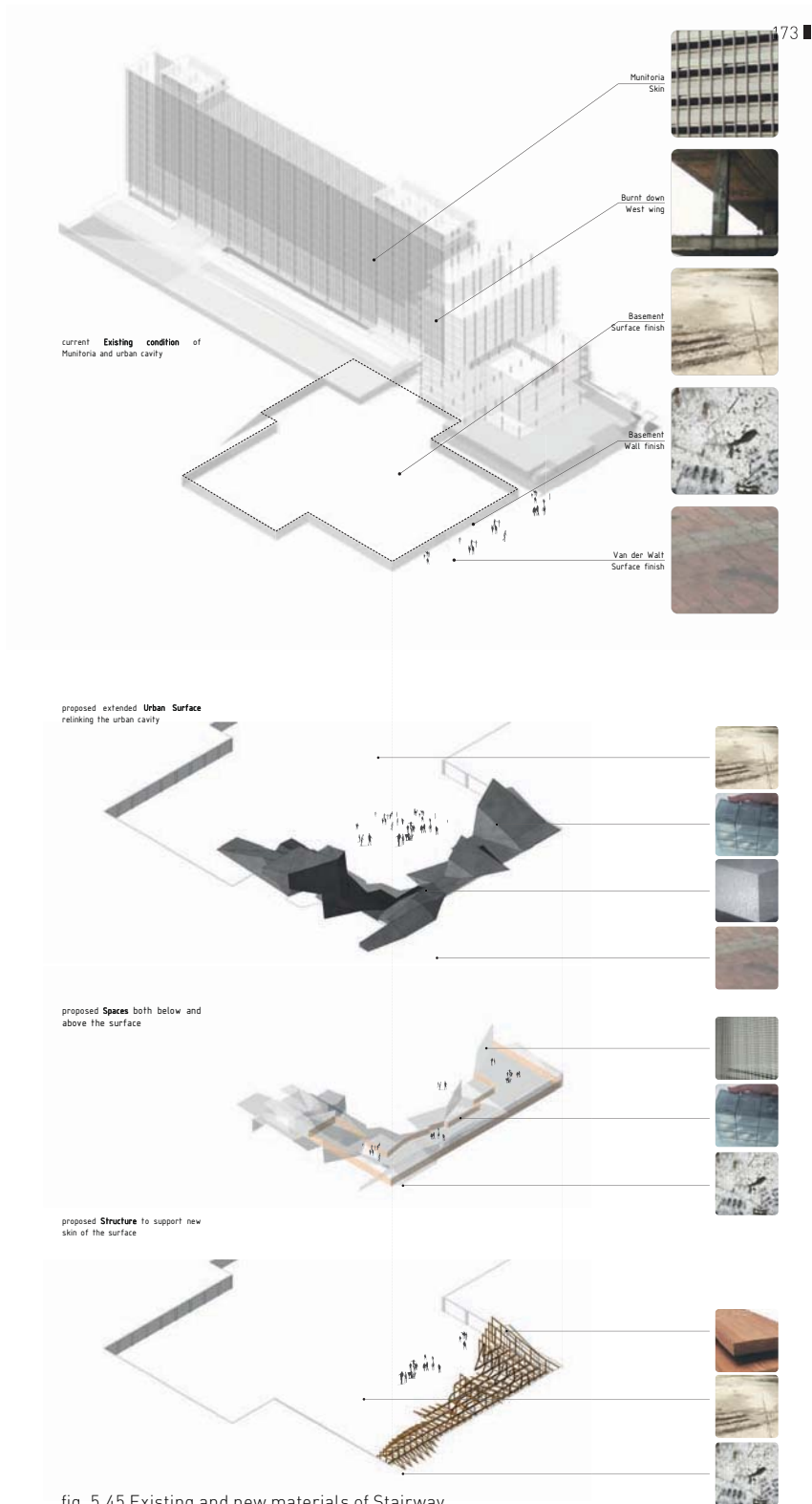
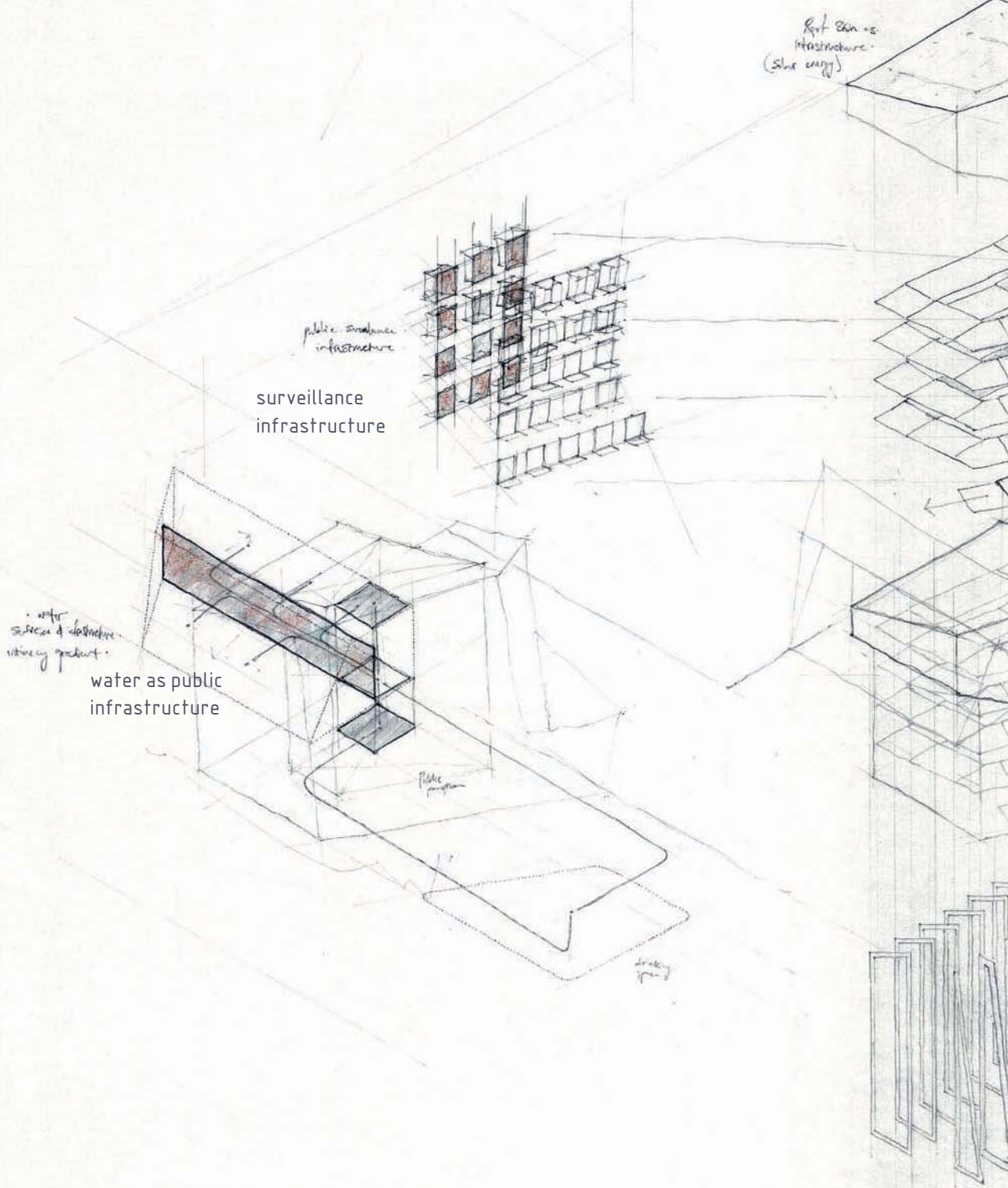
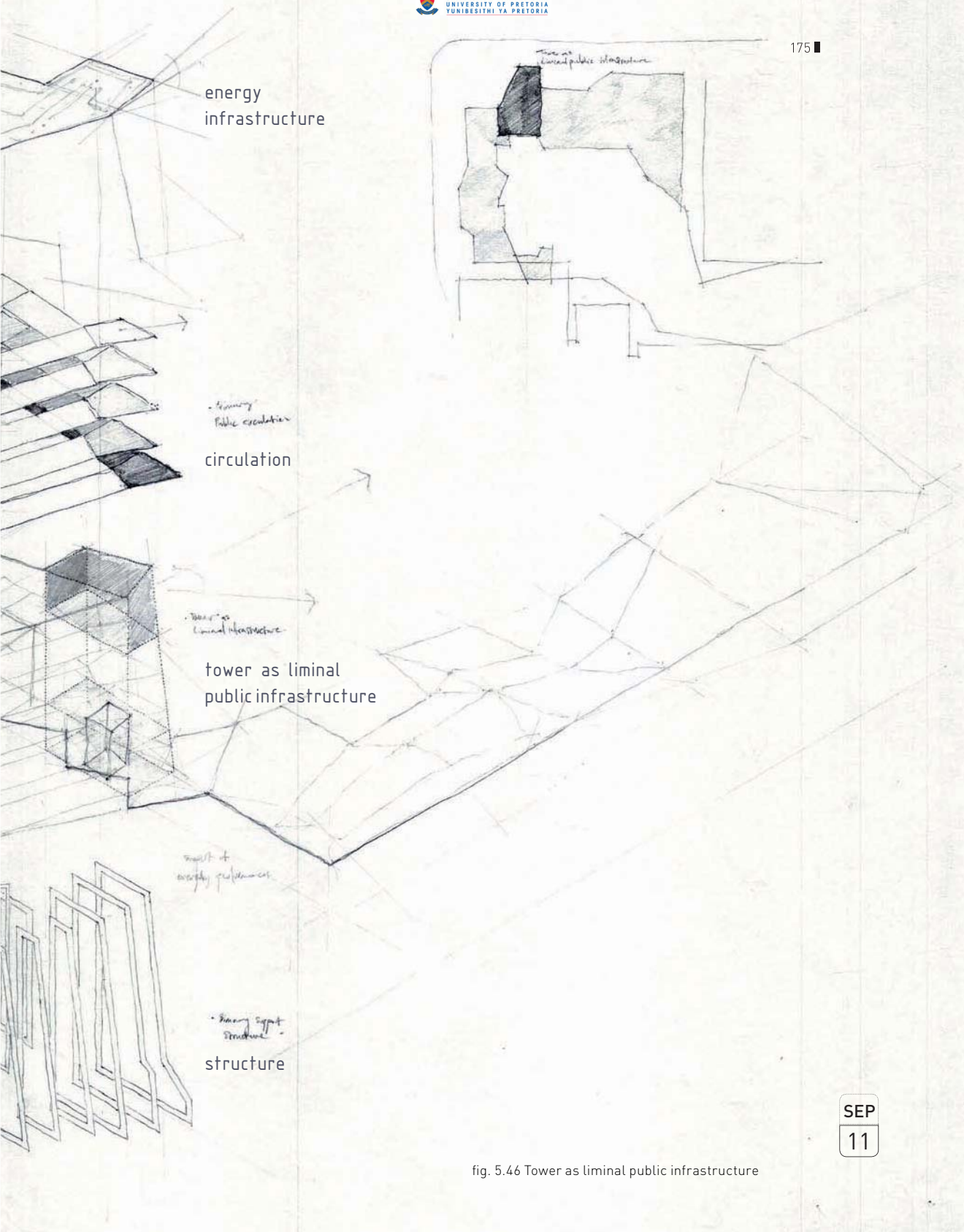


fig. 5.45 Existing and new materials of Stairway





energy  
infrastructure

Primary  
Public circulation

circulation

tower as liminal  
public infrastructure

Fragment of  
energy infrastructure

Primary Support  
Structure

structure

fig. 5.46 Tower as liminal public infrastructure

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### Surveillance»

The concept of everyday spectacle is an extension of the interpretation of surveillance. Surveillance is presented to the stairway on both a public and private level. The secretive spaces below the stairway, houses the control surveillance space for the city (fig. 5.46). While the spaces above allow for the viewing of the spectacle of the everyday, an augmented experience of the city (fig. 5.46).

Public surveillance is provided through a form of 'participatory panopticon' (BLDGBLOG, 2006). The concept of a public surveillance pod is developed, where both the possibility of public surveillance and an augmented form of experiencing the city is provided (fig. 5.47). In a sense, the pod creates a surreal digital experience of the city, extending the interpretation of spectacle, surveillance and experience (fig. 5.48).

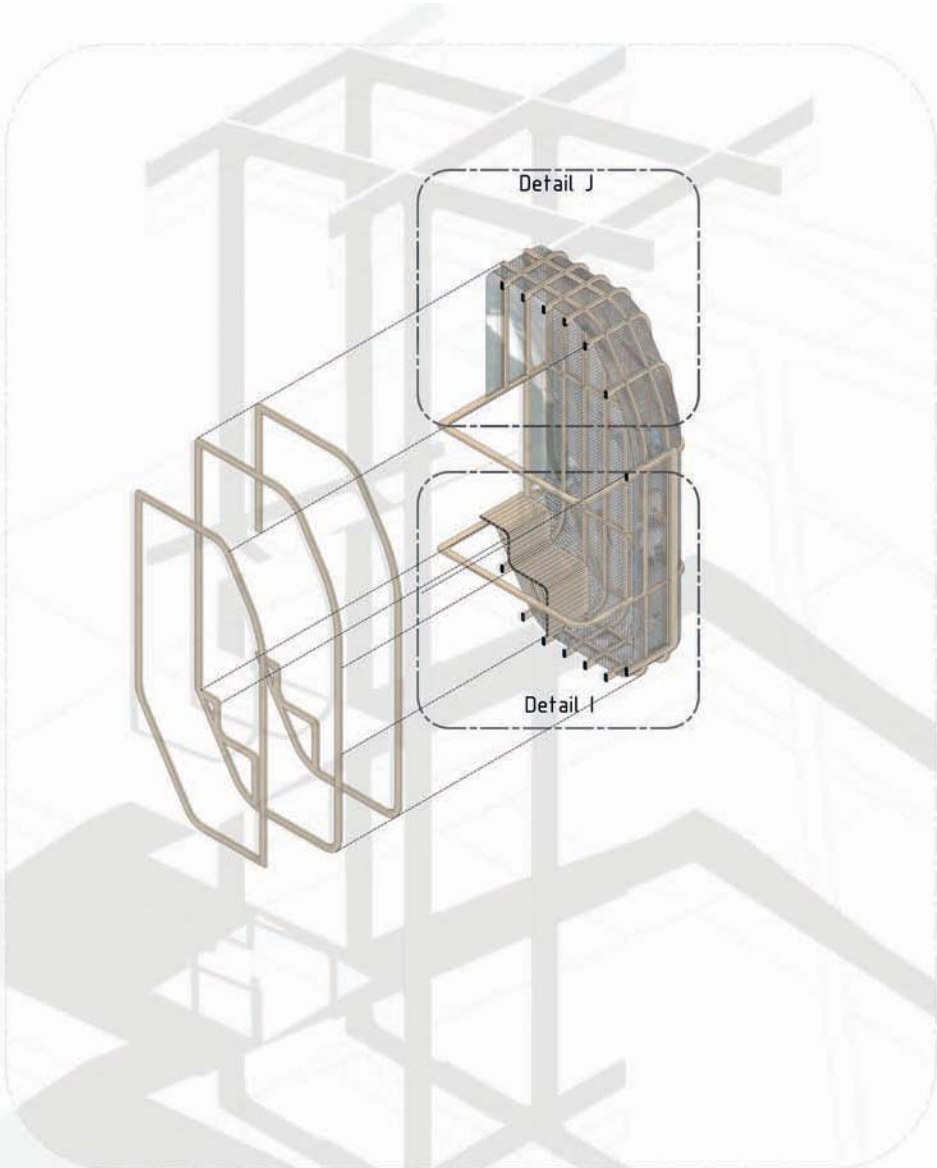


fig. 5.47 Surveillance pod exploration of Stairway.



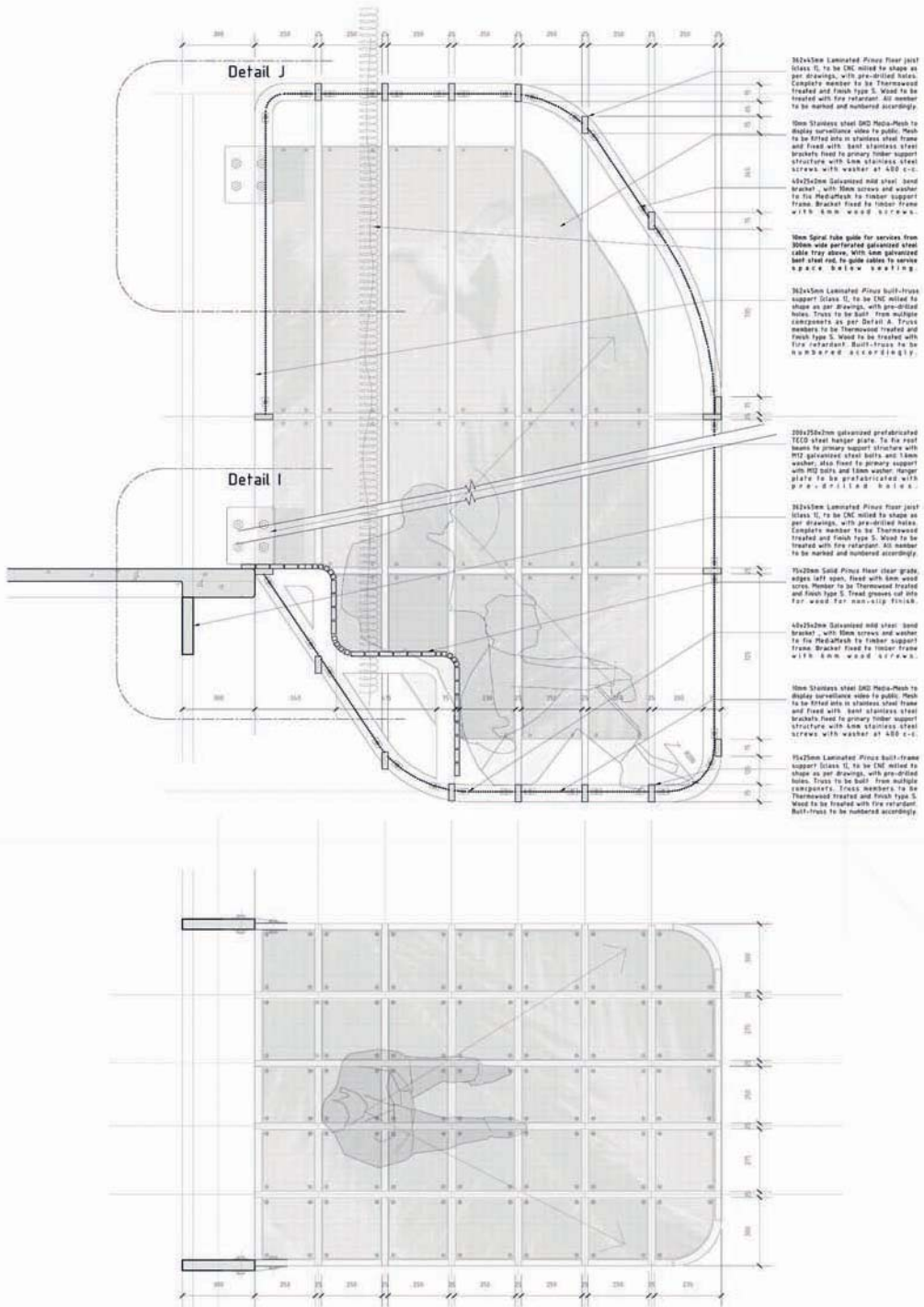


fig. 5.48 Detail exploration of surveillance pod tectonics

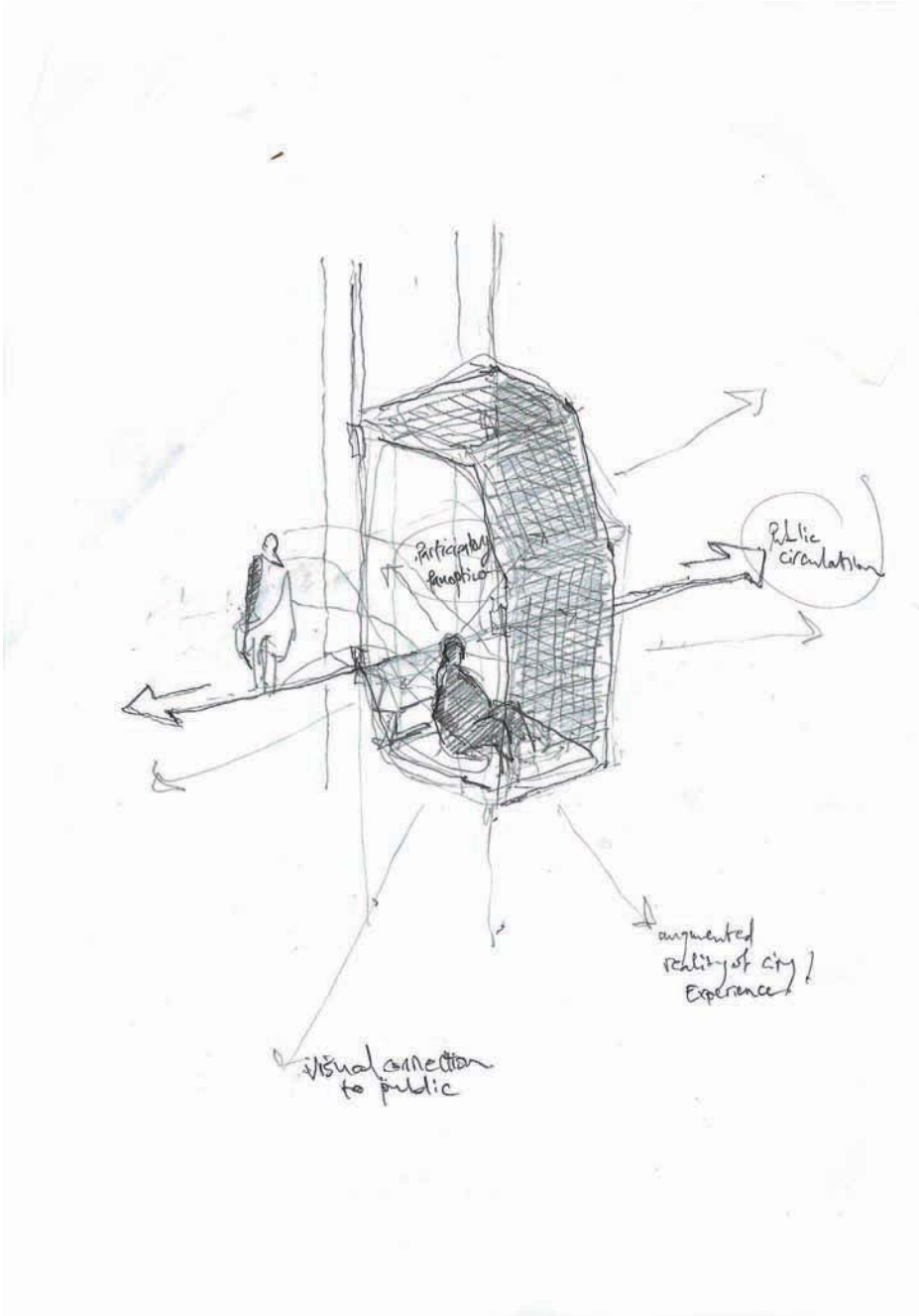


fig. 5.49 Concept exploration of surveillance pod tectonics

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## Water»

Water is presented to the site on an everyday level of activity. Water as an infrastructure has been defragmented so as to respond on multiple levels to the user. At the one end of the spectrum water as an infrastructure is represented in the form of public ablutions; where the intimacy gradient has been extruded to respond to multiple levels of the quotidian context, stringing a narrative between the toilets, washing basins and the 'urban basin'. Rainwater is also harvested from the site and recycled to close the loop of this process, where the structure houses all the necessary services within the stairway (fig. 5.50).

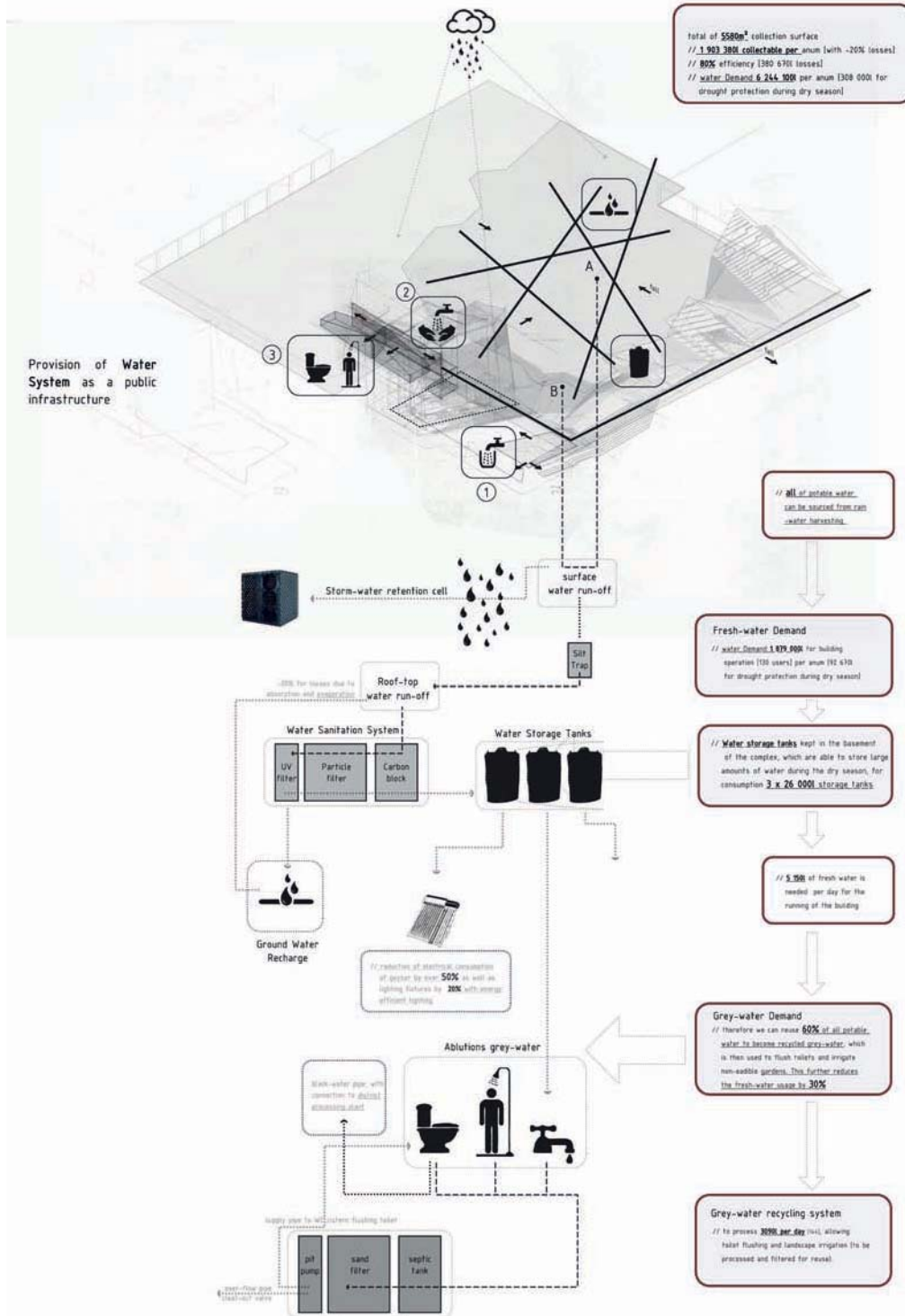


fig. 5.50 Water as a public infrastructure

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# Design Synthesis

The architectural investigation lends itself to an iterative design process. The aim of the dissertation was to investigate to spectacle of the everyday within public space (fig. 5.51). Here the concept of the spectacle morphed into the idea of surveillance. The site selected revealed the potential of liminal space within the urban context. The design of the stairway manifested from the theoretical investigation, and allowed for a unique exploration of architecture dealing with the quotidian, experience and spectacle. Furthermore the building's design blurred the boundaries between conceptual development, design and technical investigation; where the identity of the design is encapsulated in an individual process.

The Stairway's design explores the multiple opportunities of architecture and design, providing a window of possibility into architecture's response to the urban context and its potential.



fig. 5.51 Spatial concept drawing of Project [March, 2011].