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InsideOut Interiors Biennale 2013

A Celebration of the Found Space

by Sariena Keuler-Venter

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
MASTER OF INTERIOR ARCHITECTURE (PROFESSIONAL)
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UNIVERSITY OF PRETORIA

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	Elana van der Wath
Course coordinator:	Jacques Laubscher (Dr)
Mentor:	Jacques Laubscher (Dr)

PRETORIA 2011

Thank you:

Raymund for the challenges.

Elana for enabling me to face the challenges.

Jacques for facilitating the solution.

Le Roux.

Chris.

Sanmari.

Chanel.

Arca.

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Faculty:	Faculty of Engineering, Built Environment and Information Technology		
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Programme:	Exhibition/Installation Design		
Site description:	Sandton Convention Centre as proto-site for travelling exhibition	Theoretical Premise:	The relationship between the user and the exhibition (inside) and the relationship between the exhibition and exhibition host (out)
Client:	The International Federation of Interior Architects/Designers (IFI)		
Users:	Any visitor with an academic or disciplinary interest in the field of interior architecture/design	Design Approach:	Developing a travelling installation for the IFI Interiors Biennale 2013 based on the IFI Interiors Declaration
		Research Field:	Urbanism and human settlements
Proto-site Location:	Erf 596 Sandown Ext. 38		
Address:	Maude Street Sandown 2196		
GPS Coordinates:	S26° 06.394' / E028° 03.221'		

In accordance with Regulation 4(e) of the General Regulations (G.57) for dissertations and theses, I declare that this thesis, which I hereby submit for the degree Master of Interior Architecture (Professional) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

I further state that no part of my thesis has already been, or is currently being, submitted for any such degree, diploma or other qualification.

I further declare that this thesis is substantially my own work. Where reference is made to the works of others, the extent to which that work has been used is indicated and fully acknowledged in the text and list of references.

Sara Johanna Keuler-Venter

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ABSTRACT

Keywords:

Interiors Biennale

Interiors Declaration

Interior design

Inside-Out

Imprint

Slotted construction

Friction fit

Plywood

Design for disassembly

Bell (Gigli, *et al.* 2007:ix) believes that "design that is good should be embedded within all that surrounds us in the unnatural world. Good design and good architecture improve all our lives – they are not just about decoration."

An understanding of what good design entails and a comprehension of the interior designer's role within the built environment and public realm could anchor this belief.

The International Federation of Interior Architects/Designers (IFI) established *Design Frontiers: The Interiors Entity* (DFIE) to define the interiors discipline for IFI stakeholders and the general public alike. The planned Interiors Biennale in 2013, the final phase of the DFIE, is intended to visualise this knowledge, actualising the global consensus as reflected in the IFI Interiors Declaration.

The objective of the dissertation is to design a travelling exhibition for the IFI Interiors Biennale 2013.

The study investigates exhibition design as a method of communicating the seven basic pillars of the interiors profession as described by the Declaration.

A normative position derived from the event title, 'designing from the inside out', establishes the premise for the design approach.

The project explores the temporary imprint that results from the relationship between the general (host structure) and the specific (installation).

While acknowledging that the design cannot be completely site specific, the proposal identifies characteristics of 'the universal exhibition host' to obtain a set of constraints that inform the design of a travelling installation. A proto-site is identified within Johannesburg, embodying the universal specification.

The site typology has the least impact on the design development with the event typology (travelling exhibition), and the design brief (IFI Interiors Declaration) driving the process. The investigation points to an adaptive solution: design for disassembly. This design philosophy influences the chosen construction and fabrication method as well as the selected material type.

The design objective is not to curate the event, but rather to provide a flexible and innovative 'kit of parts' to facilitate the projected communication needs of the client (IFI).

EKSERP

Sleutelterme:

Binne-ontwerp Biënnale

IFI Verklaring

Interieur/Binne-ontwerp

Binne-buite

Afdruk

Gleufkonstruksie

Wrywing pas

Laaghout

Ontwerp vir uitmekaarhaal

Bell (Gigli, *et al.* 2007: ix) is van mening dat "goeie ontwerp ingebed moet wees in alles wat ons omring in die onnatuurlike wêreld. Goeie ontwerp en goeie argitektuur kan ons almal se lewens verbeter – dit is nie net versiering nie." 'n Begrip van wat goeie ontwerp behels en 'n begrip van die binne-ontwerper se rol in die beboude omgewing kan hierdie mening anker.

Die International Federation of Interior Architects/Designers (IFI) het *Design Frontiers: The Interiors Entity* (DFIE) gestig om die interieurs dissipline vir die IFI belanghebbendes en die algemene publiek te definieer. Die beplande 'Interiors Biennale' in 2013 is die finale fase van die DFIE en gaan poog om die kennis soos vervat in die IFI Verklaring te visualiseer.

Die doel van die verhandeling is om 'n reisende uitstalling te ontwerp vir die 'IFI Interiors Biennale 2013'.

Die studie ondersoek uitstalling-ontwerp as 'n metode om die Verklaring se sewe basiese pilare van binne ontwerp uit te beeld.

'n Normatiewe posisie is afgelei van die biënnale titel, 'binne-buite', en stel die uitgangspunt vir die ontwerp-benadering.

Die projek ondersoek die invloed die van die tydelike verhouding tussen die algemene (gasheer struktuur) en die spesifieke (installasie).

Alhoewel die ontwerp nie heeltemal plek-spesifiek is nie, word die kenmerke van 'n universele uitstallingsruimte bepaal om sodoende 'n stel van beperkings op te stel. 'n Proto-terrein is geïdentifiseer in Johannesburg wat voldoen aan die universele spesifikasies.

Die terrein tipologie het die minste impak op die ontwerp-ontwikkeling met die uitstalling tipologie (reisende uitstalling), en die ontwerpopdrag (IFI Verklaring) as dryfveer van die proses. Die ondersoek dui op 'n aanpasbare oplossing: ontwerp vir uitmekaarhaal. Hierdie ontwerp filosofie beïnvloed die gekose konstruksie en versinsel metode sowel as die geselekteerde materiaal.

Die ontwerp-doel is nie om die rol van kurator van die geleentheid te vervul nie, maar eerder om 'n aanpasbare en innoverende "stel van dele" te ontwerp, om die moontlike kommunikasie behoeftes van die kliënt (IFI) te fasiliteer.

VOORWOORD TOT DIE IFI VERKLARING:

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Dit is eie aan die mensdom om nie net ruimtes te gebruik nie, maar ook om dit te vul met betekenis en prag.

Ruimtes ontwerp met vaardigheid kan 'n belewing van doelgerigtheid wek, of 'n gevoel van die onbeskryflike in ons aanwakker.

In die ruimtes wat ons hoog op die prys stel, ondervind ons nie net 'n belewing van plek nie, maar ook 'n gevoel van identiteit. Die idee van menslike potensiaal word by ons tuisgebring.

Ruimtes wat ontwerp is op 'n weldeurdagte manier, dra by tot ons vermoëns om te leer, te besin, te verbeel, te ontdek en te skep.

Voortreflike ruimtes is broodnodig vir die vorming van 'n kultuur van kreatiwiteit. Dit bevorder die bou van verhoudings tussen mense, idees en denkskole.

As kundiges in ontwerp, bearbei ons kennis ons om ruimtes te skep wat menslike behoeftes aanspreek. Hierdie ruimtes, bedoel vir menslike gebruik, is ons spesialis veld, ons passie en ons plig.

Ons skep ruimtes op 'n verantwoordelike manier. Ons voer ons professionele taak uit met die hoogste agting vir die gebruik van die wêreld se beperkte ekonomiese- en natuurlike hulpbronne, op 'n volhoubare manier. Ons ontwerp vir gesondheid, veiligheid, welsyn en die algemene publiek se behoeftes.

Ons ontwerp immers vir die Mensdom, ons uiteindelike kliënt.

Ons vorm die ruimtes wat bydra om menslike ondervindings te vorm.

Dit is wat ons doen, wat ons skep en wat ons aanbied.

Dit is hoe ons 'n bydrae lewer en so 'n regmatige plek verdien in die gemeenskap.

Dit is hoekom ons werk onmisbaar is vir ons kliente, nodig is vir ons samelewing en belangrik is vir onsself.

Dit is hoe ons 'n verskil kan maak en dien as ons motivering om hierdie waardige professie te beoefen.

Translated by author from the original IFI Declaration (chapter 04) to relate document to South African context.

DIE IFI VERKLARING SEWE KERN BEGINSELS:

1. WAARDE

Die beroep bied leierskap en maak gebruik van 'n iteratiewe en interaktiewe proses wat ontdekking, vertaling en validering insluit. Dit verskaf, meetbare uitkomste in die verbetering van binne-ruimtes en in die lewens van die mense wat die ruimtes gebruik. Hierdie proses lei tot ekonomiese-, funksionele-, estetiese- en sosiale voordele wat kliënte help om die waarde van hul besluite te verstaan en kliënte in staat stel om beter besluite te neem wat voordelig is vir gebruikers en vir die samelewing. Dit word aanbeveel dat die beroep dien as 'n betroubare stem en voortgaan met die ontwikkeling van verskeie modelle in die konteks van fisiese, emosionele en gedrags-patrone van die gebruikers.

2. RELEVANSIE

Die beroep definieer projekte by hulle aanvang, en stel menslike ervaring op alle vlakke hoog op die prys. Binne ontwerpers en binne-argitekte sintetiseer mens- en omgewing ekologieë en vertaal wetenskap in prag wat al die sintuie aanspreek. Die praktisyn luister, neem waar, analiseer,verbeter en skep oorspronklike idees, visioene en ruimtes van meetbare waarde.

3. VERANTWOORDELIKHEID

Die verantwoordelikheid van binne-ontwerpers en binne-argitekte is om die praktyk en die nodige kundigheid te definieer, onsself en die publiek op te voed, en ons te posisioneer in die openbare sfeer as kundiges in die bou- omgewing. Die verantwoordelikheid van die binne-ontwerpers en die binne-argitekte is om die beroep en maatskaplike welsyn te bevorder.

4. KULTUUR

As 'n kreatiewe bedryf, is binne ontwerp en binne-argitektuur 'n wyse van kulturele produksie. 'n Plek-maker wat kulturele hulpbronne interpreteer, vertaal, en wysig. In 'n globale wêreld, moet binne ontwerp en binne argitektuur' n rol speel in die fasilitering van die behoud van die kulturele verskeidenheid.

5. SAKE

Die beroep van die binne ontwerp en die binne argitektuur bied waarde aan die belanghebbendes. Dit verhoog sosiale welsyn as 'n faktor van ekonomiese ontwikkeling. Dit bied strategiese leierskap in denke wat in 'n multi-vlakwyse opbrengs op beleggings lewer. Binne ontwerpers en binne-argitekte is voorstanders van onderwys vir die voortgesette voordeel en bewustheid van die professie.

6. KENNIS

Teoretiese, toegepaste, en ingebore kennis is fundamenteel tot die praktyk van binne ontwerp en die binne argitektuur. Die samevloeiing van omgewingsielkunde en die wetenskap van antropometrie is van kritieke belang vir die kwantitatiewe en kwalitatiewe kennis wat deel vorm van die praktyk van binne ontwerp en die binne argitektuur.

7. IDENTITEIT

Binne ontwerpers en binne-argitekte bepaal die verhouding tussen mense en ruimtes, gebaseer is op psigologiese en fisiese parameters, om die kwaliteit van lewe te verbeter.

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VOCABULARY AND ABBREVIATIONS

Interiors biennale

An international interior design exhibition taking place every other year

Inside-Out design

A design approach from the occupant's perspective: from the inside (Franck and Lepori 2007:19.

Co-dependence

The mutually beneficial relationship between the IFI Interiors Installation (event structure) and the exhibition venue (host structure).

Imprint

- the slight, temporary adaptation of the event structure to the host structure for the duration of the event (IFI Interiors Biennale 2013)
- the lasting effect the event has on the interior design community and discipline.

Installation

The architectural approach to the host structure: The IFI Interiors Installation is placed within the boundaries of the exhibition building. The Installation may be influenced by the host, but the fit is not exact and should the Installation be removed then the building would revert to its original state (Hay 2007:35).

Friction fit

A fastening of two parts which is achieved by friction after the parts are pushed together, rather than by any other means of fastening.

IFI

The International Federation of Interior Architects/Designers

DFIE

Design Frontiers: The Interiors Entity

SCC

Sandton Convention Centre

DfD

Design for Disassembly

CNC

Computer Numerical Control

01 introduction

FIGURE 1.1 Elle Decoration stand at Grand Designs Live 2011

I am *"...concerned by the perception that design is something that we don't really need, that it is a fashionable or luxurious extra. Design that is good should be embedded within all that surrounds us in the unnatural world. Good design and good architecture improve all our lives – they are not just about decoration."*

Gigli *et al* 2007:ix

If architecture is concerned with creating spatial enclosures by means of boundaries, then interiors discipline considers the alteration, rehabilitation or adaptive reuse of the spatial volume within those boundaries. The human scale, well-being and experience lies at the heart of the spatial exploration and design process.

This project accepts the term '*interiors discipline*', as defined above, to consider both interior design and interior architecture (as it is used at the University of Pretoria). For the sake of consistency and to create a sense of unity, the term 'interior design' will be used to describe the interiors discipline in this document.

The interior design discipline appears to be facing an identity crisis. It is commonly described as something that it is not. Currently, it exists on the fringes of both architecture and interior decoration.

To define the discipline, The International Federation of Interior Architects/Designers (IFI) hosted Design Frontiers: The Interiors Entity (DFIE) Global Symposium in February 2011. The event culminated in the signing of the first IFI Interiors Declaration. The Declaration represents a consensus of interior organisations from around the world regarding what the field of interior design entails. The final phase of the DFIE, namely the IFI Interiors Biennale 2013, is intended to visualise this core knowledge, actualising the global consensus as reflected in the IFI Interiors Declaration.

The role of the interior designer falls within the realm of the temporary, and this is what the dissertation is investigating. The project examines exhibition design as a division of interior design. As this study deals with interior design, the influence of and the response to other fields of design are considered and investigated, setting the parameters for the resolution of the design framework.

The objective of the dissertation is to design a travelling exhibition for the IFI Interiors Biennale 2013. The study investigates exhibition design as a method of communicating the basic pillars of the interiors profession, as described in the IFI Interiors Declaration.

The shortcomings and opportunities of the interiors exhibition practice are explored by applying interior design instruments.

1.1 OVERVIEW

The dissertation is organised into an introductory chapter to establish the premise of the problem statement and design intent. The aims and objectives set out in this chapter will be subjected to a theoretical and contextual synthesis formulated in Chapters 02 and 03.

Exhibition, in particular travelling exhibition typologies, and their relation to the interiors discipline, are evaluated in Chapter 04. This leads to the choice of proto-site, Sandton Convention Centre, as suitable host, based on both its universal qualities and the IFI event criteria.

Chapter 05 explores the concept 'design for disassembly' and the influence it has on the design development discussed in Chapter 06. The final design proposal articulated in Chapter 06 is technically resolved in Chapter 07.

1.2 PROBLEM STATEMENT

DFIE was conceived with the understanding that interiors professionals in the majority of nations encounter disciplinary confusion and a lack of clarity that extends to stakeholders and the general public (Powell 2011). Brooker and Stone (2007:125) concur that there is a general identity question that has been bothering the profession. Faced with a multitude of interpretations and divisions within the field, as well as rapidly expanding respect and influence, the need for consensus and resolution has become critical. The first two phases of the DFIE (survey and symposium) produced the Interiors Declaration; a consensus-based document.

The Declaration represents a consensus from the interiors profession, but lacks the communication of this core knowledge with the general public.

"To the broader public, the interior design profession is misunderstood and undervalued. As a brand, it is considered to be inferior to architecture."

(Mitchell and Rudner 2007: 67)

1.3 SUB-PROBLEM

Events branding themselves as interior design exhibitions tend to focus on furniture and object design rather than space-making and volumetric expression, as is synonymous with the interiors discipline.

1.4 AIMS

The dissertation aims to reflect the interiors identity, as investigated by the IFI through the Interiors Biennale 2013.

The design objective is to investigate an exhibition (for the IFI Interiors Biennale 2013) aimed to communicate and promote the core knowledge of the discipline, as identified in the IFI Interiors Declaration.

Ideally, the event should communicate these intentions to all visitors; the industry professionals and public alike.

The project will explore the temporary relationship that exists between the general (host structure) and the specific (installation), influenced by the nomadic nature of the exhibition, which migrates between hosts around the world.

1.5 RESEARCH METHODOLOGY

Review of interior design literature and theoretical studies.

Critical investigation of the current practices based upon understanding gained from the literature and theoretical review.

Contextual analysis of universal exhibition space typologies with visits to accessible exhibition hosts.

Study of interior design exhibition precedents and discipline branding.

Conducting of interviews with exhibition designers.

Material and joint exploration by means of prototyping.

1.6 RESEARCH QUESTIONS

a. How could the host building influence the interior design exhibit?

b. In what way could the event typology (traveling exhibition) influence the interior design exhibit?

c. How could elements of the interior design discipline as a brand (represented in the IFI Interiors Declaration) be translated into an exhibition?

1.7 DELIMITATIONS

The dissertation will limit itself to the study of different design exhibition methods, focusing on the interior design exhibition.

The focus will be on the Interiors Biennale 2013 as proposed by the IFI as narration.

The core knowledge of the IFI Interiors Declaration will be used as framework with the author's intuitive approach guiding the exhibition design.

The design objective is not to curate the event but rather provide a flexible and innovative 'kit of parts' to facilitate the projected needs of the client.

Two exhibition host typologies are considered: the created host structure and blank host structure.

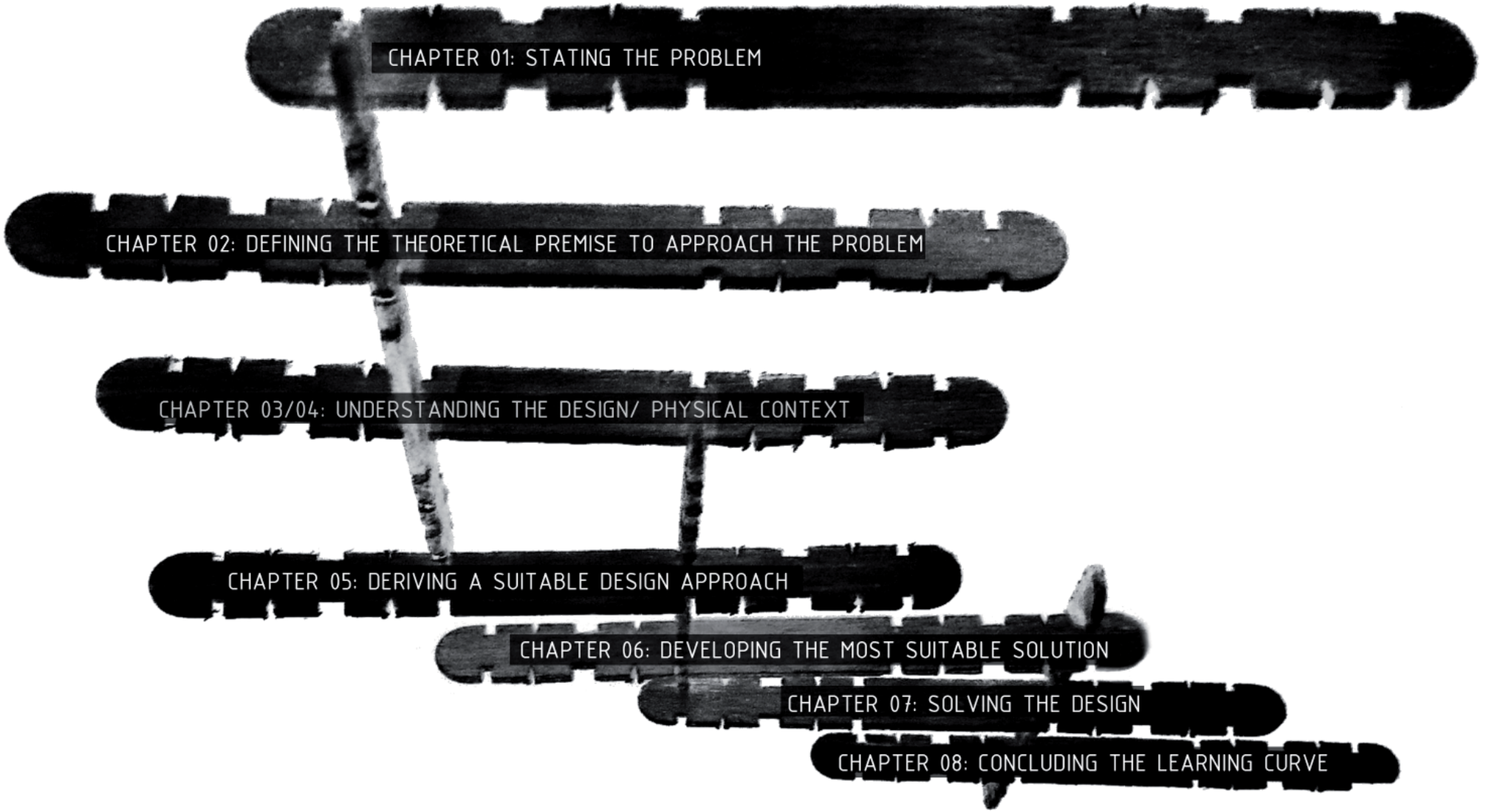
The interior design exhibit will be introduced to a proto-site to investigate the exhibit's habitation of the host.

Movement analysis and applied systems will be limited to behavioural, use and access patterns within the typical host structure.

1.8 ASSUMPTIONS

The inaugural IFI Interiors Biennale 2013 will be an expression of the final phase of DFIE.

South Africa, more specifically Johannesburg, will be appointed as the inaugural host for the migrating exhibition.


CHAPTER 01: STATING THE PROBLEM
CHAPTER 02: DEFINING THE THEORETICAL PREMISE TO APPROACH THE PROBLEM
CHAPTER 03/04: UNDERSTANDING THE DESIGN/ PHYSICAL CONTEXT
CHAPTER 05: DERIVING A SUITABLE DESIGN APPROACH
CHAPTER 06: DEVELOPING THE MOST SUITABLE SOLUTION
CHAPTER 07: SOLVING THE DESIGN
CHAPTER 08: CONCLUDING THE LEARNING CURVE

02 theoretical premise

2.1 INSIDE-OUT

The realm of theoretical discourse is a foundation for the perspectives that guide the choice of organising design principles and design constraints. Rowe (1987:115) elaborates that theory is assumed to be about general principles with applicability beyond specific cases, and, whether it comes by way of systematic speculation and codification or by way of more indirect experience, to be well substantiated.

What follows is the derivation of a normative position presenting the location and identification of an issue under contention, an assessment of prevailing practise and a counterproposal with its rationale.

The normative position, 'designing from the inside out', establishes the premise for the design approach. Co-dependent design, or symbiosis, is investigated to describe the relationship between the installation and host. This temporary relationship and the migrating nature of the exhibition provide the backdrop for the 'imprint' as well as 'movement and nomadism' theories.

Johnson (1987:30) states that the inside refers to a location that is physically or symbolically separated from another location that is exterior to it. The locations of inside and outside generate different spatial experiences and, by association, suggest different perspectives of the world. We use the spatial and experiential distinction between inside and out to help structure our understanding of the world.

What perspective is to be adopted toward the architectural enclosure?

Franck and Lepori (2007:19) ask, if an enclosure has a roof and walls, "do we imagine being inside the *space*, or do we imagine being on the exterior, contemplating the *form* the shelter makes?"

When describing a residence with the word 'house', it evokes an image of the exterior. If, however, one accepts the word 'home', a series of sentimental and sensorial moments come to mind, a sense of place (Spankie 2007:243). Inside, we are surrounded; we occupy the spatial depth and shadows, engaging all the senses. Outside, we are confronted by surface; we can see the exterior shell and perhaps see into the structure, but not experience it.

"Outside we are spectators; inside we are occupants."

(Franck & Lepori 2007:19)

Therefore, when accepting that the interior is "a contextualized backdrop for all human engagement" (Caan 2007:52) and further describing the human as the occupant, it stands to reason that interior design should be approached from an occupant's perspective – from the inside.

Saarinen (1956) notes that "one should always design a thing by considering it in its next larger context – a chair in a room, a room in a house, a house in an environment, an environment in a city plan." When considering Saarinen's approach and accepting that any movement from the inside out depends on a previous intake from the outside, one could argue that when designing for the human occupant, the approach should be to design from the inside out. According to Lepori (2007:5), design from the inside out challenges the status quo approach. She states that the traditional design approach, based on market values, abstract personal aesthetic criteria, technical standards and mechanical reproduction is not invalid but rather incomplete. This conventional approach lacks concern for human, physical and emotional values.

Design from the inside out could be facilitated by two templates. One involves the language of shapes and materials and is concerned with a revaluation of the senses as a means of relating to the world. The other is related to an idea of design as opportunity for socio-cultural as well as personal transformation.

Caan (2007:52) defines the interior as a contextualised backdrop for all human engagement as being more than the sum of its parts. According to Lao Tse (Kakuzo 1998), "the reality of the building does not consist in roof and walls but in the space within to be lived in." Interiors have at their core people and space.

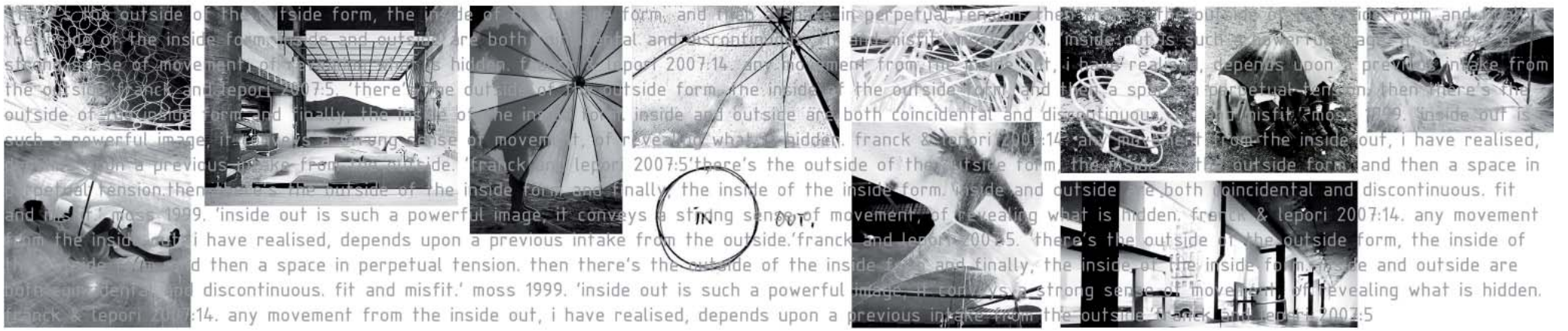


FIGURE 2.1 Collage depicting inside-out approach

2.2 CO-DEPENDENT DESIGN

Co-dependence, also known as symbiosis, describes a mutually beneficial relationship between different people or groups (OUPSA & DUSAE 2010). When the concept is applied to the built environment, it could suggest inter-reliant architectural systems.

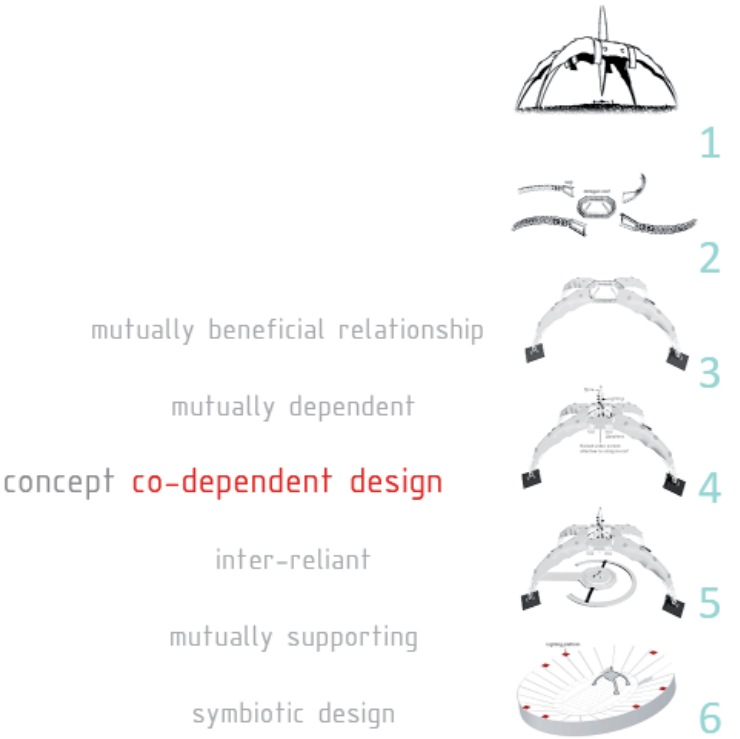
At the Edinburgh College of Art, it is taught that all interior design sites and conditions are architectural (Milton 2007:7). Thus, there exists a physical dependency of interior design on the architectural site.

FIGURE 2.2 Collage translating inside-out's dependence on a previous intake from the outside-in, photos taken at SCC

Caan (2007:54) makes the analogy that the interiors discipline is to the built environment what psychology is to the world of science. She describes the parallel between architecture and interior design, not by means of physics or structure, but psychology and the behavioural sciences.

The beginning of the 20th century featured an understanding of human health, that was dominated by a biomedical perspective, and characterised by a point of view in which "health was defined as the absence of illness" (Uskul & Sherman 2009). This view has been replaced by a bio-psychosocial model that emphasises the role played by socio-cultural forces in the shaping of health and related psychological experiences (Engel 1977). In 1948, the World Health Organization (WHO) defined health 'as a complete state of physical, mental and social well-being.

When agreeing with Lepori (2007:5) that "the built environment influences people both physically and emotionally", it is reasoned that by designing the built environment, we produce values in relation to the occupant and his 'health'.



If interior design is dependent on the architectural shell as site, and architecture relies on the interior qualities for the occupant's trinity of 'well-being' and behavioural sciences, one could describe the relationship between interior design and architecture as co-dependent.

This project applies the theory to the relationship between the IFI exhibition (event structure) and the exhibition host. The U2 360° stage (2008) by Mark Fisher is used as precedent for this type of relationship. The 360° stage is seen as the event structure. The tiered football stadiums (which are the preferred venues) are seen as the host structures. The event structure is dependent on the existing services offered by the host structure. In return, the 360° stage design can increase the capacities of the venues by about 15–20%, which benefits both the host and event (Waddell 2009). The stage also evokes a temporary sense of place. A U2 fan describes the stage with the words, "there is no destination, only a feeling" (Blogger 2009).

FIGURE 2.3 U2 360° stage co-dependent relationship with football stadium

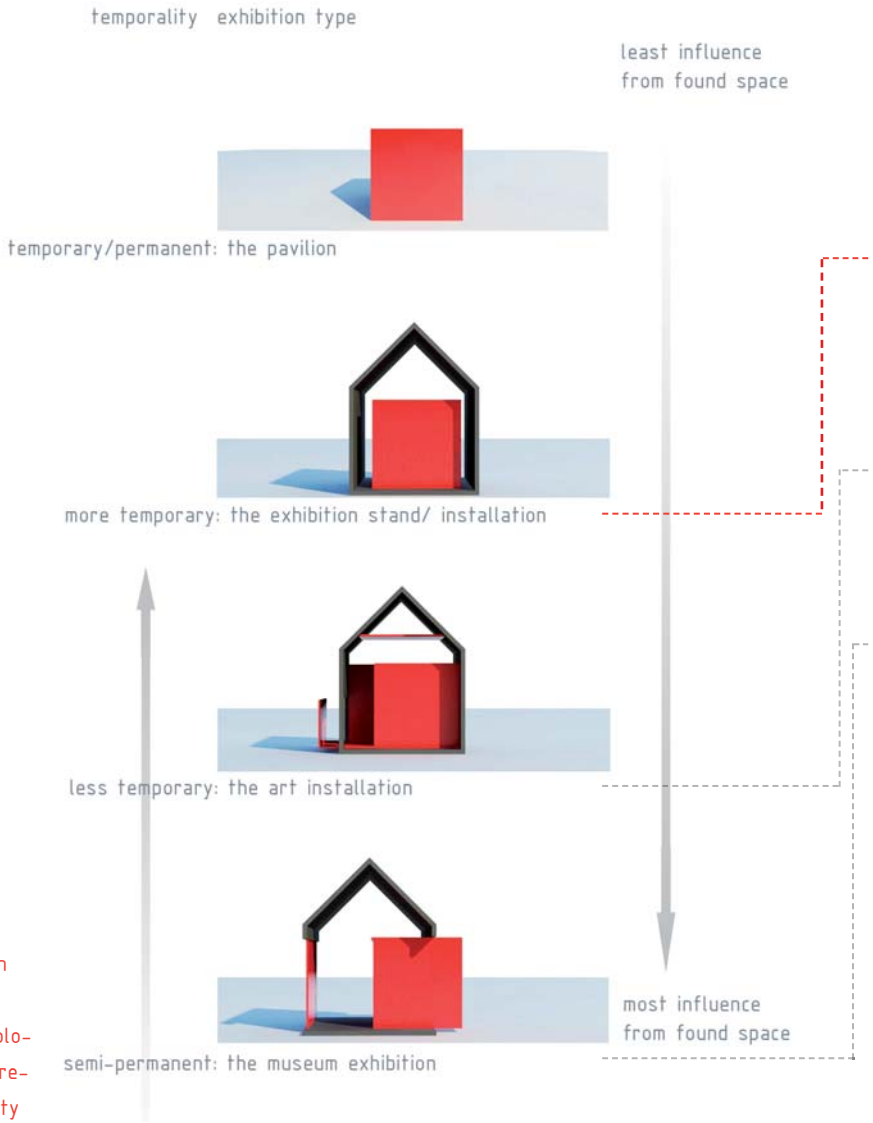


FIGURE 2.4 The design approach correlated with exhibition typologies and their related temporality

2.2.1 THE DESIGN APPROACH

Hay (2007:35) describes interior design as 'the spatial manipulation of an existing building whilst engaging its structural DNA, history, context, orientation and proposed programme.' He classifies three architectural approaches to facilitate these structural and spatial changes:

Installation

"The new elements are placed within the boundaries of the building. The design or grouping of these elements may be influenced by the existing, but the fit is not exact and should the elements be removed then the building would revert to its original state." Hay (2007:35)

Insertion

"If a new autonomous element, the dimensions of which are completely dictated by those of the existing, that is, it is build to fit, is placed within the confines of the existing." Hay (2007:35)

Intervention

"If the existing building is so transformed that it can no longer viably exist independently and the nature of the remodelling is such that the existing and new are completely intertwined." Hay (2007:35)

Hay's architectural approaches could also be translated through the relationship between an exhibition and its host. Locker (2011:07) describes exhibition design as being symbiotic and experimental in nature. She states that the discipline overlaps a wide range of design subjects in order to communicate clearly, but in terms of spatial intervention, interior design is its closest relative.

The the IFI Interiors Biennale 2013 would approach and react to the various exhibition sites as an 'installation'.

dictionary defiinition (oupsa & dusae 2010): to make an impression on, to fix an idea firmly in some one's mind, a mark or outline made by pressing something on to a softer substance, a lasting effect. the project specific definition: the slight, temporary adaptation of the event structure (IFI Installation) to the host structure (exhibition venue) for the duration of the event, lasting effect the event has on the design community and discipline, effect transferred to client. dictionary defiinition (oupsa & dusae 2010): to make an impression on, to fix an idea firmly in some one's mind, a mark or outline made by pressing something on to a softer substance, a lasting effect. he project specific definition: the slight, temporary adaptation of the event structure (IFI Installation) to the host structure (exhibition venue) for the duration of the event, lasting effect the event has on the design community and discipline, effect transferred to client. dictionary defiinition (oupsa & dusae 2010): to make an impression on, to fix an idea firmly in some one's mind, a mark or

2.3 IMPRINT

An imprint is to make an impression or mark on, to fix (an idea) firmly in someone's mind (OUPSA & DUSAE 2010). It also describes a mark or outline made by pressing something onto a softer substance; it could also be a lasting effect.

The U2 360° stage (2008) by Mark Fisher remains mostly identical in design and construction between host venues. There exists, however, a slight variation. The site preparation and base constructed prior to the stage construction is suited to the specific host and also managed and constructed by the host agent (Waddell 2009). The event lighting platforms utilise the host lighting pylons to latch on to. This variation and adaptation to the host structure, existing in the joint between the host and otherwise standard event structure, will be known as the imprint.

The project specific definition of imprinting could be relayed as the slight, temporary adaptation of the event structure to the host structure for the duration of the event. It could also describe the lasting effect the event has on the design community and discipline, which could also be transferred from the designer to the client. The imprint theory also depicts the impression the exhibition leaves on the host community.

FIGURE 2.5 Growth imprint on aloe leaf relating imprint theory

2.4 MOVEMENT AND NOMADISM

The first dimension in pictoral form is created when a "point sets itself in motion...The point moves...and the line comes into being. If the line shifts to form a plane, we obtain a two-dimensional element. In the movement from plane to spaces, the clash of planes gives rise to body (three dimensional)" (Klee 1961).

The African nomadic structure serves as home, meeting place, religious and political institutional symbol. According to Prussin (1995:2) it recognises changes in the nature of the environment, occupancy and mobility, and accommodates variations in lifestyle and social structure by shifts between sedentary and nomadic existence.

The IFI Interiors Biennale 2013 travelling exhibition consists of planar surfaces that shift to create a three-dimensional installation. During transport the planes explore the available space inside the intermodal container within a two-dimensional capacity. For the duration of the Biennale, the planes investigate and populate the host, shaping a three-dimensional space. The fourth dimension, time, is added when the user is introduced to the exhibition volume. Holl (1996:11) describes a movement through space with "a twist and turn of the head, mysteries gradually unfolding, fields of overlapping perspectives charged with a range of light. A range of smell, sound, and material".

Prussin (1995:xi) discusses the importance of the built environment, material culture, and collective creativity within the African nomadic culture. She encourages the relinquishing of the familiar preoccupation with permanent, monumental architectural structures and the appreciation for the ingenuity and complexity of nomadic structures. It is described as an environment of transformation, motion, and continuity. Mobility can be described as the underlying purpose of a nomadic structure, but a movable structure is not necessarily temporary. The inherent structural and communicative knowledge instilled by the configuration could be seen as permanent.

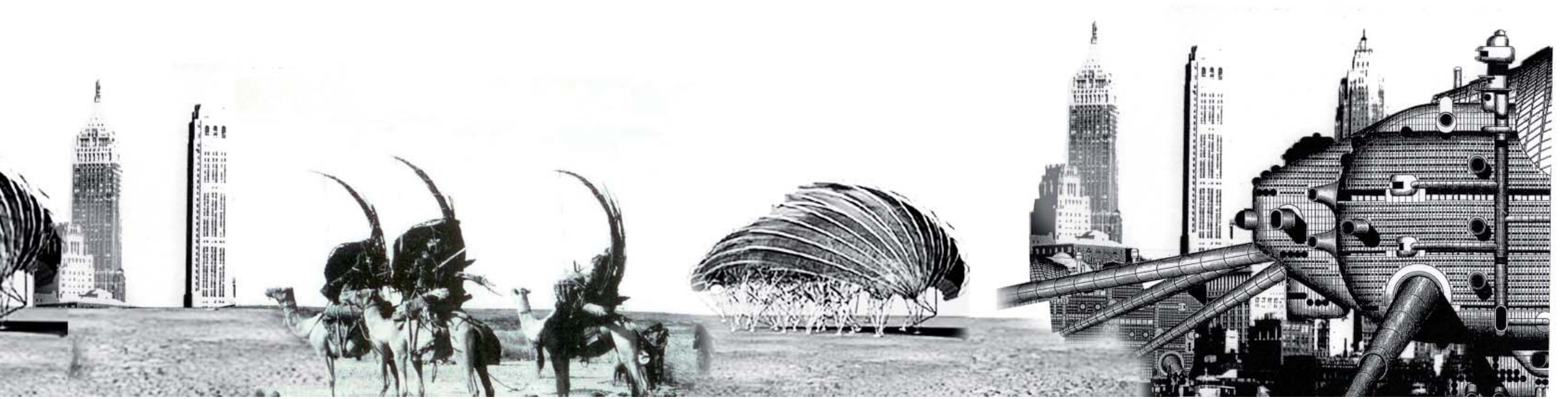
Instill: gradually but firmly establish an idea or attitude in a person's mind (OUPSA and DUSAE 2010).

When the technical organisation or the rational order of a thing overwhelms our attention, it is an object of use. In dictionary terms (OUPSA and DUSAE 2010), art refers to the conscious arrangement of colours, forms or other elements in a manner that affects the sense of beauty. It is sensual, not practical. Technique is often demeaned in favour of concept or personal expression. Prussin (1995:xx) argues that nomadic architecture's beauty emanates from an ethos unique to its technique and context.

Established exhibition designer Reinhard (1998:203) does not describe his work as trade fair stands, but rather systems, tailored to the client's product and company language. These systems, rather than once off exhibits, are designed for reuse and ease of transformation.

The IFI exhibition's success depends upon the ability to communicate. As an ambassador for the interiors profession, it should not only create the sensual experience that is synonymous with the discipline, but also subtly communicate the aesthetic of the technical configuration derived from the context.

FIGURE 2.6 Movement and nomadism in design that influenced the theoretical approach



03 design parameters

The design context is established within Design Frontiers: The Interiors Entity (DFIE). The DFIE is an initiative of the client organisation, The International Federation of Interior Architects/Designers (IFI). The final phase of the DFIE, The IFI Interiors Biennale 2013, will become the basis for the dissertation, with the IFI Interiors Declaration forming the core of the investigation.

3.1 THE CLIENT ORGANISATION

IFI is the international federating body for interior architecture/design organisations (IFI 2011). Powell (2011) explains that "IFI uses the terms 'interior architecture' and 'interior design' interchangeably, reflecting the practices in its member countries." IFI acts as a global forum for the exchange and development of knowledge and experience in worldwide education, research and practice regarding the interiors discipline. The organisation connects the international interior community in order to further the impact, influence and application of the discipline. They promote global social responsibility and raise the status of the profession worldwide.

IFI is a member of the International Design Alliance (IDA), a venture between three international design organisations. The IDA also includes The International Council of Societies of Industrial Design (ICSID) and The International Council of Graphic Design Associations (ICOGRADA). This alliance focuses on opportunities to further the design discipline, based on multidisciplinary collaboration.

3.2 THE INITIATIVE

DESIGN FRONTIERS: THE INTERIORS ENTITY

The IFI established DFIE to create a conceptual framework that unifies the discipline's many aspects. The initiative will aim to clarify the current disciplinary confusion within this framework (IFI 2011). The DFIE will culminate in 2013 with an international interior design exhibition, the IFI Interiors Biennale 2013. This event is seen as a platform to realise the DFIE framework. The Biennale will also create the opportunity to accommodate and communicate the growing interior design knowledge base.

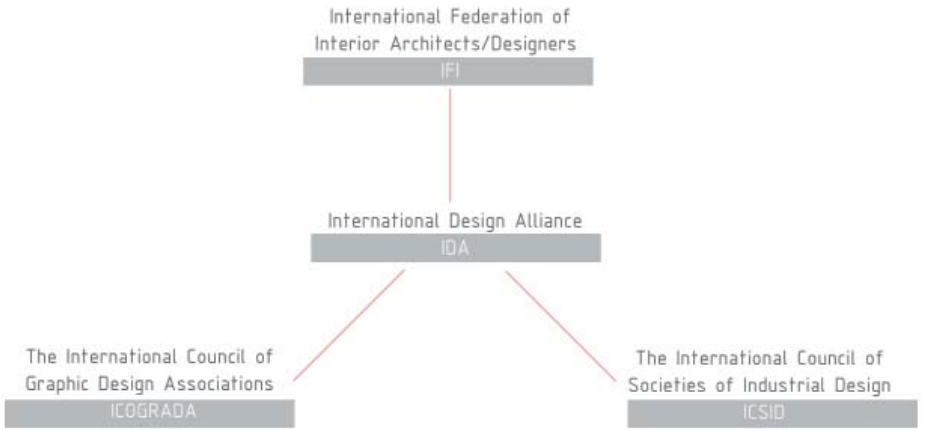


FIGURE 3.1 IDA structure diagram drawn by author

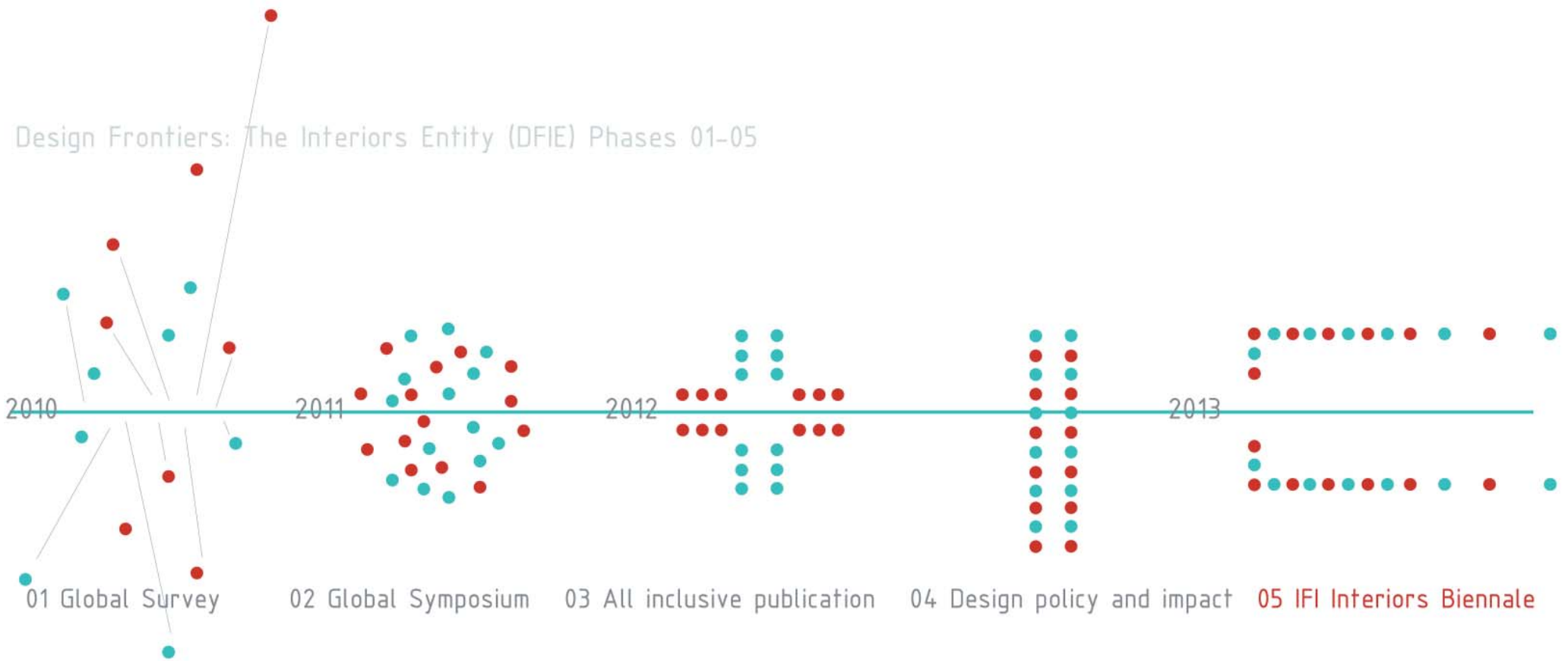


FIGURE 3.2 DFIE phases infographic by author

DFIE consists of five phases, namely:

PHASE 1: DFIE Global Survey

Participants from over 88 countries took part in regional think tanks or completed questionnaires and online surveys addressing the questions raised about the interiors discipline. The Global Survey sought to maximise a diversity of opinions through the collaboration of interiors practitioners with educators, students, manufacturers, suppliers, design media and promoters, and other stakeholders in each nation.

PHASE 2: The DFIE Global Symposium

The Symposium was held on 17-18 February 2011 in New York City. Leaders and strategic thinkers in the interiors field formed the delegation. Their purpose was to review the findings of Phase 1, which included the DFIE Global Survey, debating of core elements, discuss critical and unresolved matters, and arrive at conclusions to produce a consensus-based document, the IFI Interiors Declaration. .

PHASE 3: DFIE Publication Dissemination

IFI is currently in the process of producing Phase 3, which entails assembling and documenting all discussion material from the DFIE Global Survey and Global Symposium and incorporating this into a publication, entitled "*Design Frontiers: The Interiors Entity*". The report will be distributed throughout IFI's global network.

PHASE 4: Design Policy and Impact

Specific findings and conclusions, where relevant, will be brought to the attention of national and regional governments, possibly in the form of draft design policies related to the internally built environment. Similarly, outcomes can inform school and college curricula, which, in turn, may influence future practitioners, and be suggested for implementation across international professional practice.

PHASE 5: IFI Interiors Biennale 2013

The final phase of DFIE, the Interiors Biennale, will transform and visualise this core knowledge. Scheduled to coincide with IFI's 50th anniversary in 2013, the Biennale is designed to promote the clarity and relevance of the interiors discipline, as well as its essential nature and intrinsic role in society, through a series of events that inspire and inform both the public and design practitioners worldwide.

3.3 THE INTERIORS DECLARATION

The IFI Interiors Declaration is the culmination of DFIE Phases 1 and 2 and also forms the foundation for Phases 3-5 (IFI 2011). Composed of two parts, the Declaration consists of a preamble and a set of seven basic principle concerns. The preamble describes what the interiors discipline does. It is presented as a list of the several purposes of interior design.

The Declaration's preamble is followed by the seven core interior design concepts. The seven concepts are described through opinions and ideas which were collected worldwide. Powel (2011) describes this section of the Declaration as the foundation upon which the preamble rests. It states how the interiors profession and field achieve their purposes.

The Interiors Declaration has been translated into various international languages since its inception. To contribute to the IFI digital library and relate the Interiors Declaration to a South African context, the document was translated into Afrikaans (an instructional language at The University of Pretoria). The Afrikaans translation is used as prologue to the dissertation.

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THE IFI INTERIORS DECLARATION PREAMBLE

"It is the nature of humankind, not only to use spaces, but also to fill them with beauty and meaning. Skilfully designed spaces can arouse in us a sense of purpose, or a sense of the profound. In the spaces that are important to us, we experience not only a sense of place, but a sense of who we are, and of what we can be. Thoughtfully designed spaces help us learn, reflect, imagine, discover and create. Great spaces are indispensable for great creative cultures. They encourage connections between people, ideas and entire fields of thought.

As design professionals, our knowledge enables us to form spaces that respond to human needs. These human spaces are the domain of our competence, our passion and our work.

We use space responsibly. We practise our profession with the highest regard for engaging the world's economic and natural resources in a sustainable manner. We design for health, safety, well-being and the needs of all.

It is, after all, for Humanity, our ultimate client, that we design.

We shape the spaces that shape the human experience.

This is what we do, what we create, what we give.

It is how we earn our place at the human table.

It is why our work is important to our clients, to our societies and to ourselves.

It is the difference we make and why we choose this noble profession."

ifi IDA
International Federation
of Interior Architects/Designers
A Partner of the International
Design Alliance

IFI DESIGN FRONTIERS
IFI INTERIORS DECLARATION
THE INTERIORS ENTITY

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THE IFI INTERIORS DECLARATION SEVEN CORE PRINCIPLES

1. VALUE

The profession provides leadership and utilises an iterative and interactive process that includes discovery, translation and validation, producing measurable outcomes and improvements in interior spaces and in the lives of the people who use them. This process delivers economic, functional, aesthetic and social advantage that helps clients understand the value of their decisions and enables better decisions that are beneficial to users and to society. It is recommended that the profession becomes a trusted voice and develops multiple research models in the context of physical, emotional and behavioural patterns of users.

2. RELEVANCE

The profession defines projects at their commencement, and champions human experience at all levels. Interior designers and interior architects synthesise human and environmental ecologies and translate science to beauty addressing all the senses. The practitioner listens, observes, analyses, improves and creates original ideas, visions and spaces that have measurable value.

3. RESPONSIBILITY

The responsibility of interior designers and interior architects is to define the practice and the required expertise, educate ourselves and the public, and to position ourselves in the public realm as experts in the built environment.

4. CULTURE

As a creative enterprise, interior design and interior architecture are a mode of cultural production. They are a place-maker that interprets, translates, and edits cultural capital. In a global world, interior design and interior architecture must play a role in facilitating the retention of cultural diversity.

5. BUSINESS

The profession of interior design and interior architecture provides value to the stakeholders. It improves well-being as a factor of economic development. It provides strategic thought

leadership, resulting in multi-faceted return on investment. Interior designers and interior architects advocate education for the ongoing benefit and awareness of the profession.

6. KNOWLEDGE

Theoretical, applied, and innate knowledge are fundamental to the practice of interior design and interior architecture. The confluence of environmental psychology and the science of anthropometrics are critical to the quantitative and qualitative knowledge that form the practice of interior design and interior architecture.

7. IDENTITY

Interior designers and interior architects determine the relationship of people to spaces based on psychological and physical parameters, to improve the quality of life.

INTERIOR DESIGN

RELEVANCE

+

RESPONSIBILITY

+

CULTURE

+

BUSINESS

+

KNOWLEDGE

+

IDENTITY

CONCLUSION

The study accepts the IFI Interiors Declaration as stated above, but also agrees with the IFI that it is to be perceived as a living document. The word 'declaration' in this instance is defined in open terms. It does not denote the creation of an autocratic or fixed document, but rather a starting point that can be built upon and amended as required through further clarifications and relevant developments in the discipline.

DFIE could have a fundamental effect on our understanding of the current state of interior design and its impact on related industries worldwide. Outcomes will ideally not only allow for the raised standards, elevated status and enhanced growth of the interiors discipline, but could also be capable of transforming into comprehensive design policy at a government level.

3.4 DESIGN BRIEF

The design brief is derived from published information and unpublished communication with the IFI. The IFI states that the Interiors Biennale 2013 will consist of a series of events and the host building should ideally be able to facilitate all these events (Powel, 2011). Events that will need to be accommodated include discussions, large and small scale presentations, as well as an interior design exhibition to promote the relevance of the interior design profession and its intrinsic role in society. Also, when considering a similar event, The Grand Designs Live 2011, the Biennale could expect 27,500 visitors over a period of three days (Grand Designs Live 2011).

In personal communication with Shashi Caan, current IFI President (2009 to 2011), she reveals that "at this moment [they] do not have any developed information to share. [They] are, however, certain that it will be designed to manifest (for physical experience) the IFI Interiors Declaration." (See Annexure A.) Furthermore, she states that their work together is to "deepen, strengthen and clarify the impact and potential of Interiors and the built environment."

As a reply to the dissertation proposal, Ms Caan suggests "experimenting, exploring and conceptualising the translation of the qualities of the Declaration into sculpted volumes."

The specific brief for this dissertation would be the design of a travelling introductory exhibit to the IFI Interiors Biennale 2013, focusing on the proposed inaugural host.

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04 context

"As I go through the day, my extended body ebbs and flows, ... I live in bodies beyond bodies, clothes, furniture, room, house, city."

(Leder 1990: 35)

This chapter aims to contextualise the established framework by investigating the exhibition event and site typologies. The goal is to identify characteristics of a universal exhibition host (general) to obtain a set of constraints that inform the design of a travelling installation. A proto-site (specific) is then identified within Johannesburg, embodying the universal specification. The project is further contextualised within a local context by stating relevant event legislation, and finally by identifying possible participants and involved parties.

FIGURE 4.1 Grand Designs Live 2011 in context: Coca Cola Dome

4.1 SITE CONSIDERATION

Site consideration is a crucial part of the exhibition design process (Locker 2011:43).

4.1.1 OUTDOORS

Exhibitions can be designed for the outdoors, such as the "Küchenmonument" (Schmidt 2010) by Raumlabor (1999).

Designer's notes: Raumlabor

'Kitchen Monument' is a collaboration of Raumlabor- and Berlin-based specialists for pneumatic structures, Plastique Fantastique.

Raumlabor explains that "the Kitchen Monument is a mobile sculpture which has two states of being. This zinc sheet-clad sculpture can be extended into public space by a pneumatic spatial mantle that transforms it into a temporary collective space. Different programmes are staged in different places. Its broad spectrum of uses includes a banquet hall, conference room, cinema, concert hall, ballroom, dormitory, boxing arena and steam bath" (Schmidt 2010). Kitchen Monument also contributed place for numerous events, talks and discussions during the opening days of the Venice Biennial 2010.

FIGURE 4.2 Kitchen Monument exterior view

FIGURE 4.3 Kitchen Monument interior view

Review: Author

The open air exhibition or pavilion could be an object for external view or create a temporary volume. It is a free-standing, non-site specific system. The Kitchen Monument has the ability to travel and create a temporary habitable space in an outdoor urban or rural context. The pavilion, however, does not engage the space it inhabits – its form and size are constant without the ability to adapt to its environment. This type of exhibition does not fall into the realm of the interiors discipline, which concerns itself with the found space.

Designer: Raumlabor

Location: Travelling

Project Year: 2006-2011

Photographs: Matthias

FIGURE 4.4 Infographic communicating spatial qualities of selected purpose-built exhibition spaces with a focus on the Biennale host

4.1.2 WITHIN AN EXISTING BUILDING

Exhibitions could also be within an existing building, where the interior of such a building could be:

(a) purpose-built for a commercial exhibition or

(b) a building with another use that is temporarily the site for an exhibition.

Purpose-built exhibition spaces are enforced by legislation and building regulations to have the necessary infrastructure to accommodate a large scale event such as the IFI Interiors Biennale 2013. The locations of such buildings are also determined to form part of the urban centre and its amenities. As mentioned previously, the Interiors Biennale will consist of a series of events and the host building should ideally be able to facilitate all these events. Therefore, the purpose-built host as universal typology is considered.

Purpose-built buildings could either provide a 'blank container' such as the exhibition halls at the ExCel (2000) London, UK by Moxley Architects (1978) or a 'created container' like the São Paulo Biennale host, the Ciccillo Matarazzo pavilion, Parque do Ibirapuera (1957) by Oscar Niemeyer (1907), where the host building interior provides created spaces as canvas for the exhibitions.

Purpose-built exhibition space

FIGURE 4.5 ExCel exhibition hall (Locker 2011:45)

The blank container is a typical exhibition space with similar characteristics within the group.

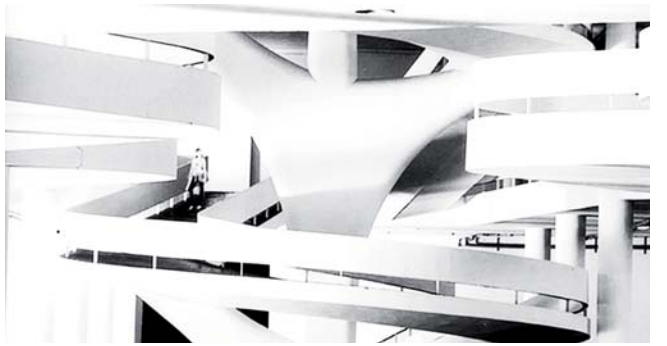

FIGURE 4.6 Ciccillo Matarazzo interior: Juan Guerra [2006]

The created container has unique architectural attributes within a collective grouping.

4.2 THE SOUTH AFRICAN PROTO-SITE

Two possible hosts within Gauteng, representing both the aforementioned container typologies, are considered as inaugural host. The probable hosts are both located in Johannesburg. OR Tambo, South Africa's largest international airport is situated in this city.

4.2.1 THE TURBINE HALL: CREATED CONTAINER

Although the Turbine Hall (2008), Johannesburg, South Africa by TPS.P Architects is an adaptive re-use space, it offers a dedicated exhibition and events venue.

Overview

In 1927 the Turbine Hall was built parallel to the west boundary site at Miriam Makeba Street. In the early 1990s, the gold division of Anglo American separated from the parent company, which relocated to London and, as Anglo Gold Ashanti the company needed new premises, architect Guy Steenekamp of TPS.P Architects was consulted and the Turbine Hall site was identified. The manner in which the existing buildings are used and the placement of the new interventions on the site, reflect the architect's concern to connect to the city, ensure continuity of space and ensure that the building remained inviolate with the language and scale of detailing finding reference to the new. The conversion houses Anglo Gold Ashanti as building owner and main tenant. Offices are also sub-let to smaller companies, which include The Forum Events Company who rents out the original Turbine Hall as event venue.

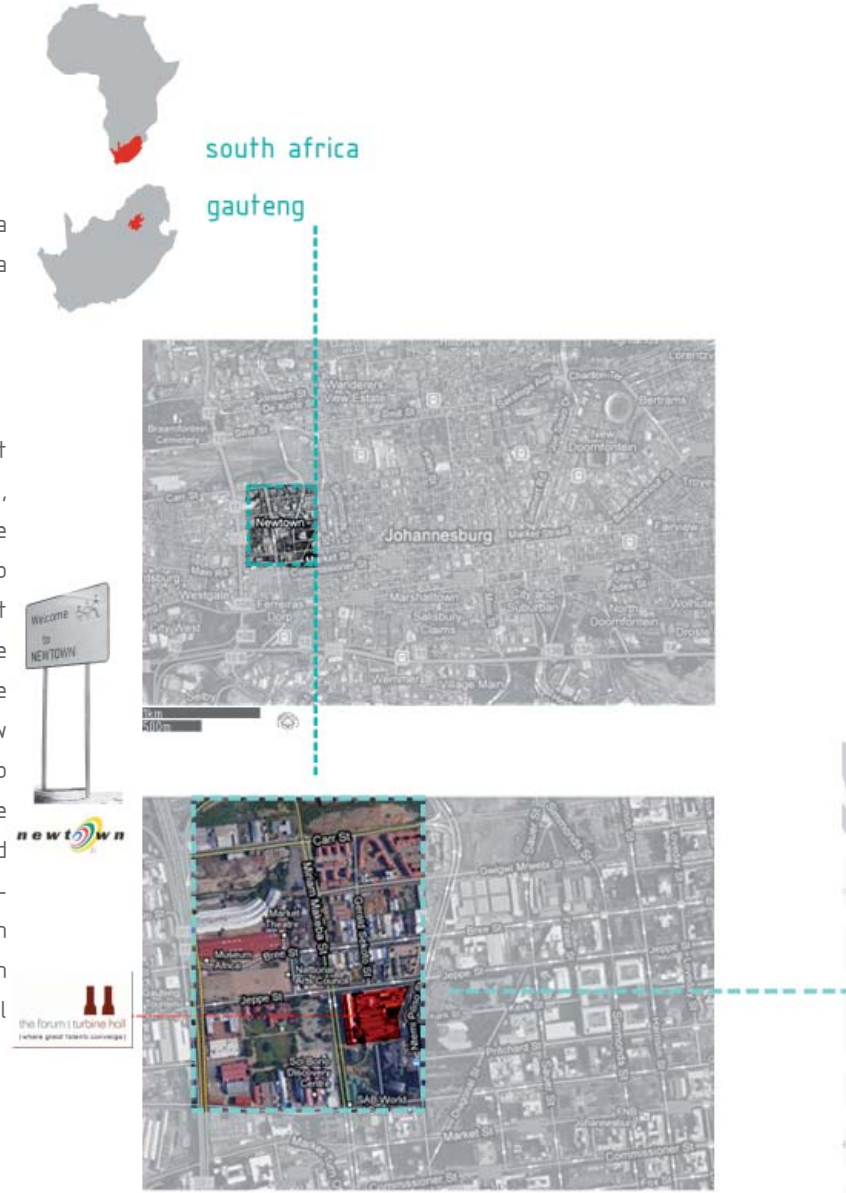

FIGURE 4.7 Turbine Hall context-composite graphic

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FIGURE 4.8-10 Turbine Hall exterior and interior

Considered exhibition area

The entrance foyer, as well as the dedicated Turbine Hall event venue, is considered as exhibition space for the IFI Interiors Biennale 2013.

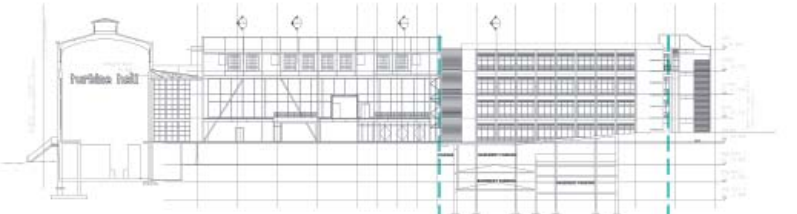
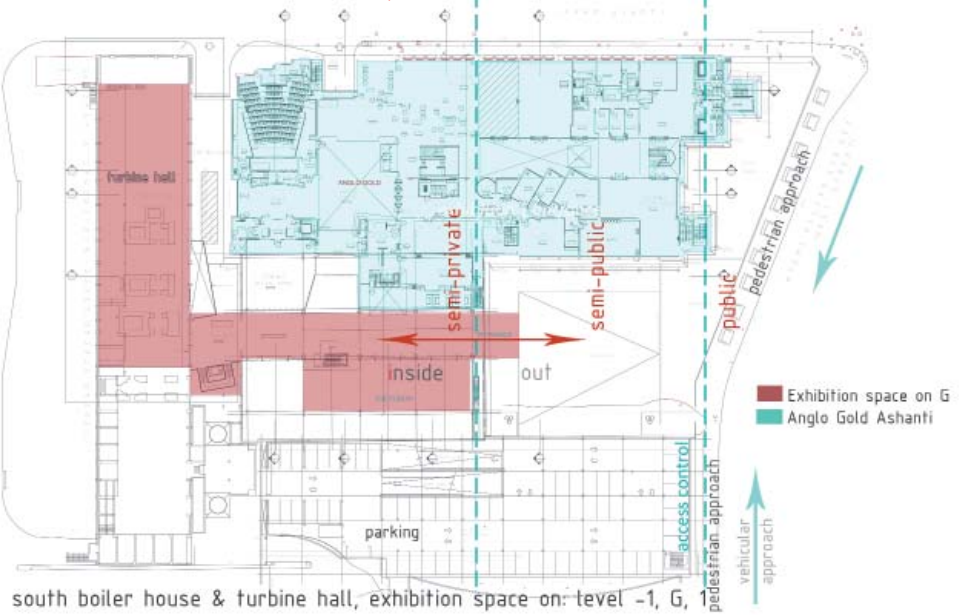


FIGURE 4.11 Turbine Hall section and plan: TPC Architects (2005)



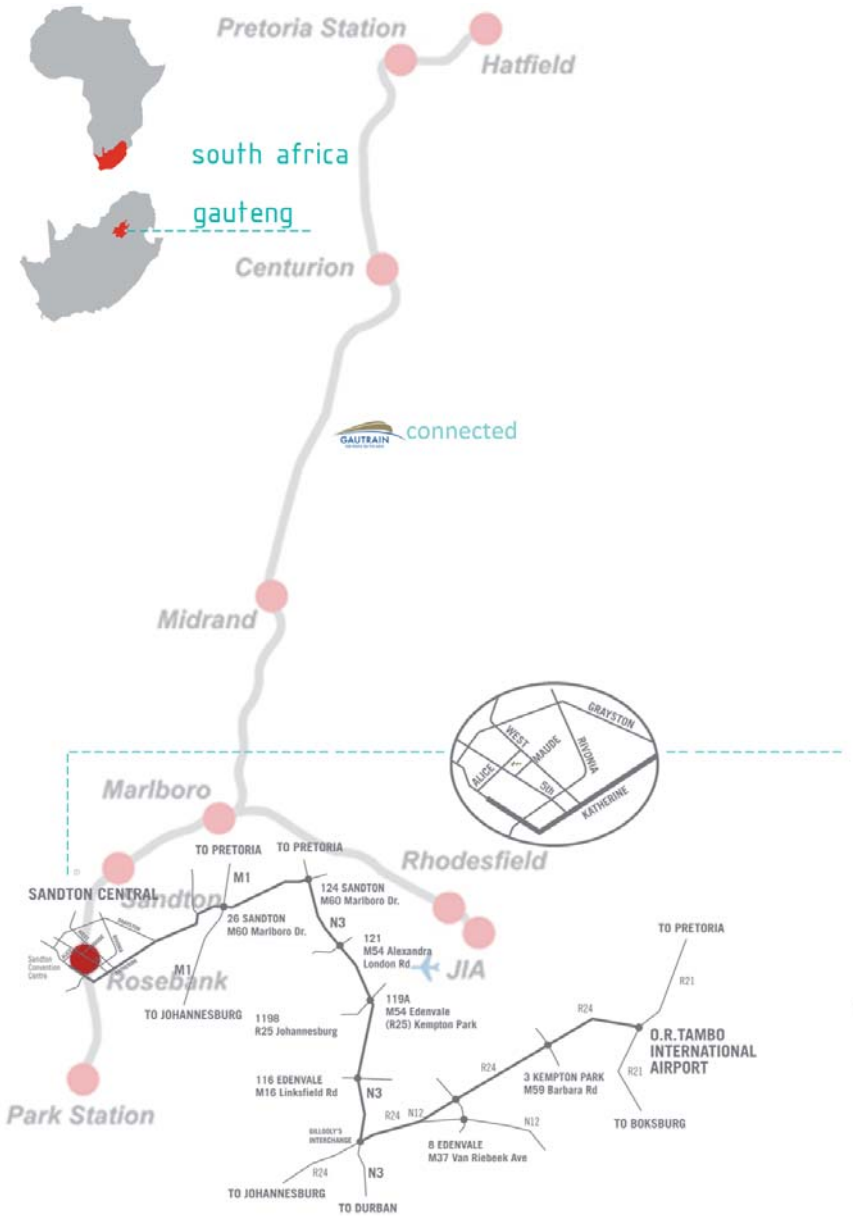


FIGURE 4.12 Sandton Convention Centre context composite graphic

FIGURE 4.13–16 Sandton Convention Centre exterior and interior

4.2.2 THE SANDTON CONVENTION CENTRE (SCC): BLANK CONTAINER

The Sandton Convention Centre (1998), Johannesburg, South Africa by Louis Karol Architects (LKA) is an international exhibition centre. This twelve-storey structure is designed and built to provide convention, exhibition and special event space over five main levels (Sandton 2011).

Overview

Sandton Convention Centre (SCC) is situated in northern Johannesburg within Sandton's business, hotel and entertainment district. They offer audio visual, security, decor, cleaning and catering services.

Considered area

The preferred exhibition space at the SCC would be the 'Exhibition 1'

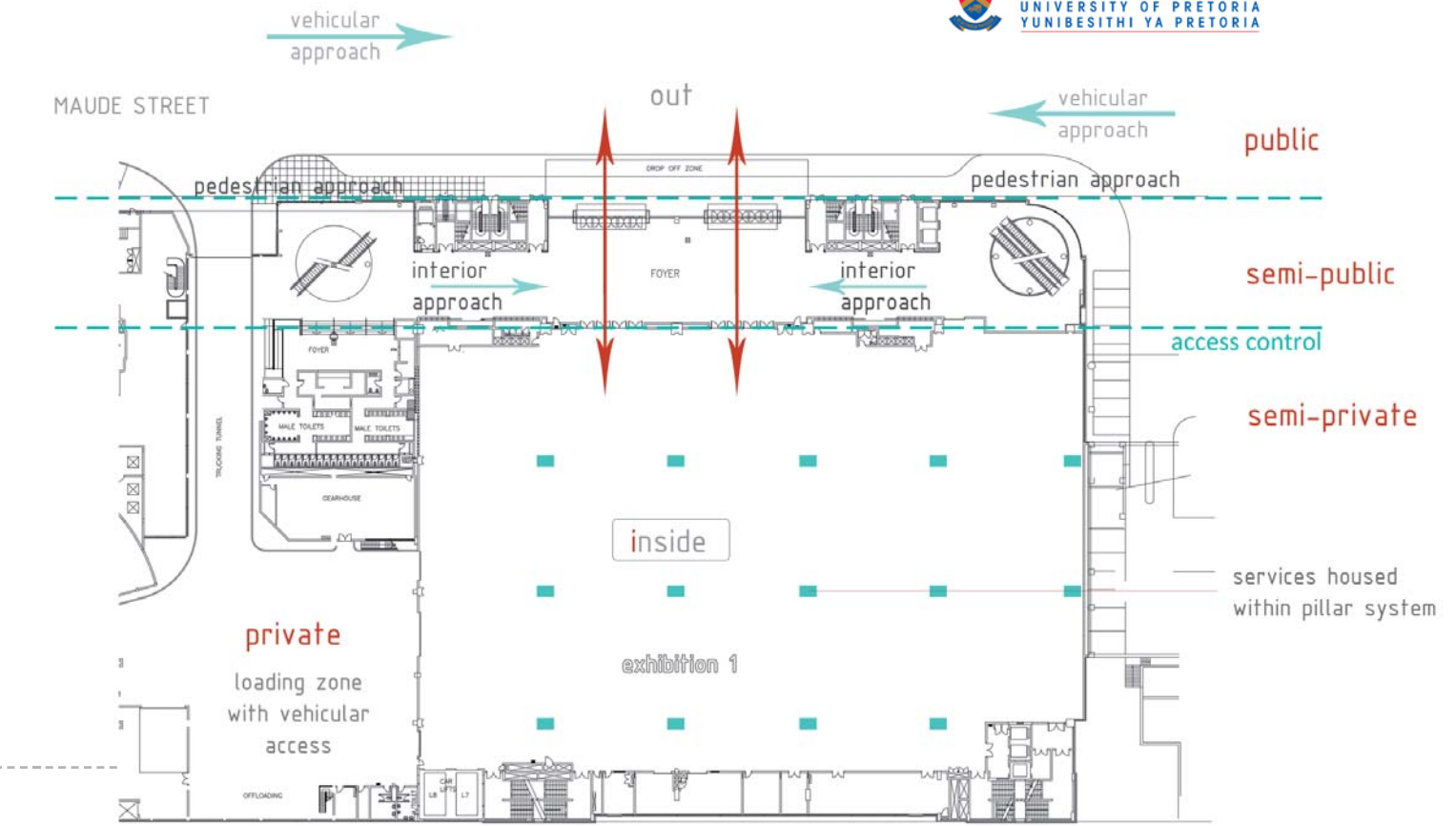


FIGURE 4.17 Exhibition 1 floor plan, Sandton Convention Centre: LKA (1998)

FIGURE 4.18-20 Exhibition 1 exterior and interior

4.2.3 CONSIDERED HOST COMPARISON TABLE

The following table compares the two probable hosts for the inaugural IFI Interiors Biennale 2013. The two dissimilar spaces are compared in terms of the project brief, considering the client's needs. The spaces are evaluated based on micro and macro infrastructure, location, available floor area and the presence of a universal quality, which would allow ease of adaptation when travelling.

TABLE 4.1 Considered inaugural host comparison

Considered host		The Turbine Hall, Newtown		The Sandton Convention Centre
Access to host		Public to sign in upon entering: confrontational		Free public access to SCC foyer and circulation areas: inviting
Inclusive accessibility-universal design	 	• Ramp at main entrance • Small lift available	 	• Ramp at street entrance • Lifts and escalators accessible from foyers on all levels
Signage and way-finding		Signage only, not visible from main entrance - poor legibility	 	• Clear, legible signage and way-finding • Information kiosk on venue and urban context
Available exhibition area		2000 m^2		5430 m^2

Considered host	The Turbine Hall, Newtown	The Sandton Convention Centre
Ceiling height	Approx 3600mm	6500mm
Available services within exhibition area	• Limited opportunity for overhead rigging • Air-conditioned • Electrical points on columns	• Ceilings provide access to overhead rigging fixtures and electrical points • Air-conditioned • Non-intrusive system of pillars; set at 18 m intervals, bring services such as water, wet waste, normal and three-phase electrical power, and telecoms links (including digital, analogue and ISDN lines) • Floor hatches spaced every 9 m also give access to these services, and any number of them can be interconnected.
Delivery access	Double door access to parking area	Large obstruction free opening with direct access from loading zone





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		The Turbine Hall, Newtown		The Sandton Convention Centre
Considered host		No		Several
Conference facilities				
Transport nodes		Reya Vaya bus stop (secondary)	GAUTRAIN FOR PEOPLE ON THE MOVE	Gautrain station (primary)
Accommodation		Few, not in walkable proximity	 Michelangelo Hotel	Numerous, adjoining and within walkable proximity
Universal exhibition space qualities		Unique space		Typical exhibition space
Other		Permanent business occupants: mutual interference and access control impact Lesser known venue Limited recreational amenities	 Nelson Mandela Square	Solely dedicated to exhibition and conference functions, no disturbances Well-established exhibition venue Situated within Sandton's recreational centre

4.3 EVENT TYPOLOGY

Table Conclusion

The Sandton Convention Centre (SCC) could be described as an international, purpose-built exhibition facility. Locker (2011:45) states that most major cities around the world offer purpose-built exhibition halls.

The SCC is the most suitable venue, based on its universal qualities and the aforementioned criteria considered and will therefore be chosen as host to the inaugural IFI Interiors Biennale 2013.

4.3.1 EXHIBITION OVERVIEW

"Typologies embody principles that designers consider unvarying; as heuristics they allow us to apply knowledge about past solutions to related architectural problems." (Rowe 1997: 85)

Locker (2011) orders exhibition into five main categories:

- World expositions
- Commercial exhibitions
- Museum galleries
- Heritage
- Art installation and
- Leisure (themed environments)

Exhibitions may be permanent or temporary, with a lifespan varying from several days to years. They also vary in scale from table-top displays to city-sized expositions. The exhibition's relationship to the site could be understood through Hay's (2007:35) architectural approach as discussed in Chapter 2.

Exhibitions are, however, all similar in their nature of communicating. Prussin (1995: xvi) states that exhibitions, perhaps by their very nature, direct attention to discrete objects, to what can be seized immediately by the senses, but our senses themselves are influenced by previous cultural experience.

The IFI Interiors Biennale 2013 could embody qualities of both the registered exposition and commercial exhibition, based on their focus on branding, as well as the art installation which includes the Architecture Biennale because of its focus on experience design.

To establish the nature of the IFI event type, a comparitive study follows.

TABLE 4.2 Considered exhibition type comparison: specific events

Event type	The registered exposition	The art & architecture biennale	The commercial exhibition
Case study	Shanghai Expo 2010, China	12th Architecture Venice Biennale 2010, Italy	Grand Designs Live 2011, Johannesburg South Africa
spacial requirement for event	5.3 square kilometers (create temporary city)	20 thousand square meters	11 thousand square meters
functional criteria for event	vacant/ under used parcel of land within proximity to established infrastructure	dedicated exhibition host building building and allocated open and enclosed sites throughout Venice	dedicated exhibition/ convention host building with existing micro and macro infrastructure
event frequency	every five years	every two years	every year
event theme	Better City, Better Life	People meet in architecture	-
event lifespan	six months	3 months	3 days
number of exhibitors	250 countries/ international organisations	48 nations in The Italia, Venice (1895), by Enrico Trevisanato and 53 national participants throughout Venice	165 local home & garden design/ suppliers companies
exhibit type	the pavilion	the installation	the stand
exhibit size	1000-8500 square meters	16-1800 square metres	6-150 square metres
primary role of exhibit	nation branding	nation branding	consumer exhibits
exhibit design nature	standard/ custom exterior	custom interior/ exterior	majority standard, interior
event attendance	73 million	171 thousand	30 thousand
typical visitor profile	informed & uninformed local/ tourist	local/ international industry professionals & art/ architecture enthusiast	local industry professionals & interested consumers

4.3.2 THE COMMERCIAL EXHIBITION

Conclusion

The host type and event attendance of the IFI Interiors Biennale 2013 would be similar to that of the commercial exhibition. The exhibit type and visitor profile would be similar to that associated with the Art and Architecture Biennale. Therefore, for the purpose of the dissertation, both aforementioned exhibition types will be discussed in this section. The lifespan of the event in each city relates to the commercial exhibition, but the travelling exhibition should also be examined to determine additional guidelines introduced by this typology.

The role of the commercial exhibition

Locker (2011:16) describes the contemporary commercial exhibition as a trade fair or consumer show. The event is concerned with the display and economic promotion of commercial goods and services.

A trade show is organised when businesses or companies of similar type come together for an event to discuss, retail and network. The event would reflect current trends in their industries and aim to be forward-looking.

The primary goal according to Locker is trade, although it is also an opportunity to launch new products, raise brand profiles, establish brand identity or take the opportunity to change how a brand is perceived.

The trade show caters predominantly to the business community; this is reflected in the design of an exhibition stand.

Conclusion

Both the branding nature and the visitor-orientated exhibition approach of the commercial exhibition will influence the design development of the IFI Interiors Biennale 2013.

Exhibition organisers

Trade shows are managed by exhibition organisers. They create the event, brand and market it, hire the space and sell it on to individual exhibitors. The exhibitor's manual outlines rules and regulations for participants, giving instructions about the availability of electricity, water, lighting, maximum height restrictions and health and safety information regarding materials, construction and timescales. Exhibitors are not allowed to obstruct walkways or other public areas and compliance is part of exhibitor's contractual requirements. These contractual requirements last from registration to when the company leaves the venue at the conclusion of the show.

Recommendation

The IFI could fulfil the role of exhibition organiser in the case of the IFI Interiors Biennale 2013. The event participants are discussed within the last part of this chapter. The SCC exhibitor's manual (Annexure B) states the project specific guidelines for the inaugural event.

Types of exhibition stand

Set Squared, South Africa, states that some exhibition stands are very large, architectural in scale, and may be built on several levels (Cilliers 2011). Other stands are more sculptural or theatrical in approach, these are custom built stands. She describes that the most commonly used stand is the shell scheme that consists of adaptable aluminium profiles with interchangeable panels. When the shell scheme is customised by the exhibitor, it is known as a system stand.

Design recommendation

The installation designed for the IFI Interiors Biennale 2013 would embody more qualities of the system stand than the schell scheme. The aim would be to design an exhibition system that is comprised of a kit of parts while successfully translating the IFI Interiors Declaration as an experience.

FIGURE 4.21 Shell scheme stand at Decorex 2011

FIGURE 4.22 System stand at Markex 2011

4.3.2.1 CONTEXTUALISING THE COMMERCIAL EXHIBITION

The traveling nature of the IFI Interiors Installation exposes the exhibit to various international spaces and communities. To investigate the possible differences between exhibition events in different countries a comparative table is compiled. The table compares a South African Commercial Exhibition with a Taiwanese Commercial Exhibition.

TABLE 4.3 Comparison between local and international Commercial Exhibition

International case study:

Motorcycle exhibition 2011, Taipei World Trade Centre Exhibition Hall, Taiwan

transport to event	building approach	entrance foyer	exhibition layout	wayfinding	general signage	typical stand	custom stand
							

Photo journal 2011/04/17

National case study

Grand Designs Live 2011, Coca Cola Dome, Johannesburg, South Africa

Photo journal 2011/05/22

Review:

Taipei's exhibition hall is within the capital's centre connected to public transport arteries. It is also located opposite the Taipei International Convention Centre The Coca Cola Dome is not in proximity to transport nodes or in proximity to supporting infrastructure such as convention facilities or accommodation.	The Taipei exhibition hall does not have a well articulated entrance. This could lead to confusion between the primary and secondary entrances as most entrances sell tickets.	The Grand Designs Live provides several self-help ticket kiosks at the entrance. This could speed up 'on the day ticket sales' as well as bridge language barriers with international visitors.	Both exhibitions provide clear colour coded layout diagrams. However only the main descriptions on the motorcycle show layout are in both mandarin and english.	The motorcycle exhibition provides regular direction indicating pylons. The event is easy to navigate. Grand Designs Live allocates different exhibition zones with carpet colour coding. The event is not easy to navigate.	Host building signage is clear, legible and prominant at the Taipei Exhibition Hall. The Coca Cola Dome signage is legible but not always visible in the ambush of event signage.	Standard or shell stands at both exhibitions are of similar dimensions with provision for the exhibitors branding and opportunity for slight customisation.	Custom designed stands at the motorcycle exhibition seem to be a more sophisticated standard exhibition system. The custom stands at Grand Designs Live translate once off designs, interpreting the exhibitors brand. This could also be a result of the nature of the exhibition.

Comparitive Table Conclusion

Both the international and local exhibition venues exhibit universal qualities regarding micro and macro infrastructure. The largest distinction is the primary communication language on signage. A travelling exhibition could inhabit both spaces with only a slight layout adaptation as a result of the existing floor plan and column positions. A travelling exhibition would also need to take into account the communication language in each country and be able to adapt accordingly.

4.3.3 THE BIENNALE

Where art or architecture as art (Architecture Biennale) is involved, exhibition design tends to involve one or more of either artist, curator or designer. Locker (2011:31) holds that when managing an environment for painting, sculpture or architecture installations, it is important to respect the integrity of work whilst enabling engagement with the visitor. She states that '"the art must speak for itself".

Biennale exhibition type: The Installation

Unlike the majority of the communicative environments that exhibition designers plan, here the message is implicit; the visitor engagement with the piece is intimate and visitors' aesthetic responses and sense-making are subjective and personal. The information is conveyed through experience, rather than goal-driven explicit communication.

Installations could inhabit public or private spaces including museums, art galleries and exhibitions. They could potentially share a variety of exhibition media including film, sound and light.

The "... installation has many similarities with commercial exhibition design. It is site-specific, usually interior and three-dimensional... it involves the transformation of the perception of space." (Locker 2011: 31)

Installation Precedent:

"The Other, the Same," by Carlos Teixeira, part of the 29th Sao Paulo International Art Biennial. The following text is courtesy Carlos Teixeira (Teixeira 2011).

Designers notes: Carlos Teixeira

The Other, the Same is a modular space made of walls of piled-up cardboard and built on mobile "shard-cars". This arena for fiction and performance was conceived for presentations that have the body as their leitmotiv. In its original configuration, the shard-cars define a space isolated from their environment. Even when detached vis-à-vis the building's modernist space, its cars can always be used to rest, for conversations, for meetings, for plays.

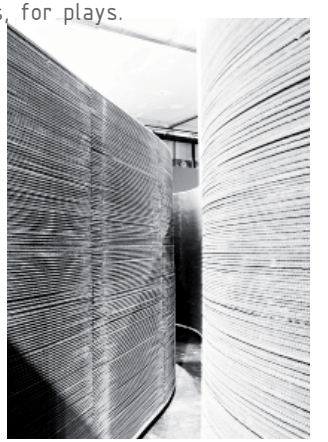


FIGURE 4.23 The Other, the Same labyrinth configuration

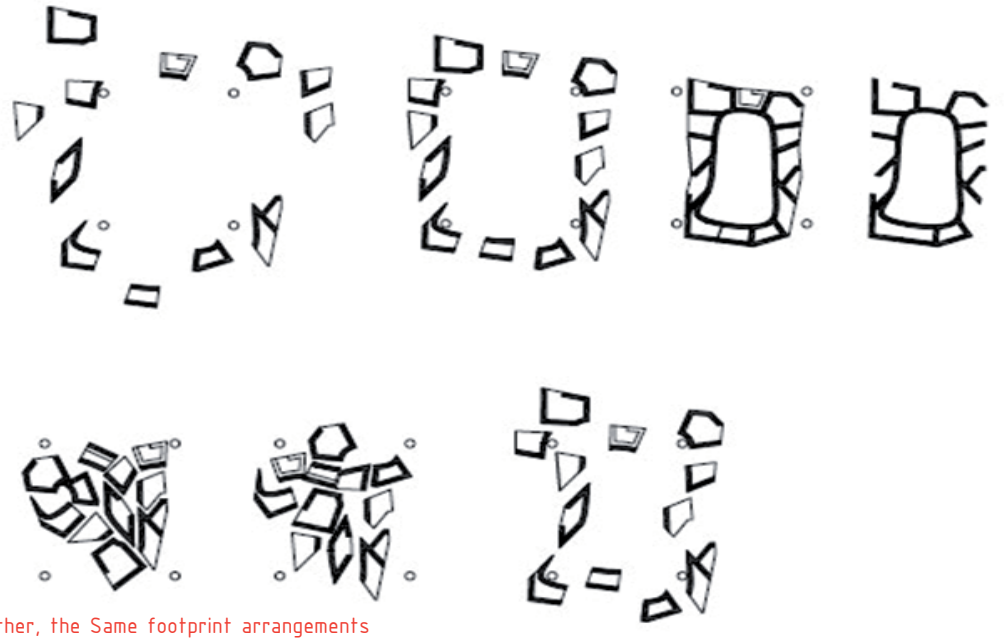


FIGURE 4.24 The Other, the Same footprint arrangements

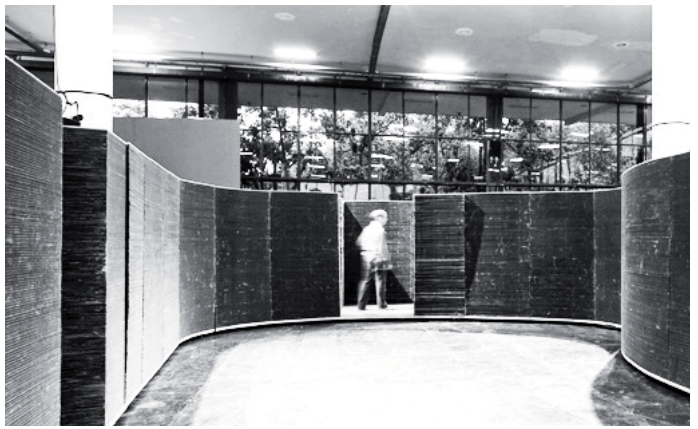


FIGURE 4.25 The Other, the Same gathering space

FIGURE 4.26 The Other, the Same rest module

In other situations, with the open, expanded shard-cars, the terreiro invades its immediate environment and transforms itself, extrapolating the very area originally designated to it and reaching the building limits. When contracted, the terreiro reveals a labyrinthine space and creates an irregular, unsteady area; tarnishing the contiguity between inside and the outside and disconnecting the shard-cars from their original function (to shape an arena).

Review: Author

The Other, the Same translates its temporary nature through material choice and its adaptable footprint. The installation's appeal is based on its ability to adapt to different host spaces, shifting between uses (as directed by the curator) and thereby creating different visitor experiences. The use of a single material places emphasis on the space created without abusing the visitors' senses.

Architect: Carlos Teixeira

Location: 29th Sao Paulo International Art Biennial, Brazil

Project Year: 2010

Photographs: Nelson Kon, Camila Piccolo, and Carlos Teixeira

4.3.4 THE TRAVELLING EXHIBITION

The designer of a travelling international exhibition has much to consider: different venues, a range of languages, security, transport and insurance issues, knowledge of services, lighting and existing context, cultural as well as religious understanding (Locker 2011:45). These variables make the task complicated.

"Simplicity and flexibility are vital." (Locker 2011:45)

The IFI Interiors Biennale 2013 exhibition will be a migrating event. Therefore, simplicity and flexibility will be one of the primary design decision-making factors. The installation will travel to introduce the IFI Interiors Declaration to a wider audience, taking into account the global presence of IFI members. The embodied energy of the event could also be reduced when comparing 30 000 visitors flying from around the world to one destination with one exhibition being shipped to various countries.

FIGURE 4.27 Box mobile gallery interior

Travelling exhibition precedent:

Box Mobile Gallery by WISE Architecture

The following text is courtesy of WISE Architecture (WISE Architecture 2011).

Designer's notes: WISE Architecture

The Box Mobile Gallery is a travelling gallery responsive to various exhibition intentions and art media. The gallery consists of 12 panels, soft-hinged side by side. Each of these panels features an art work fixed to its inside. The flexibility of the soft hinge system allows the spatial reconfiguration of the gallery reacting to site conditions, exhibition intention, and art media. The gallery grows from an independent cell for an individual exhibition, to a widespread exhibition space for a group exhibition. The Box also functions as a crate; art can be packed within the gallery, with some pieces sandwiched between panels and some contained within individual cells. In its folded and locked state, the box becomes an art crate, ready for travel or for storage.

FIGURE 4.28 Box mobile gallery exterior in urban context

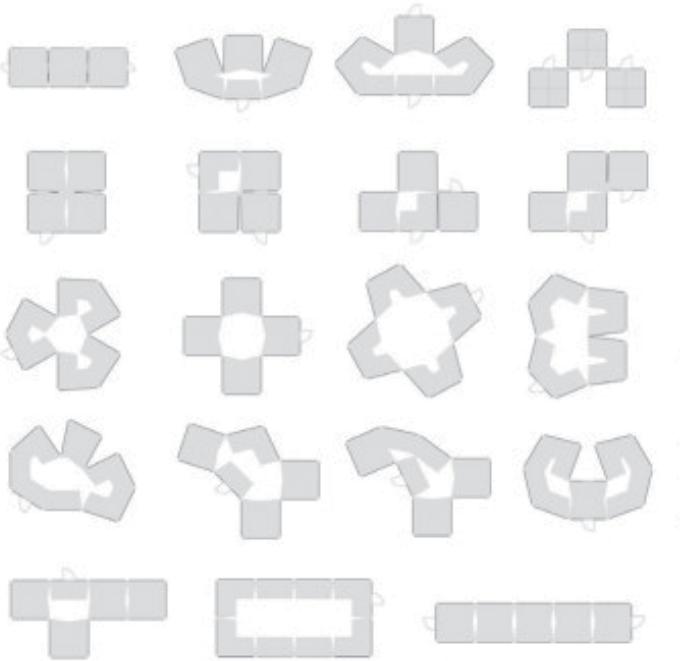


FIGURE 4.29 Box mobile gallery possible configurations

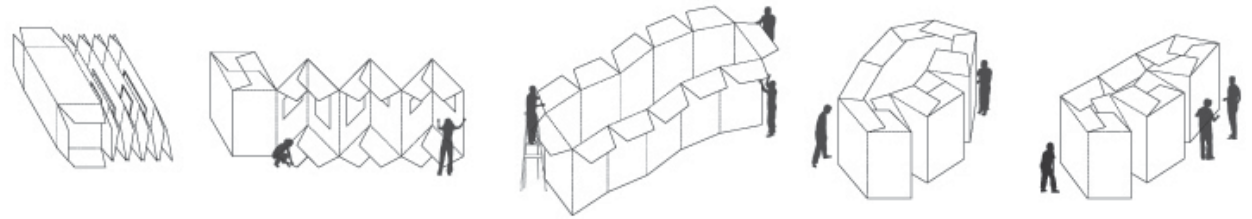


FIGURE 4.30 Box mobile gallery assembly diagram

Review: Author

The versatility and simplicity of the Box Mobile Gallery are the properties that make it successful in its basic functions: travel and display. The Box creates a temporary exhibition volume instead of an isolated object, allowing the user to become part of the space.

The disadvantage is that the display is limited to the vertical panels, not allowing for the display of art objects. The exhibition is also dependent on external natural and artificial light sources which don't adhere to prescribed gallery lighting qualities. The access openings in the panels are raised from the natural floor height, which doesn't allow for inclusive accessibility.

The exhibition's ability to adapt to the found space and the size of an art show by means of uncomplicated modules will influence the design development of the IFI Installation.

Architect: WISE Architecture

Location: Jongno-gu Tongin-dong, Seoul, South Korea

Project Year: 2011

Photographs: Hwang Hyochel

4.3.4.1 TRANSPORT MODE

When mobility is an integral part of a design, so should be the mode of transport.

The exhibition will be moved between various host structures over the world, and the mode of transport will therefore influence the design of the exhibition. This is similar to the influence that the pack animal's capability, size and profile will have on the dimensions, materiality and form of the mobile structure in African nomadic culture (Prussin 1995).

This mode of transport, together with material availability, structure-use, environment and ease of assembling and disassembling, determine the properties of the traditional mobile construction.

Intermodal freight transport involves the transportation of cargo in a container or vehicle, using multiple modes of transportation; rail, ship, and truck, without any handling of the freight itself when changing modes. South African cargo company, Interfreight (Interfreight 2011), states that this transportation method reduces cargo handling, and so improves security, reduces damages and losses, and allows freight to be transported faster.

Containers are the main type of equipment used in intermodal transport and the 20-foot (6.1m) container is the most common container worldwide.

The IFI Interiors Biennale 2013 exhibition is to be transported in containers, the main type of equipment used in intermodal transport. To allow ease of international transport, the 20-foot (6.1m) container, "the most common container worldwide" (Interfreight 2011), is used.

20-foot container dimensions

Overall	L = 6096mm	W = 2370mm	H = 2591mm
Internal	L = 5935mm	W = 2335mm	H = 2383mm
Door Opening		W = 2335mm	H = 2292mm
Max. Gross Weight	24000kg		
Cube	33.9m3		

FIGURE 4.31 The 20-foot container with IFI Interiors Biennale logo

4.4 EVENT LEGISLATION AND REGULATION

The context for an exhibition could further be established by using exhibition rules and regulations to guide design and material choices.

According to Set Squared (Cilliers 2011), South African exhibition designers, the exhibition industry is fast-paced with many participants contributing to each event. Regulatory compliance for the design and construction element of the exhibition industry is therefore crucial to ensure success. Also, seeing that the involvement of members of the public is always key to any exhibition, adhering to public safety regulations is crucial.

For the inaugural IFI Interiors Biennale 2013 in South Africa, the following safety requirements and guidelines have been developed by the Exhibition and Event Assosiation of Southern Africa (EXSA) and have been adapted by the SCC in order to inform and regulate the exhibition and event industry on what "best practices" should be used to ensure event / exhibition safety (Annexure B: SCC Interim Exhibitor Handbook). They have been developed to minimise possible liability, injury, accident or loss of life. The following requirements and guidelines, which take into account items of general health and safety, must be followed when involved in an event or exhibition at the Sandton Convention Centre.

This Policy states legal requirements as well as advice on good safe practice. This is based on the principals of Safety and Fire Safety requirements as contained in:

- SABS Codes: SABS 0139 & 0400-1990
- NFPA Codes
- Fire Services Act, "Act 99 of 1987"
- Johannesburg City By-Laws, Fire Safety Regulations
- Disaster Management Act 57
- Occupational Health and Safety act, 1993 (act no. 85 of 1993)
- National Building Regulations
- Electrical Wiring Cods SANS 10142

Within this comprehensive document, the entire planning and approval process for any exhibition at the SCC is described in detail. This involves documents such as a risk assessment and layout drawings to be submitted and approved by various regulatory authorities and the SCC.

Conclusion

The travelling IFI Interiors Biennale 2013 would have to be preceded by the necessary documentation for submission and approval by the local exhibition venue and authorities in each country. The design of the installation and materials used should be in accordance with the legal and safety requirements (Annexure B).

4.5 IFI INTERIORS BIENNALE 2013, SOUTH AFRICA PARTICIPANTS

The context is finally established by recognising the involved parties and participants of the IFI Interiors Biennale 2013. The national and secondary clients, as well as participants described in this section, are specific to the inaugural IFI Interiors Biennale 2013, Johannesburg, South Africa.

Primary Clients:

International: The International Federation of Interior Architects/Designers

ifi IDA International Federation of Interior Architects/Designers A Partner of the International Design Alliance

FIGURE 4.32 IFI logo

National: The South African Institute of the Interior Design Professions

iid the south african institute of the interior design professions

FIGURE 4.33 IID logo

The South African Institute of the Interior Design Professions (IID) is the professional body representing the interior design industry in South Africa. The Institute is dedicated to establishing, promoting and maintaining expertise, professionalism, sound business practice and high standards throughout the industry. The IID is a Member of IFI, the International Federation of Interior Architects & Designers.

Secondary Clients:

The City of Johannesburg

Joburg a world class African city

FIGURE 4.34 City of Johannesburg logo

The Sandton Tourism Association

SANDTON TOURISM ASSOCIATION

FIGURE 4.35 Sandton Tourism Association logo

Exhibition and Event Association of Southern Africa

EXSA EXHIBITION & EVENT ASSOCIATION OF SOUTHERN AFRICA

FIGURE 4.36 EXSA logo

The role of Exhibition and Event Association of Southern Africa (EXSA) is to serve the exhibition and events industry in South Africa. Their strategy is to actively grow and develop the exhibition and events industry within Southern Africa (EXSA 2011).

Conclusion

The primary client and event organiser, IFI, in a joint venture with the local interiors professional body and the host city tourism board will support and host the event.

Biennale Participants:

Biennale participants for both the Sao Paulo (Bienal de Sao Paolo 2011) and Venice Biennale (La Biennale di Venezia 2011) are chosen by the organisation's managing board and director or curator. International artists, designers or architects are invited to create a theme and site specific exhibit for the Biennale.

The IFI Interiors Biennale participants could consist of:

- International organisation: IFI, IDA
- National participants:
  - governing & educational interior design entities from host nation (South Africa):
  - The IID

    IID members:

    -University of Pretoria, Gauteng

    - BHC School of Design, Western Cape

    - Cape Peninsula University of Technology, Western Cape

    - The Design School of Southern Africa, Gauteng

    - Durban University of Technology, Kwazulu Natal

    - Greenside Design Centre, Gauteng

    - Inscape Design College, Gauteng and Western Cape

    - Potchefstroom Akademie, Gauteng

    - Tshwane University of Technology, Pretoria

    - University of Johannesburg, Gauteng

    - Nelson Mandela Metropolitan University, Eastern Cape

  - Individual forerunners in the design field (student and professional) invited by IFI Interiors Biennale 2013 management to participate

Visitor profile

The proposal deals with the communication of the IFI DFIE Declaration to interested visitors. The term 'interested' is defined as "the feeling of wanting to know or learn about something" and "the quality of exciting curiosity" (OUPSA & DUSAE 2010). The attendee could be an international tourist, local visitor, unqualified or interior design professional.

Such visitor would attend the Interiors Biennale on the assumption that they have an inquisitive interest in the interior design field and discipline. Their visitor profile would differ from the Commercial Exhibition visitor- their interest lies mainly within the retail premise associated with this typology. The IFI Interiors Biennale visitor would attend the event with an academic or disciplinary interest with the aim to be informed and enlightened.

academic or disciplinary interest

+

aim to be informed and enlightened

characters:

tourist

local

industry professional

FIGURE 4.37 Images representing possible IFI Biennale attendee typologies

05 design philosophy and approach

DESIGN PHILOSOPHY:

DESIGN FOR (DIS)ASSEMBLY

Having established the context, it is apparent that the site typology (universal) would have the least impact on the design development with the event typology (specific: travelling exhibition), and with the design brief (specific: IFI Interiors Declaration) driving the process.

This chapter reviews a design approach that regards the environmental impact, mobility and lifespan of the installation. From this, pertinent criteria is derived and formulated towards rendering an effective design proposal.

The investigation points to an adaptive solution (design for disassembly) that can respond to various exhibition sites. Prefabricated elements with various assembly configurations offer an effective solution to constraints such as economy of manufacture, transportation and ease of assembly.

Following is a discussion of the cutting method (CNC) suitable for the construction (slotted) as well as the material type (plywood) chosen for the IFI Interiors Biennale 2013 installation.

5.1 CONCEPTUAL APPROACH: INHABITING A WARREN OF ROOMS

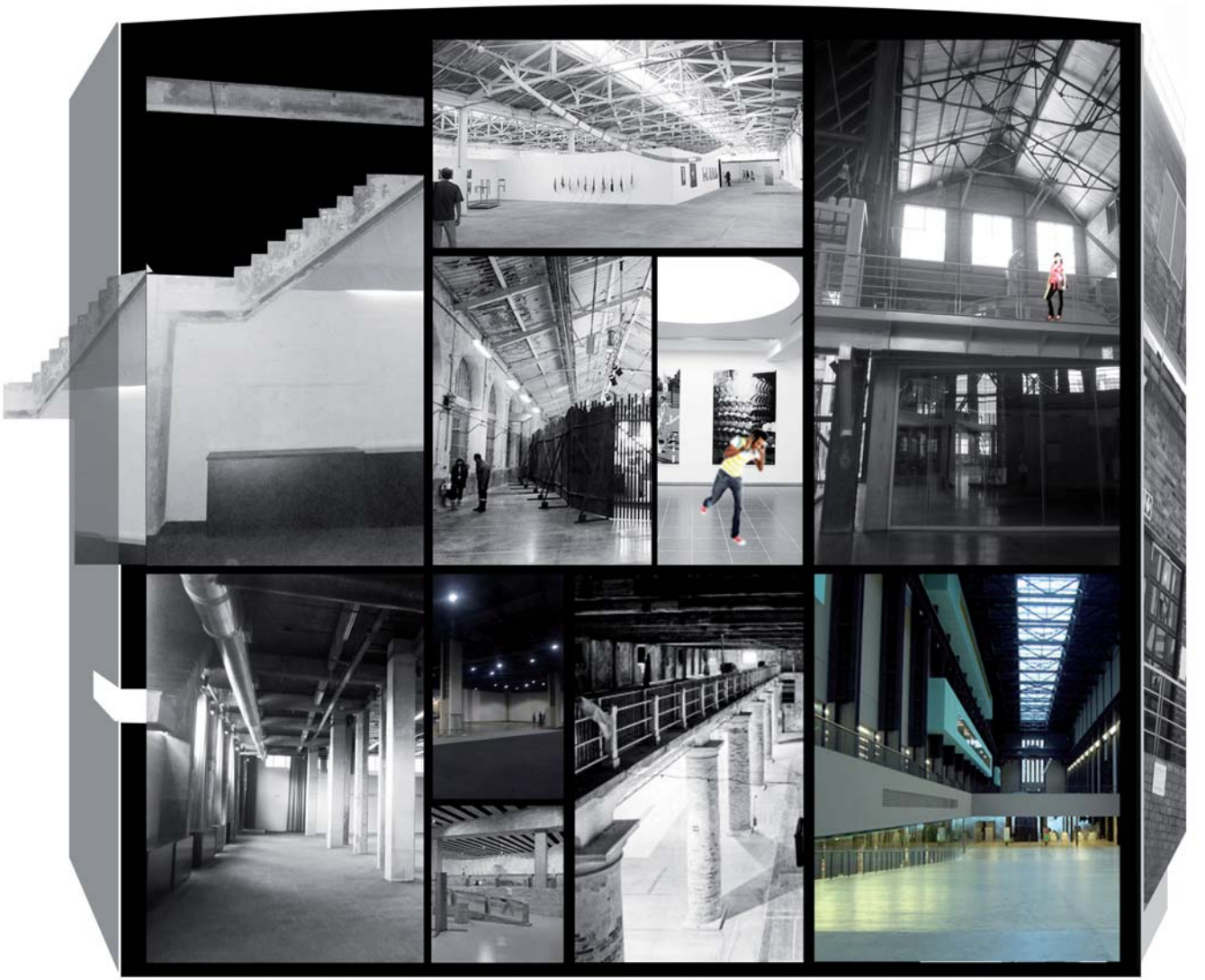


FIGURE 5.1 Composite graphic depicting the conceptual approach: Inhabiting a warren of rooms

From Edinburgh College of Art (ECA) interiors studio practice, derives a conceptual design approach (Hollis & Milton 2007:3). Three principles established by the ECA are realised in the nature of the IFI Interiors Biennale 2013 installation, namely, 'The language of architecture' relating to the exhibition host, 'rooms' communicating the habitation of the host as well as the installation's narration provided by the IFI Interiors Declaration. The seven interiors principles establish the rooms' 'sense of place' and cultivate 'the art of telling a good story'.

The Edinburgh College of Art interior design principles:

1. The language of architecture

All interior design sites or conditions are, literally or analogically, architectural.

2. Rooms

Rooms are the site of ways of behaving, a sense of place and occasion.

3. The art of telling a good story

Always altering things that already exist. The interior designer is not the author of a work, but its teller.

Spankie (Gigli et al. 2007:242) strengthens the premise of narration and sense of place, stating that while the exterior is described as a whole, the interior is described as a series of fragments that are defined by use, for example: kitchen, dining room or living room. She describes an interior as "...a sequence of spaces...particular moments on our way".

The conceptual approach generates a design strategy that regards the three-fold nature (architecture, warren of rooms and narration) of the IFI Interiors installation: Design for disassembly.

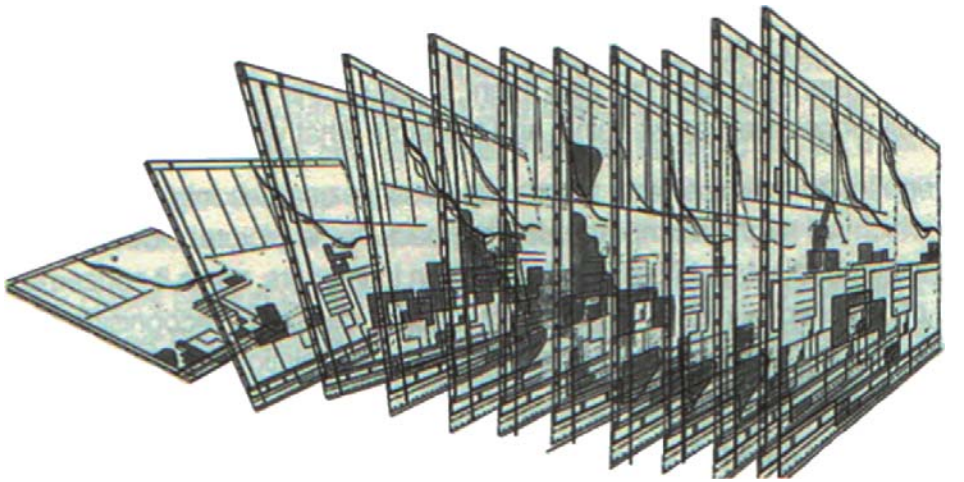


FIGURE 5.2 Fragmented section by Anne Algne

5.2 REPAIR THE CYCLE: DESIGN FOR DISASSEMBLY

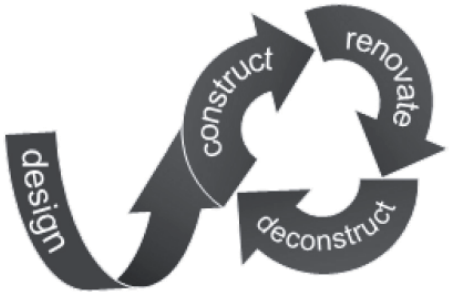


FIGURE 5.3 DfD process diagram

Current product design philosophy (and the design of the production process itself) often leans towards disposable objects with built-in obsolescence (Larson 2011). Design for Disassembly (DfD) is a design strategy that considers the future need to disassemble a product for repair, refurbishment or recycling (Diener 2010). Ultimately, consumer re-education without production redesign is an exercise in futility.

Given environmental and cost constraints, a designer's challenge is as much product de-creation as it is creation. Therefore, DfD strategies are applied throughout the entire design cycle; discover waste, set goals, create solutions, and then monitor results through production, release, use, and end-of-life.

5.2.1 DESIGN FOR DISASSEMBLY AND THE INTERIOR

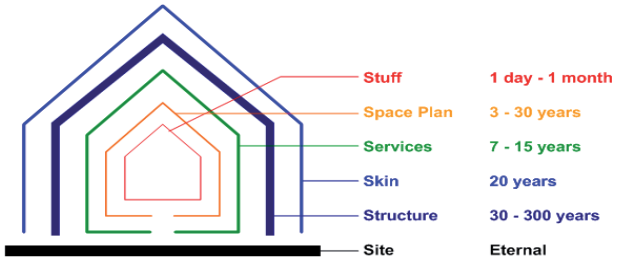


FIGURE 5.4 Stewart Brand's 6 S's from How Buildings Learn

When applying DfD to the built environment, it is necessary to understand the lifespan associated with the built environment. Duffy (Brand 1994:13) states that "a building properly conceived is several layers of longevity of built components." When considering Brand's 6 S's (1994:13) of permanence, one could derive that the stuff, services and space plan fall within the interiors discipline based on its lifespan, internal relation to the structure and intimate relation to the occupant.

Even though the lifetime of interior design is brief when compared to that of the building envelope, it could be argued that interior elements and systems design and construction overlook the conclusion of its short lifespan. There arises within the interiors industry a need for designing for disassembly, and not demolition.

5.2.2 ENVIRONMENTAL CONTEXT

GREEN BUILDING COUNCIL SA
MEMBER ORGANISATION

FIGURE 5.5 GBCSA logo

The Green Building Council of South Africa (GBCSA) encourages and recognises designs that minimise the embodied energy and resources associated with demolition (GBCSA technical manual 2008). The Design for Disassembly credit in the GBCSA technical manual facilitates the reduction in consumption of construction materials through reusing, redesigning or reconsidering conventional approaches to building. The whole lifecycle of a project, including the end-of-life reuse and recycling, and the materials used in its construction should be considered from the design stage to examine the materials, resources or components of the building fabric which might be taken apart and easily used again or recycled.

Semi-permanent construction methods could also reduce the construction time and waste production on site considerably. The dimensions of whole prefabricated units could be reduced if the component could be assembled with ease on site. This could reduce transport volume, thereby reducing its embodied energy. It also encourages the honest use of materials and reduces the need for toxic adhesives.

5.3 DESIGN TO C-O-N-N-E-C-T

The Design for Disassembly approach will influence the construction of both the prefabricated components and the IFI installation assembly on site.

Conventional exhibition construction methods are reviewed. Traditional methods, as well as contemporary fastener and adhesive-free joining methods (temporary joints), are investigated for the primary in-situ construction.

The premise of assembly is that the object or structure has one passive disassembled state and one or more assembled active states with the objective to save space. The IFI Interiors Biennale 2013 installation would exist within the passive state when transported between exhibition venues, and actively populate and react to the host space during exhibitions. During the assembled state the prefabricated pieces should be joined with ease and speed resulting in a temporary, sound structure with post-exhibition dismantling in mind.

5.3.1 EXHIBITION SYSTEM CONSTRUCTION

As stated in the previous chapter, two typical stands can be found at a commercial exhibition; the standard or shell scheme which could be personalised to a certain degree, and the custom built stand, bespoke in nature and designed and built for a specific event, rather than using 'off the shelf' components.

a) The Shell Scheme

Standard exhibition modules are designed to accommodate flexibility, reusability, and ease of assembly and dismantling. The most commonly used international system is the 'Octanorm Exhibition System' (Octanorm 2011).

The octanorm structure consists of aluminium extrusions with individual wall in-fill panels. The system dimensions and part numbers are identical worldwide. The kit of parts is easily transported, set up and dismantled.

Conclusion

Although the Octanorm Exhibition System construction is trusted and successful, it seems too standard and could lack the ability to create a sense of place to shape temporary interiors that convey the IFI Interiors Declaration.

FIGURE 5.6 Octanorm wall system at Markex 2011, SCC

FIGURE 5.7 Octanorm raised floor system at Markex 2011, SCC

b) The Custom Stand

The bespoke stand is an event and client-specific structure, neither flexible nor reusable. Cilliers (2011) states that construction methods used, relate to that of shop-fitting-practices. Panel products such as chipboard and medium-density fibreboard (MDF) are used, being joined with nails and adhesives. The structure would then be demolished post exhibition by literally tearing the stand apart during the 'break-down' phase.

Conclusion

The design of the IFI Interiors Biennale 2013 installation falls within the premise of custom built stands, but the construction methods used are too permanent. A construction method that combines the adaptability of shell scheme construction with the design freedom of the bespoke stand will be explored.

FIGURE 5.8 'IID House' at Grand Designs Live 2011

5.3.2 EASTERN JOINERY

Traditional Japanese joinery represents complex timber joints. Members are held together without the use of adhesive, enabling the pieces to be disassembled as required.

Considered Joints:

1. Splicing Joints (Tsugite):
   - Dovetail Lap Joint (Koshikake-ari-tsugi)
   - Stub tenon joint (Mechigai-tsugi)
2. Connecting Joints (Shiguchi):
   - Cross Lap Joint (Ai-gaki)

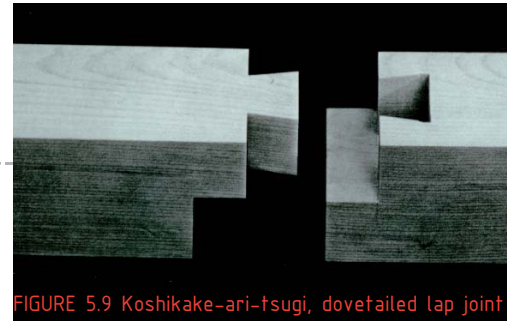


FIGURE 5.9 Koshikake-ari-tsugi, dovetailed lap joint

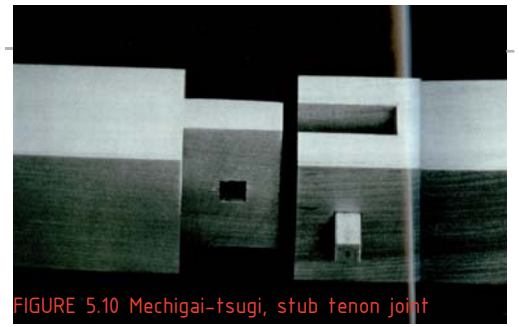


FIGURE 5.10 Mechigai-tsugi, stub tenon joint

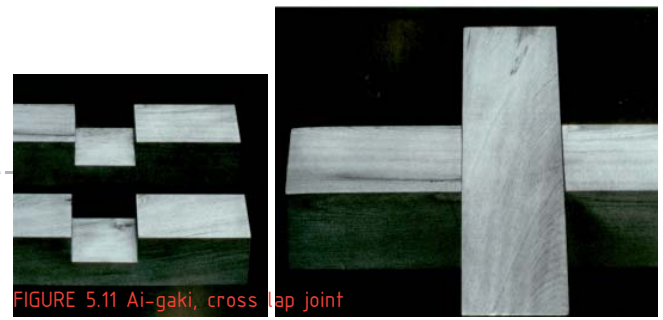


FIGURE 5.11 Ai-gaki, cross lap joint

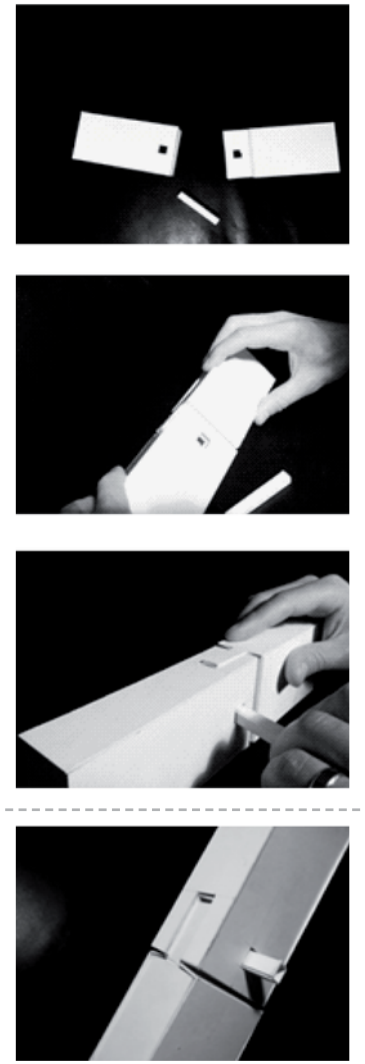


FIGURE 5.12 Prototyping the stub tenon joint

Conclusion

The stub tenon joint was explored by prototyping. It was found that the loose pin does not contribute structurally and it could complicate the storage and travelling process.

Seike (2010:100) classifies the two members of a joint as male or female. Ordinarily, whether a joint is male or female is determined by its shape (dovetail lap joint and stub tenon joint), but with some joints the two members are identical. The latter (cross lap joint) would provide more adaptability and versatility and will therefore be considered.

5.3.3 OTHER TEMPORARY JOINTS CONSIDERED:

a) Magnets

Barkwadraat by Greentunadesign and Joenes:

The base of the table snaps together using strong magnets (Greentunadesign 2011).

FIGURE 5.13 Barkwadraat magnet joint

b) Rubber rings

Poles Apart by Adrian Bergman:

A modular retail display system that is only held together by rubber rings. Rubber rings on both sides of angled holes in the table top hold the legs in place (Bergman 2011).

FIGURE 5.14 Poles apart rubber ring joint

c) Wedges

Plywood birdbox by Jack Smith:

The two flat pieces are bent and joined together using pins (Notcot 2011).

FIGURE 5.15 Plywood wedge joint by Jack Smith

d) Shape and gravity

Traliccio by 4P1B Design Studio:

Traliccio is a library wall in wood and metal. The shelves can be easily moved either vertically, by utilizing the teeth found on the back of the two supporting columns of wood, or horizontally so as to leave the user maximum freedom of composition (4p1b 2011).

FIGURE 5.16 Shape and gravity joint by 4P1B Design Studio

e) Slotted joint

Link chair by Cragelmeyer:

Slot together plywood chair. There are no tools, fasteners or glue needed (Cragelmeyer 2008).

FIGURE 5.17 Slotted friction-fit joint by Cragelmeyer

f) Lap joint

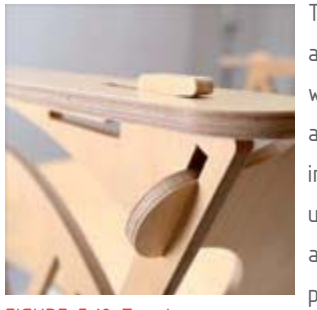
Skalor shelving by Norman Hadler:

A plug-in shelving system that can be assembled and modified quickly without tools. (Hadler 2011)

FIGURE 5.18 Slotted lap joint by Norman Hadler

g) Interlocking shape and tension

Table by Plydea:



The Plydea (plywood) products aim to use the thinnest material with the least waste. This is achieved by selective tensioning in the products. The furniture uses no fasteners and no tools are required for assembly. The parts are joined using integrated joints (Plydea 2011).

FIGURE 5.19 Tension joint by Plydea

h) Twist joint

Stand up by Raw Studios:

'Stand up' is a laptop stand. The stand, made of plywood, could be assembled using a twist joint (Raw Studios 2011).

FIGURE 5.20 Twist joint by Raw Studios

i) Shape

Join table by ding3000:

Three different cut-outs subtracted from the wooden legs fit into each other, providing structural stability without any tools, by means of the simple enigmatic principle of the slightly transformed devil's knot (ding3000 2011).

FIGURE 5.21 Cut-out shape joint by ding3000

j) Stacking (gravity) and hook and loop (mechanical)

STACK by AWS Designteam:

STACK is a modular furniture system that is reduced to just one element. The elements are stacked and stuck together with industrial Velcro (AWS Designteam 2011).

FIGURE 5.22 Stack and mechanical joint by AWS Designteam

k) Stacking (gravity only)

Living nature installation by Hector Ruiz Velazquez:

Creating space within space by stacking brown cardboard boxes with reusability, flexibility and driving the process (Velazquez 2011).

FIGURE 5.23 Gravity construction joint by Velazquez

Conclusion

After an evaluation of the various types of temporary joints, it has been found that slotted construction offers the most potential in terms of:

- ease of (dis)assembly and versatility (simple joint)
- structural stability gained through the use of both gravity and friction fit: less assembly security in gravity only
- joint durability: magnets and Velcro become less effective over time
- minimum number of prefabricated elements: ease of assembly/organisation also pins, wedges and rubber bands could get lost or damaged during travelling
- planar nature of disassembled elements: space saving during transport and storage.

The slotted joint will be explored further.

5.4 SLOTTED CONSTRUCTION

Slotted construction is a friction fit joining method associated with flat pack construction and prefabricated planar elements. The system falls well within the design for disassembly premise.

5.4.1 JOINT ANALYSIS THROUGH DRAWING:

a) ZA11 Pavilion by Stefanescu, Bedarf and Hambasan (Jet 2011):

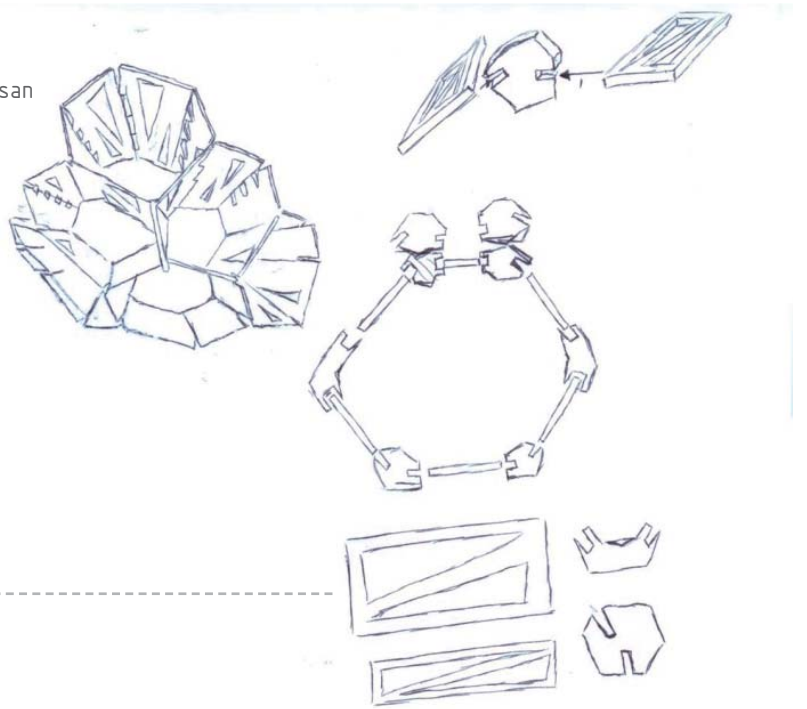


FIGURE 5.24 ZA11 Pavilion (Stefanescu, Bedarf and Hambasan 2011)

Designers: Dimitrie Stefanescu, Patrick Bedarf, Bogdan Hambasan
Location: Cluj, Romania
Project Year: 2011
Photographs: Patrick Bedarf, Georgiana Hlihor, Daniel Bondas, Georgeta Macovei

b) Aero pavilion by Department for Architecture Design and Media Technology, Denmark (Rosenberg 2011)

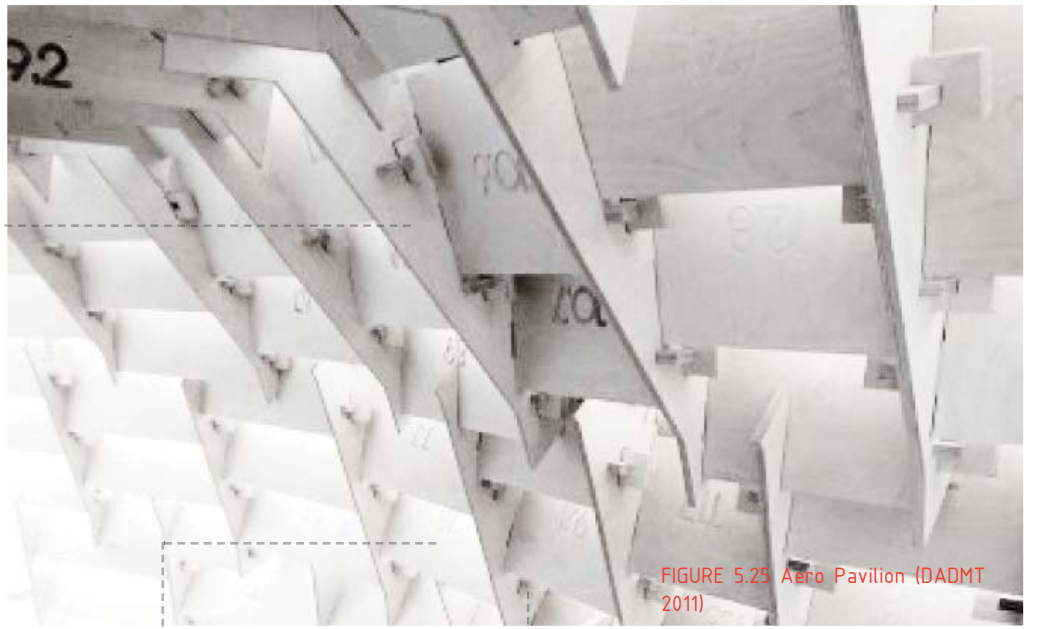
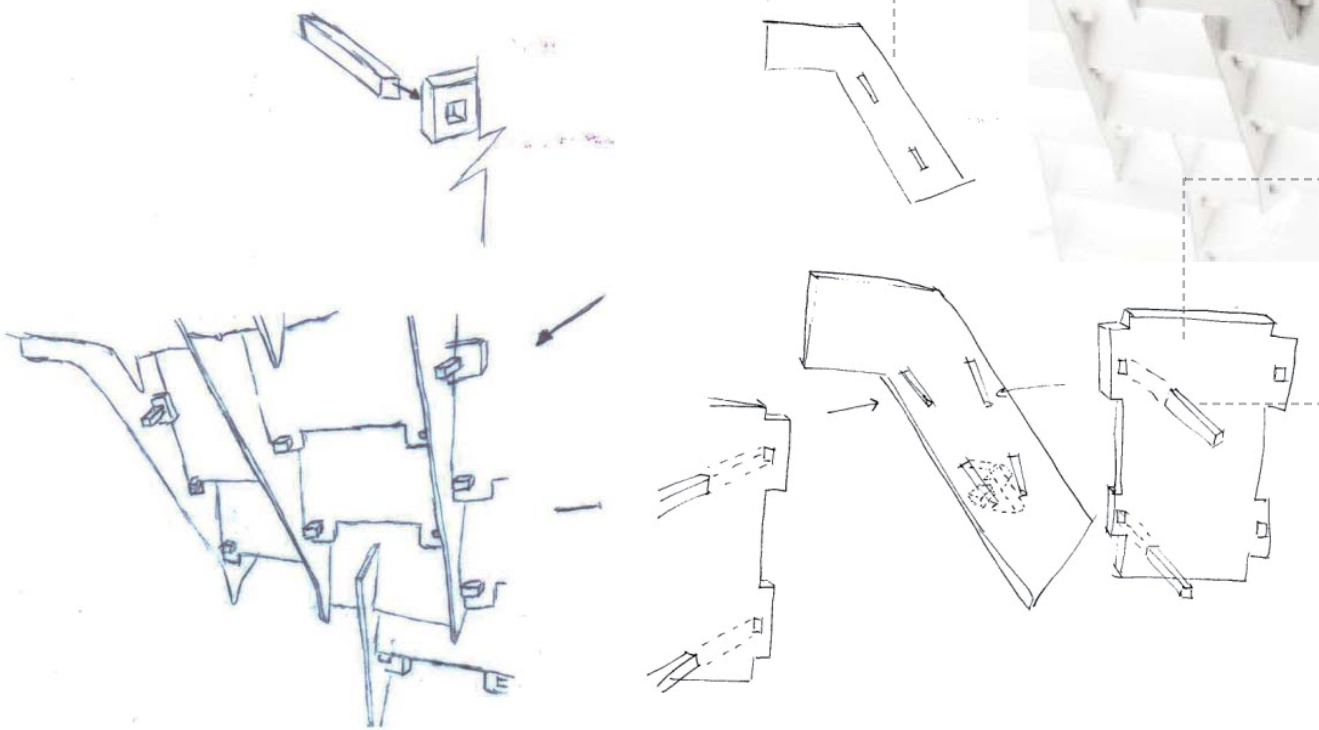


FIGURE 5.25 Aero Pavilion (DADMT 2011)



Designers: Department for Architecture Design and Media Technology
Location: Aalborg, Denmark
Student team: Jonas Nielsen, David Thomsen, Mads Skak, Henrik Jacobsen, Phillip Klausen, Laura Bogstad
Project year: 2011
Photographs: Courtesy of Department for Architecture Design and Media Technology

Conclusion

The investigative drawings allow a conceptual understanding of slotted construction and its components. This joint will be further explored through physical and digital prototyping in the following chapter.

Another factor to consider is the organising systems and materials which these typologies are likely to require. These will be investigated in the next section of the chapter.

c) Slotted products:

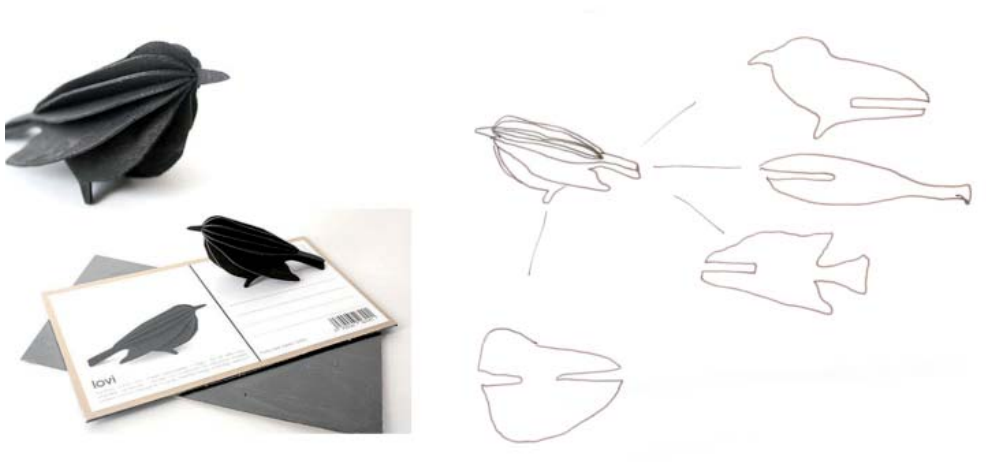
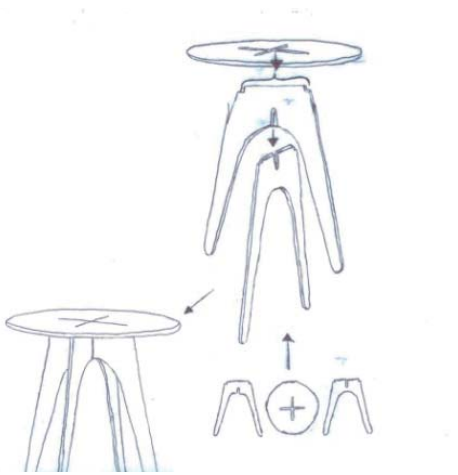


FIGURE 5.26 Plywood bird postcard by Lovi

FIGURE 5.27 Flat pack table (series ii) by Matthew de Moiser



5.5 FACILITATING THE ASSEMBLY

A practical organising system is investigated to ensure the success of in-situ assembly.

The international success of the project's onsite assembly relies on universal arrangement and communication methods.

Both colour coding and numeric organisation can be understood internationally, bridging the language barrier.

5.5.1 COLOUR CODING

Colour coding in architecture is often used to orientate the user, as is evident at Madrid Barajas Airport Terminal 4, also known as the Rainbow Airport.

FIGURE 5.28-29 Interior and exterior views of Madrid Barajas Airport Terminal 4 (Renau 2004)

Designers: Richard Rogers and Antonio Lamela
Location: Madrid, Spain
Project Year: 2004
Photographs: Manuel Renau

Application

The IFI Interiors installation will use colour coding as primary ordering system. A specific colour is allocated to each principal section to aid assembly, disassembly and storage.

The short life span associated with interior design influences its trendy nature. The Pantone fashion report (Pantone 2011) inspired the colours chosen to translate this nature.

- Pantone 13-0632
- Pantone 15-1050
- Pantone 16-1546
- Pantone 19-1764
- Pantone 18-3027
- Pantone 19-1526
- Pantone 16-5418
- Pantone 18-0538
- Pantone 14-1107
- Pantone 14-1307

5.5.2 NUMBERING

Secondary organisation is accomplished by numbering the elements.

FIGURE 5.30 EXOtique (PROJECTiONE 2011)

EXOtique by PROJECTiONE (http://Projectione.com 2011)

FIGURE 5.31 Aero Pavilion (DADMT 2011)

Aero pavilion by Department for Architecture Design and Media Technology, Denmark (Rosenberg 2011)

Application

The ten digit (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) numeral system known as Hindu-Arabic numerals are the most commonly used (Britannica 2011) and will therefore be applied to the IFI Interiors installation.

Designers: PROJECTiONE
Location: Ball State University, Muncie, Indiana, USA
Project year: 2011
Photographs: Courtesy of PROJECTiONE

Designers: Department for Architecture Design and Media Technology
Location: Aalborg, Denmerk
Project year: 2011
Photographs: Courtesy of DADMT

5.6 MATERIAL SELECTION

The repeated (dis)assembly of the IFI Interiors installation and the specific joint requires a suitable material. A wood derivative panel product is considered, based on economic, structural and environmental viability.

Timber is a natural material, which provides an extensive range of species and grades. Faults such as shrinkage and deformation result in unwanted structural movement. The development of wood derivatives with the use of mechanisation and chemistry allow timber to be reproducible, uniform and trustworthy (Kula and Ternaux 2008:20). Wood derivatives such as medium-density fibreboard, oriented-strand board, chipboard and plywood are also known as Engineered Wood Products (EWP).

5.6.1 PLYWOOD

Plywood is considered based on its predominant use in the slotted construction industry. The rationale for investigating plywood as a feasible alternative is derived from its:

- dimensional stability
- flatness
- homogenous edge (deciding factor)
- flexibility
- equal strength lengthways and perpendicular to this (deciding factor)
- possibility of being given fire rating (deciding factor)
- suitability for machining (deciding factor)
- renewability and recyclability
- economical viability
- weight
- availability

a) Description

Plywood is a composite sandwich material which allows certain limitations and drawbacks of wood to be resolved. It is fabricated from unrolled sheets of veneer, each called a ply, always in an odd number (3-15), where the direction of the grain is alternated for each ply.

FIGURE 5.32 Veneer production: continuous rotary cutting (Kula and Ternaux 2008:19)

b) Fire Resistance

Other factors to consider are exhibition material, safety and fire implications. The SCC states that "any flammable construction, building and/or other materials shall be treated with a fire retardant substance and certified as such prior to commencement of construction" (Annexure B: SCC Interim Exhibitor Handbook).

For plywood, fire retardant treatments are impregnated into structural sheathing plywood (LeVan & Collet 2011). Fire retardants work by altering the combustion chemistry of wood. They reduce the flammability of wood by (1) reducing the rate at which flames travel across the wood surface, thereby eliminating progressive combustion, and (2) reducing the rate of heat release.

c) Sustainability / Lifespan

Plywood as a building material is a source of formaldehyde exposure in buildings. Conventional plywood contains urea-formaldehyde. Formaldehyde is classified as a volatile organic compound (VOC). VOC's are chemicals that become a gas at room temperature. As a result, products made with formaldehyde will release the gas into the air. This is called off-gassing. If high concentrations of formaldehyde are off-gassed and breathed in, it could cause health problems (Minnesota Department of Health 2010).

To solve this indoor environmental problem, the use of PureBond technology which utilises a formaldehyde-free adhesive is proposed. Replacing traditional urea formaldehyde (UF) plywood construction with non-toxic soy-based PureBond enables a VOC free exhibition environment (Oosterhouse 2011).

FIGURE 5.33 FSC logo

The timber is sourced to manufacture the plywood to be certified by the Forest Stewardship Council™ (FSC). FSC certified forest products are verified from the forest of origin through the supply chain. The FSC label ensures that the forest products used are from responsibly harvested and verified sources (Forest Stewardship Council 2011).

d) Plywood Disposal

The plywood used for the IFI Installation could be disposed of post IFI Interiors Biennale 2013 in three ways according to Plywood manufacturers and suppliers WISA (WISA 2011). The three possible discarding methods are:

i) Recycling

The most recommendable way to dispose of plywood is to find a new end use application for it.

ii) Incineration

Plywood has a good fuel value and it can be utilised as energy. All uncoated plywood panels and plywood panels coated with phenolic films can be burned at power plants with suitable conditions, where, for example, the temperature is high enough (min. 850ºC).

Wood is renewable energy source so burning wood does not increase the amount of carbon dioxide released to the atmosphere – tree bounds the same amount of carbon for growth as it releases when wood is burned for energy or decaying.

iii) Landfill

Plywood products can be dumped in a landfill, with the exception of impregnated plywood. Plywood decomposes very slowly

Conclusion

As the preferred plywood disposal method (WISA 2011), a new end use application for the IFI Interiors Installation is suggested when the system is damaged and worn beyond the desired use and effect. When disassembled (as intended) the larger plywood panels could be re-cut and used as hidden structural elements or formwork in construction. Smaller panels could be altered to become components of cabinetry or furniture.

5.7 CNC ROUTING

Slotted construction requires exact precision within the joint. A CNC router has a tolerance of approximately 0.05mm and would allow the IFI Installation components to join accurately during assembly.

Numerical control (NC) refers to the automation of machine tools that are operated by programmed commands encoded on a storage medium, as opposed to manually controlled via hand wheels or levers, or mechanically automated via cams alone (MultiCam 2010).

Computer numerical control (CNC) machining process allows end-to-end component design using computer-aided design (CAD) and computer-aided manufacturing (CAM) programs. The programs produce a computer file that is interpreted to extract the commands needed to operate a particular machine via a post-processor, and then loaded into the CNC machines for production.

CNC routing is a powerful overhead router moving under computer control to cut and profile sheet materials laid on a bed surface. The bed size or working envelope (image) varies between CNC routers. A large machine could house panel sizes of up to 5100 x 2100mm with a material thickness of 300mm.

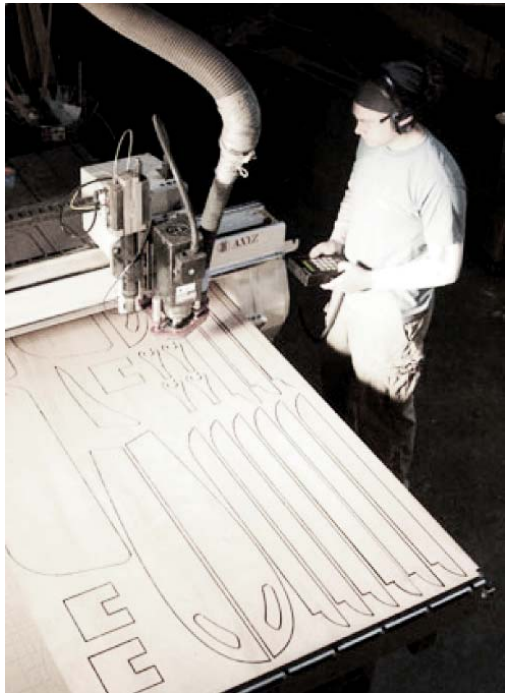


FIGURE 5.34 CNC routing process (Chesapeake Light Craft 2011)

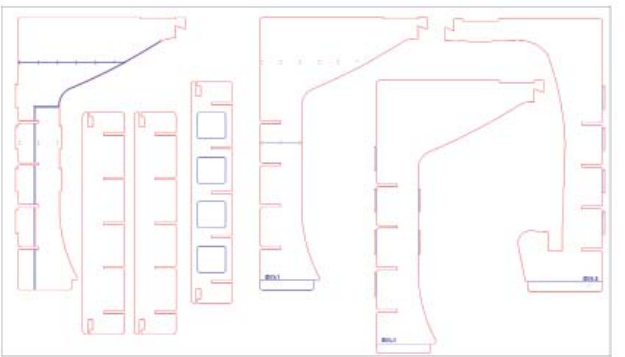


FIGURE 5.35 CAD document for CNC cutting

When preparing a CAD drawing for CNC routing, the separate pieces are placed on a layout which corresponds to the size of the panel used. The panel size is determined by standard panel and CNC working envelope dimensions.

The layout of the design in CAD should consider the economic use of material by reducing off-cuts.

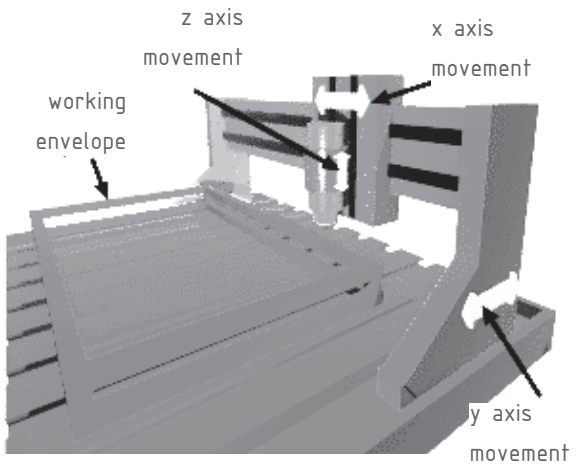


FIGURE 5.36 CNC router (Schenectady Schools 2011)

5.8 ASSEMBLY PRECEDENT STUDIES

5.8.1 THE ARCHITECTURAL ASSOCIATION SUMMER PAVILIONS

2005/6 Fractal Pavilion

2006/7 Bad Hair Pavilion

2007/8 Swoosh Pavilion

2008/9, Driftwood Pavilion

Designers' notes: Architectural Association (AA)

The AA Summer Pavilion programme has been running since 2005. The AA have produced a student-designed pavilion at Hooke Park each year that has explored the architectural potential of experimental timber construction.

Review: Author

The AA Summer pavilions create interactive temporary spaces. Low-tech timber construction is used to generate elegant, contemporary designs. The on-site assembly of this structural typology require prefabricated components with mechanical joints. These attributes influence the design development of the IFI Interiors Installation 2013.

Designers: AA students
Location: Hooke Park, London, United Kingdom
Project Year: Annually
Photographs: Courtesy of AA

FIGURE 5.37 Fractal Pavilion (AA 2005/6)

FIGURE 5.38 Bad Hair Pavilion (AA 2006/7)

FIGURE 5.39 Swoosh Pavilion (AA 2007/8)

FIGURE 5.40 Driftwood Pavilion (AA 2008/9)

5.8.2 MUSEUM OF MODERN ART (MOMA) HOME DELIVERY: FABRICATING THE MODERN DWELLING

Home Delivery: Fabricating the Modern Dwelling is both a survey of the past, present and future of the prefabricated home, as well as a building project on the Museum's vacant west lot (MOMA 2008).

Four prefabricated full-size homes were commissioned and built outside the museum. The life-size exhibition allows visitors to walk through the structures, which include both currently viable domestic structures and futuristic visions. The exhibition attests to the diversity of procedural, formal and technological innovation in prefabricated architecture, and illustrates its role in architectural invention, material and formal research, and sustainability.

"This diverse collection of material illustrates how the prefabricated house has been, and continues to be, not only a reflection on the house as a replicable object of design, but also a critical agent in the discourse of sustainability, architectural invention, and new material and formal research." (MOMA 2008)

'Housing for New Orleans' (Massachusetts Institute of Technology School of Architecture and Planning) and the 'Burst home' (Jeremy Edmiston and Douglas Gauthier, New York) are discussed based on their relevance to the IFI Installation.

a) Housing for New Orleans

Designer's notes: Massachusetts Institute of Technology School of Architecture and Planning

"The project was interesting in its juxtaposition of opposites: a highly digital process one day, hammering and wedging the next; automated and technically innovative machining of components... coupled with an ancient ethos of friction-joined parts; a very small, wooden structure designed for a region in desperate need of homes to inhabit fields of now empty lots... displayed in Midtown Manhattan.

As a structure, it is a mixture of tough computing, tough fabrication, and tough assembly.

We assembled the structure and trim in only 18 days with an average of three people every day." (Sass 2008)

FIGURE 5.41 Friction-fit construction: Housing for New Orleans interior (Barnes 2008)

Review: Author

The friction-fit construction of prefabricated elements and the use of plywood in this construction typology are influential to the project. The ease and speed of assembly, evident from the small assembly team and brief construction time, are deciding factors in the IFI Installation design process.

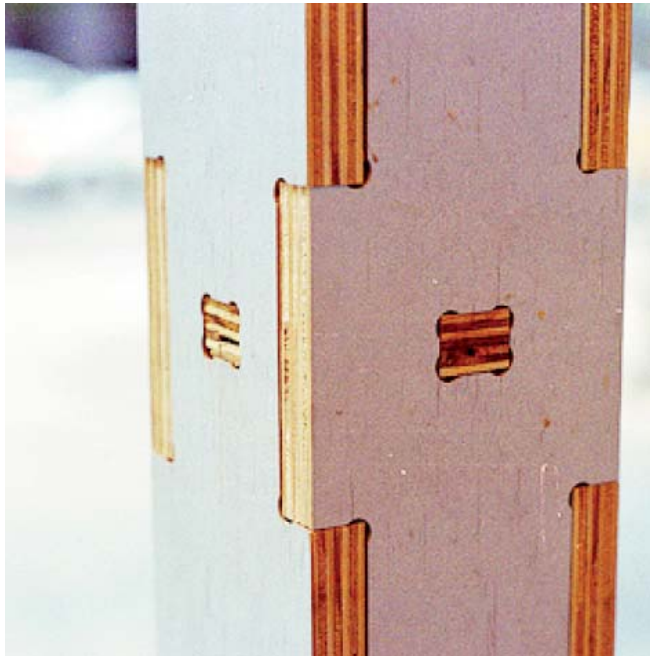


FIGURE 5.42 Friction-fit detail: Housing for New Orleans (Barnes 2008)

Designer: Massachusetts Institute of Technology School of Architecture and Planning with Associate Professor Lawrence Sass (Cambridge)

Location: New York, United States of America

Project Year: 2008

Photographs: Richard Barnes

b) Burst Home

Designer's notes: Jeremy Edmiston and Douglas Gauthier

The BURST*008 team has been on site longer than any of the teams from the other houses in the show. That is because the house functions not as a ready-made but also as a new type of prefabricated building system. It might be more accurate to call BURST*008 a kit home.

While prefabricated houses are often made up of several large parts slotted together on site, BURST is made up of thousands of individual pieces.

Review: Author

The Burst home consists of prefabricated components constructed on site. Whilst the premise of the structure is within the realm of design for disassembly, the mechanical and diagonal joints as well as unmarked elements used, result in extended construction time.

The use of plywood as primary construction material influenced the project material choice.

FIGURE 5.43 Fin construction detail: Burst Home (Barnes 2008)

Designer: Jeremy Edmiston and Douglas Gauthier (BURST*008)

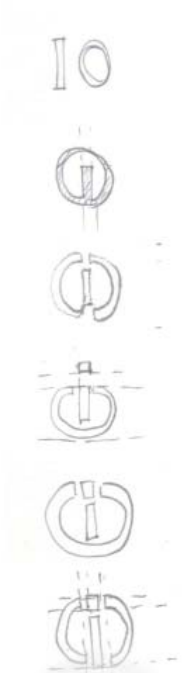
Location: New York, United States of America

Project Year: 2008

Photographs: Richard Barnes

FIGURE 5.44 fin construction: Burst Home (Barnes 2008)

06 design development



ifi InsideOut Interiors Biennale 2013

activate

The chapter proposes a brand strategy and design synthesis for the IFI Interiors Biennale 2013 by applying the theoretical approach and design concept founded in previous chapters. The concept development process relied on a series of sketches, cardboard models, computer generated images and scaled prototypes.

6.1 BRANDING THE EVENT

Experience and perceptions create a platform for brands. Mitchell and Rudner (Gigli et al., 2007:69) argue that these perceptions are what drive the reality of brands in the minds of consumers and other target audiences. The IFI Interiors Biennale 2013 could serve as starting block to initiate a "rebranding of interior design to align the perception and reality of the profession" (Gigli et al. 2007:74).

Locker (2011:18) describes the exhibition stand in a commercial context as a three-dimensional expression of a brand. The stand could communicate through the stand itself and by means of virtual and paper-based material. She states that all the communicative material needs to be instantly recognisable as belonging to a particular brand image.

The proposed title of the IFI Interiors Biennale 2013,

InsideOut

relates to the normative position established in Chapter 2. The inaugural theme will be:

Celebration of the Found Space

According to Linden and Creighton (2010:25), the theme selected by the would-be host city for the event is particularly relevant to an issue of global significance. The theme, Celebration of the Found Space, comments on the global condition of urban sprawl. It suggests rather a re-use and re-inventing of the existing built infrastructure and spaces.

6.1.1 THE BRANDMARK

A logo or brandmark is a graphically designed symbol that identifies the brand at a glance. It is an essential tool for fusing different types of two- and three-dimensional brand materials together, but more importantly, connecting the user directly to the brand.

a

b

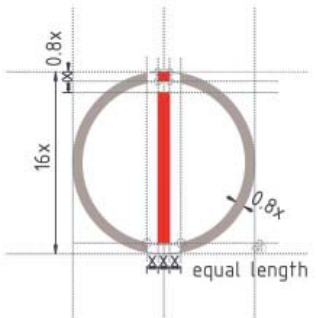
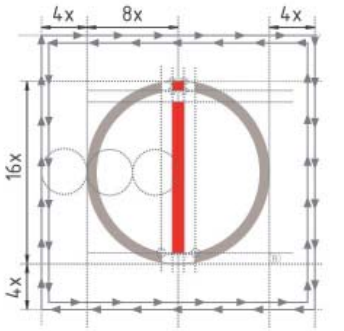


FIGURE 6.1 (a-c) IFI InsideOut Interiors Biennale logo

6.1.2 PROTECTING THE INTEGRITY OF THE BRANDMARK

With some clear space

c



And careful colour management

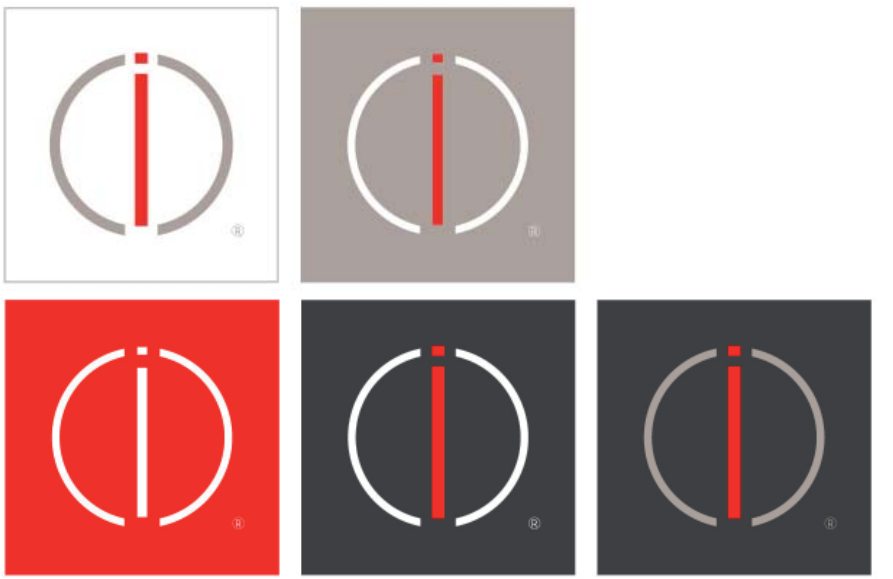


FIGURE 6.2 IFI InsideOut Interiors Biennale logo: colour management

6.1.3 CROPPING THE BRANDMARK

FIGURE 6.3 IFI InsideOut Interiors Biennale logo: cropping

Cropping the ends, but still obviously the brandmark.

Use the brandmark as a cropped graphic, but only with the full brandmark represented.

6.1.4 MULTIPLYING THE BRANDMARK

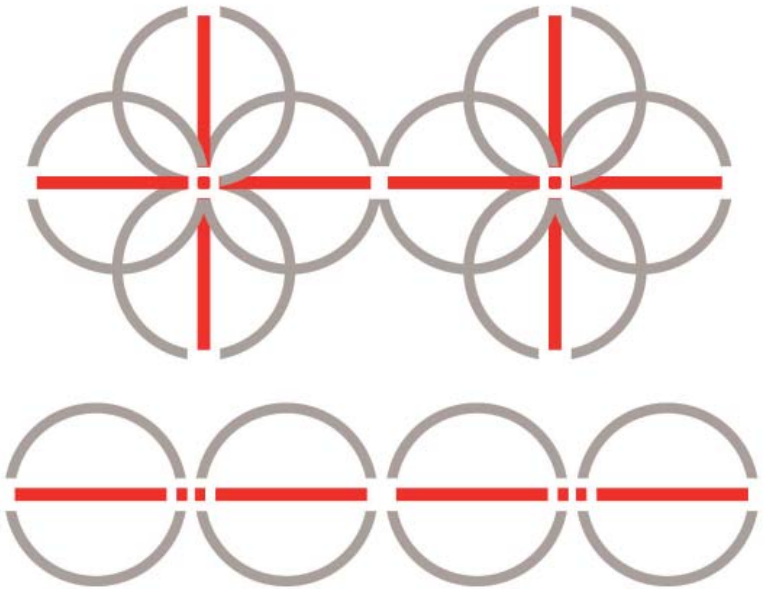


FIGURE 6.4 IFI InsideOut Interiors Biennale logo: multiplying

Use the pattern graphic with discretion and only with the full brandmark represented.

6.1.5 COLOURS USED

PANTONE UNIVERSE
Red 032 C

PANTONE UNIVERSE
Warm Gray 6 M

PANTONE UNIVERSE
19-4305 TPX

6.1.6 TYPOGRAPHY

Use Isocpeur for printed and electronic elements.

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn

Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz

6.1.7 APPLYING THE BRAND TO THE IFI INTERIORS DECLARATION

The design brief has already established that the IFI Interiors installation will manifest the seven core principals stated in the IFI Interiors Declaration.

Relevance

Knowledge

Culture

Business

Responsibility

Value

Identity

The principals as stated in the IFI Declaration (above) are generic terms applied to the interiors discipline. When these values are translated into interior design(er) manifestos they are better able to convey spatially the qualities of the IFI Declaration.

Interior design(er) manifestos:

a

FIGURE 6.5 IFI InsideOut Interiors Biennale sub-brands (a, b)

6.1.8 SUB-BRAND BRANDMARKS

b

Spacing between brandmark and sub-brand indicated by circular spacers above; determined by size of brandmark used.

Product Application:

FIGURE 6.6 insideOut brandmark application to assembly document

6.2 DESIGN PROPOSAL A: JUNE 2011

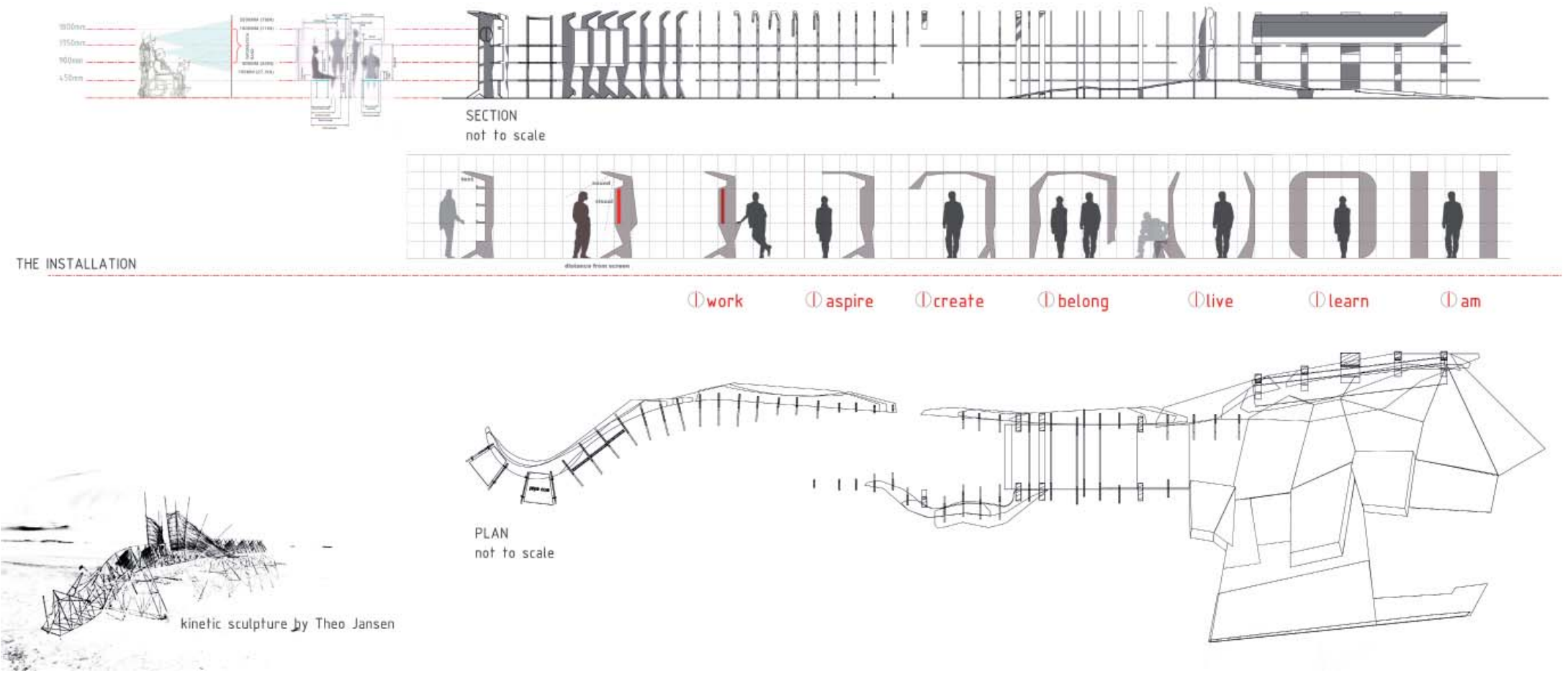
The following general arrangement plan for the SCC and IFI installation design proposal was presented in June 2011. This initial proposal will be subjected to the design concept and approach discussed in the previous chapter, as well as a spatial exploration of the container and iconic volumetric study to further inform the intuitive design of the seven principal spaces.

FIGURE 6.7 June 2011 general arrangement layout Exhibition 1, SCC

Information band heights:

The design of exhibition graphics requires careful organisation so that important information remains at heights accessible to the majority of visitors.

FIGURE 6.8 June 2011 IFI Installation proposal: section and plan



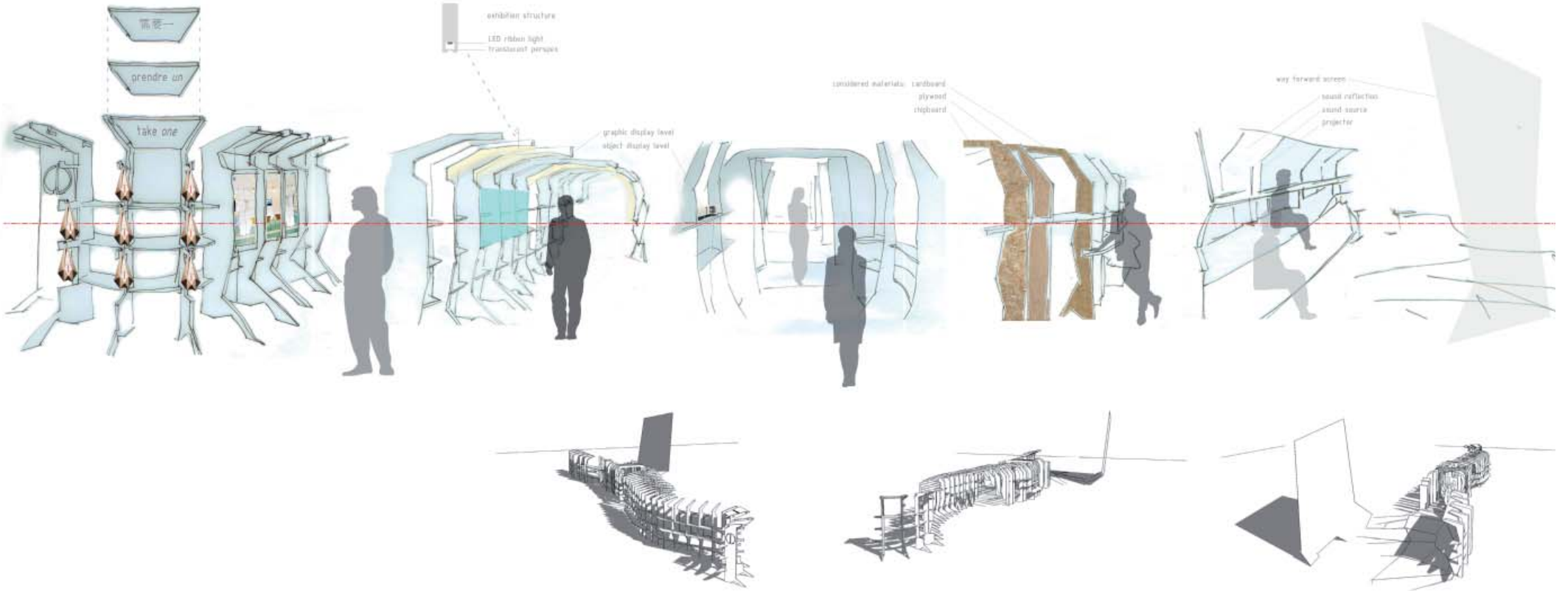


FIGURE 6.9 June 2011 IFI Installation proposal: 3D images

The installation design conveys the inside-out approach within the exhibition space, but requires a support system that allows the event to reach outside the venue. The 'Shift' system is designed to fulfil this function and serve as exhibition infrastructure throughout. The 'Shift' combines exhibition and ergonomic principles to create an adaptable secondary exhibition system.

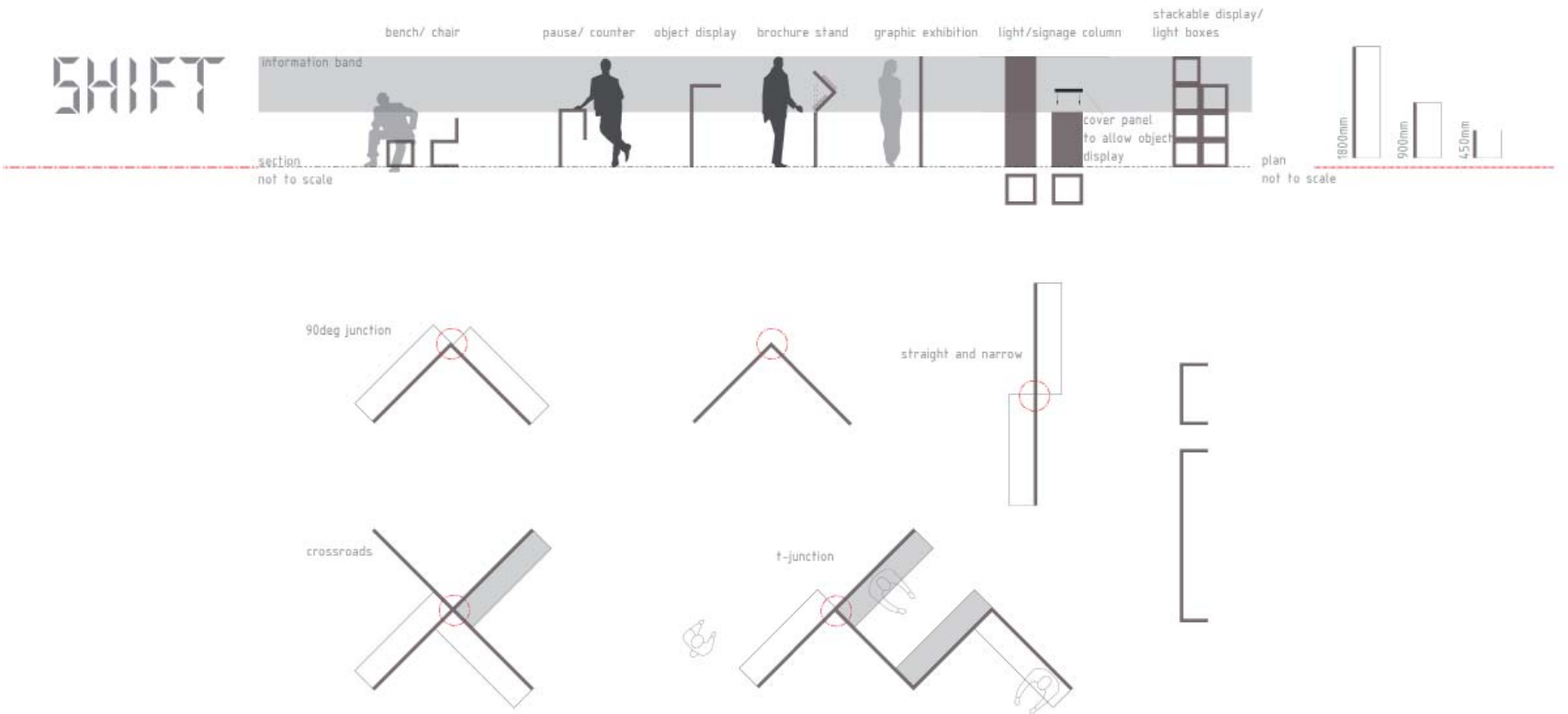


FIGURE 6.10 SHIFT: The supporting exhibition system

6.2.1 DESIGN PROPOSAL A: CRITIQUE

The June 2011 design proposal aimed to incorporate exhibition information principles, user ergonomics and a sense of movement. Whilst these aims were incorporated in the design, the footprint is inflexible. The installation requires the ability to adapt to different exhibition venues to ensure its success as travelling exhibition. The assembly of components is mostly set, unable to accommodate the curator's adaptation of the exhibition in different countries.

Although the panel sizes took into account the internal dimensions of the container, it did not fully utilise the available space. This will be further explored.

The 'Shift' would still be proposed as supporting exhibition system, but the IFI Installation as primary scheme will be explored and developed further.

6.3 DESIGN PROPOSAL B: FINAL

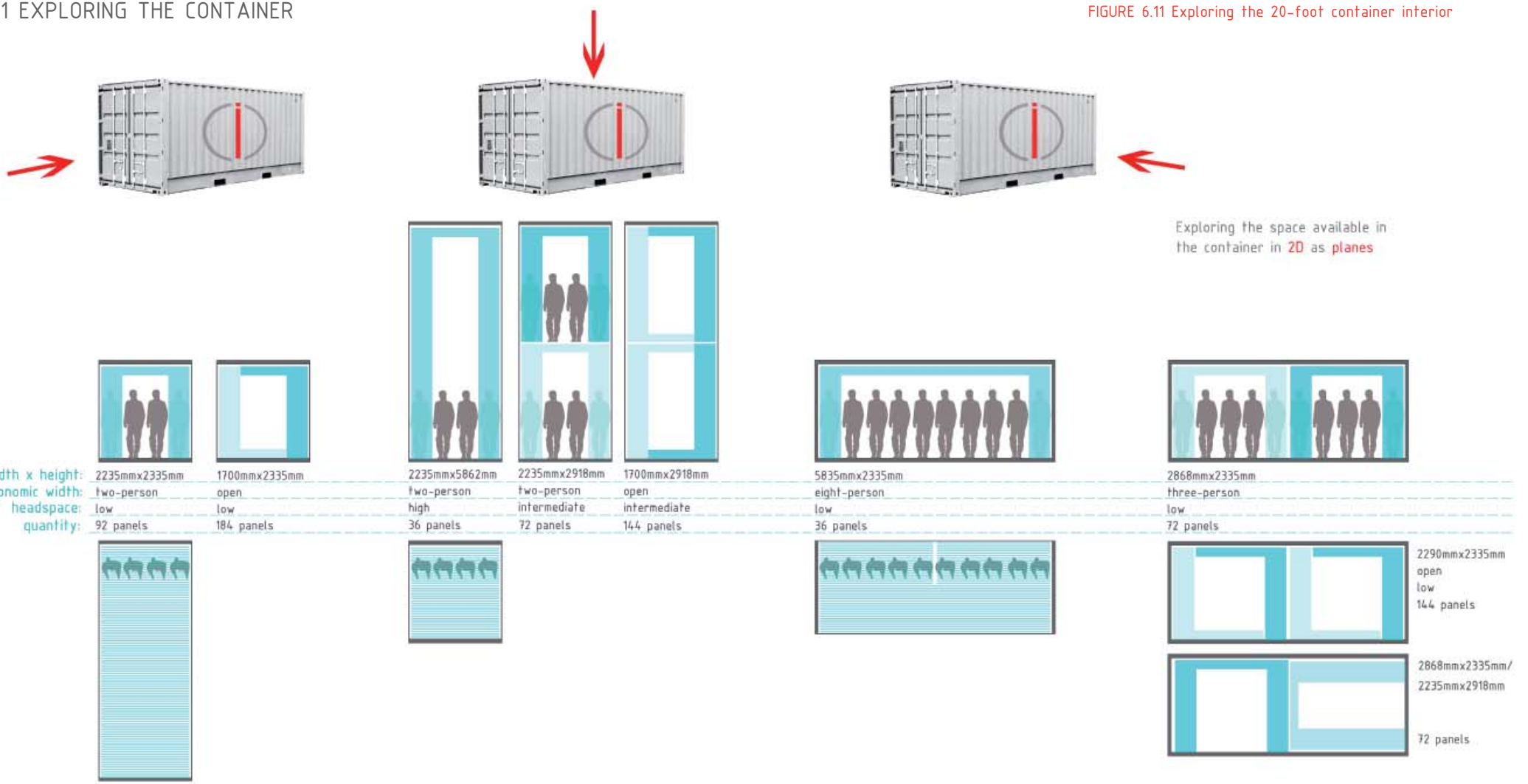
An adjustable installation system consisting of three design assemblies was developed as a reaction to the initial design and to evaluate its relevance within the established design and physical context.

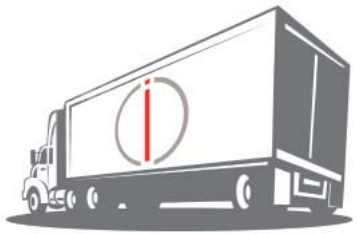
Both the client brief and travelling exhibition typology were established as primary design generators. The premise of narration derived from the client brief (IFI Declaration) has already been discussed in the previous chapter. The transport mode (container) discussed in the context chapter is investigated further.

The possible panel sizes, influenced by the container's internal dimensions, user population and storage, will be applied in the design development.

6.3.1 EXPLORING THE CONTAINER

FIGURE 6.11 Exploring the 20-foot container interior





6.3.2 THE INSTALLATION IN PRIMARY ASSEMBLY FORM

The IFI Interiors Biennale 2013 travelling exhibition consists of planar surfaces that shift to create a three- dimensional installation. During transport the planes explore the available space inside the intermodal container within a two-dimensional capacity. For the duration of the Biennale, the planes investigate and populate the host, shaping a three-dimensional space. The fourth dimension, time, is added when the user is introduced to the exhibition.

In its initial form, the installation represents a basic linear narration.

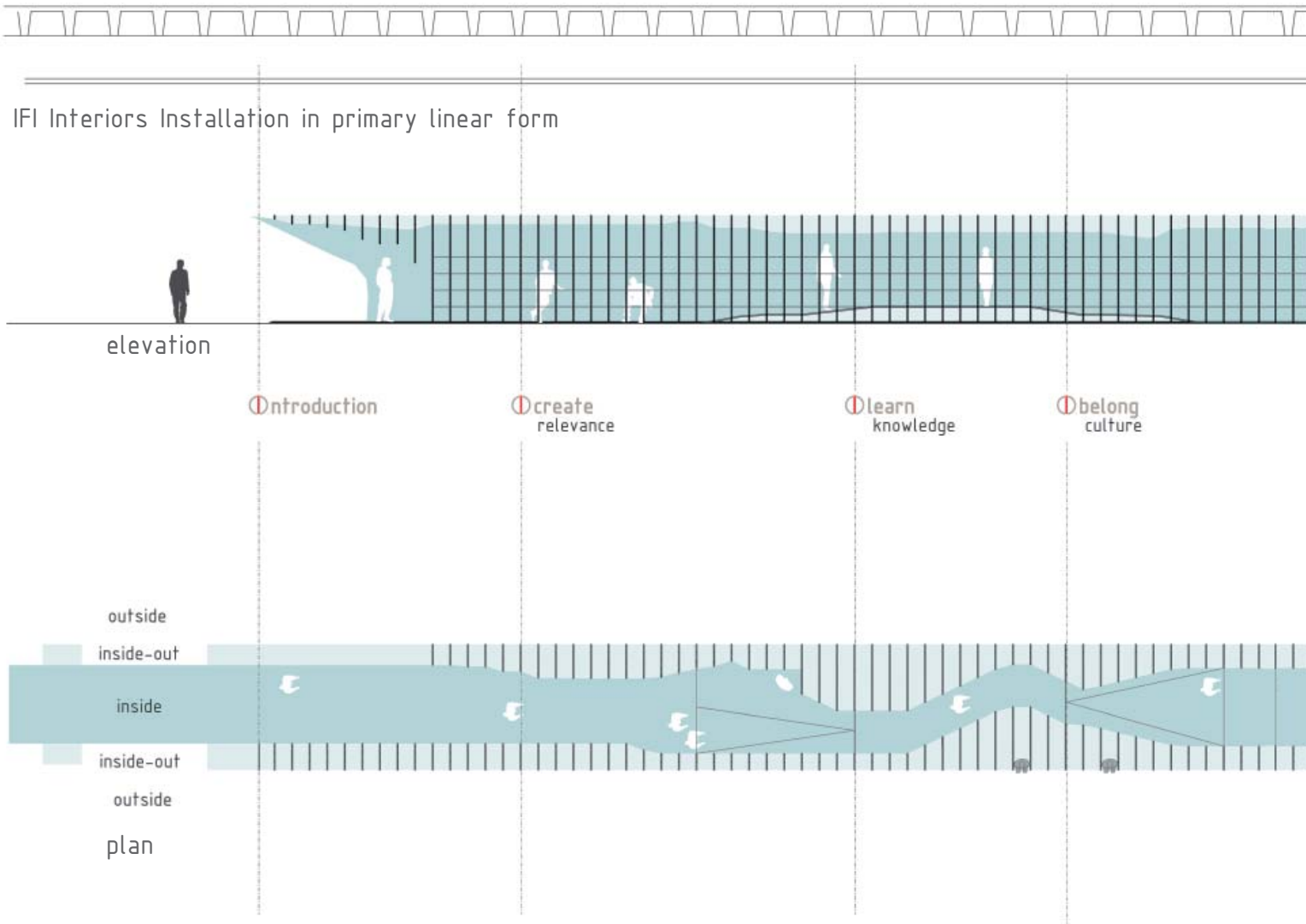
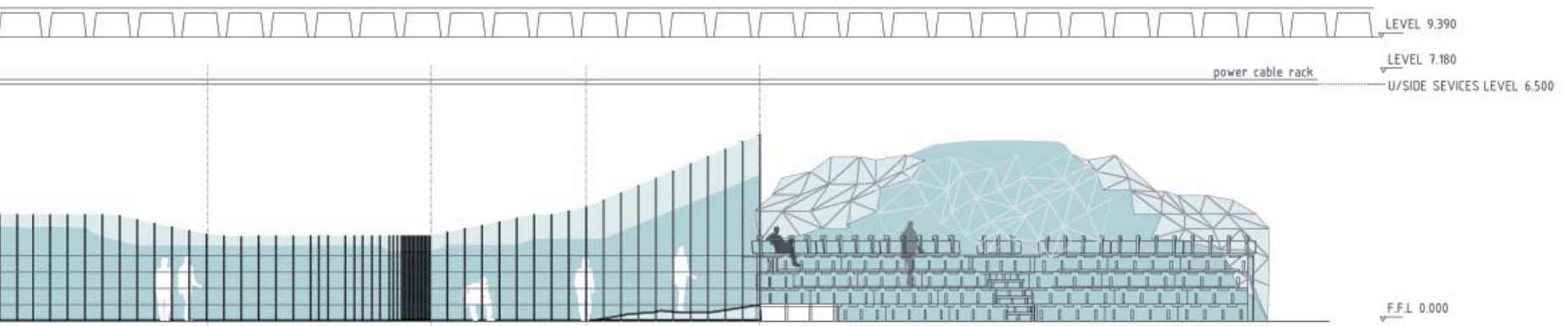
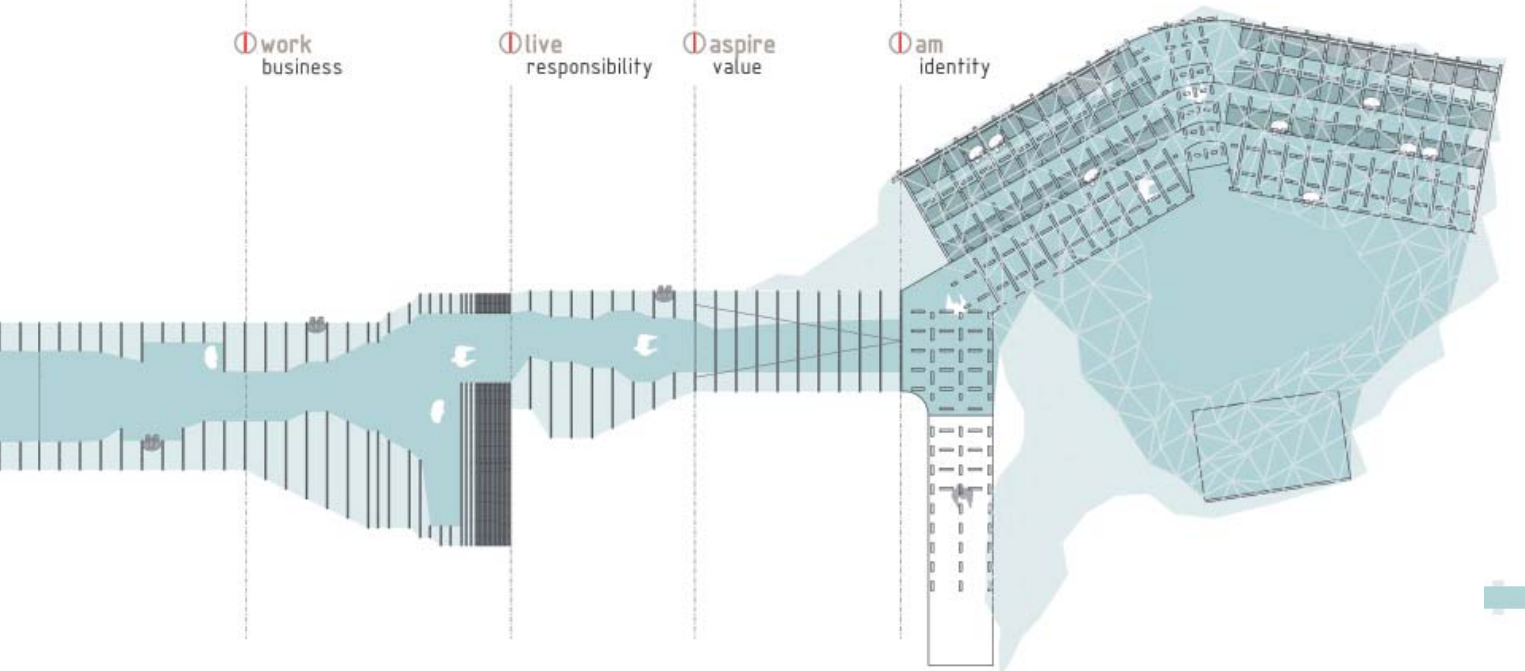
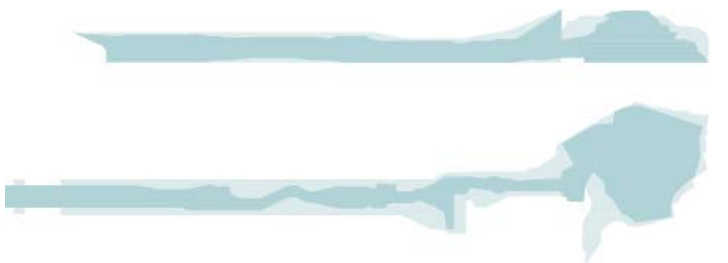


FIGURE 6.12 Final proposal for IFI Interiors Installation in linear form: elevation and plan





"There's the outside of the outside form, the inside of the outside form, and then a space in perpetual tension. Then there's the outside of the inside form and finally, the inside of the inside form. Inside and outside are both coincidental and discontinuous. Fit and misfit." (Moss 1999)



"In the movement from plane to spaces the clash of planes gives rise to body" (Klee 1961)

FIGURE 6.13 IFI Interiors Installation in linear form: 3D image (digital model)

6.3.3 EXHIBITION KIT OF PARTS: THE FIRST DESIGN ASSEMBLY

Six of the seven IFI principles are represented in the IFI Installation's preliminary layout by the first design assembly type: The kit of parts.

The kit of parts is developed based on a 450x450mm module, based on ergonomic increments and exhibition display requirements. This also facilitates adaptability.

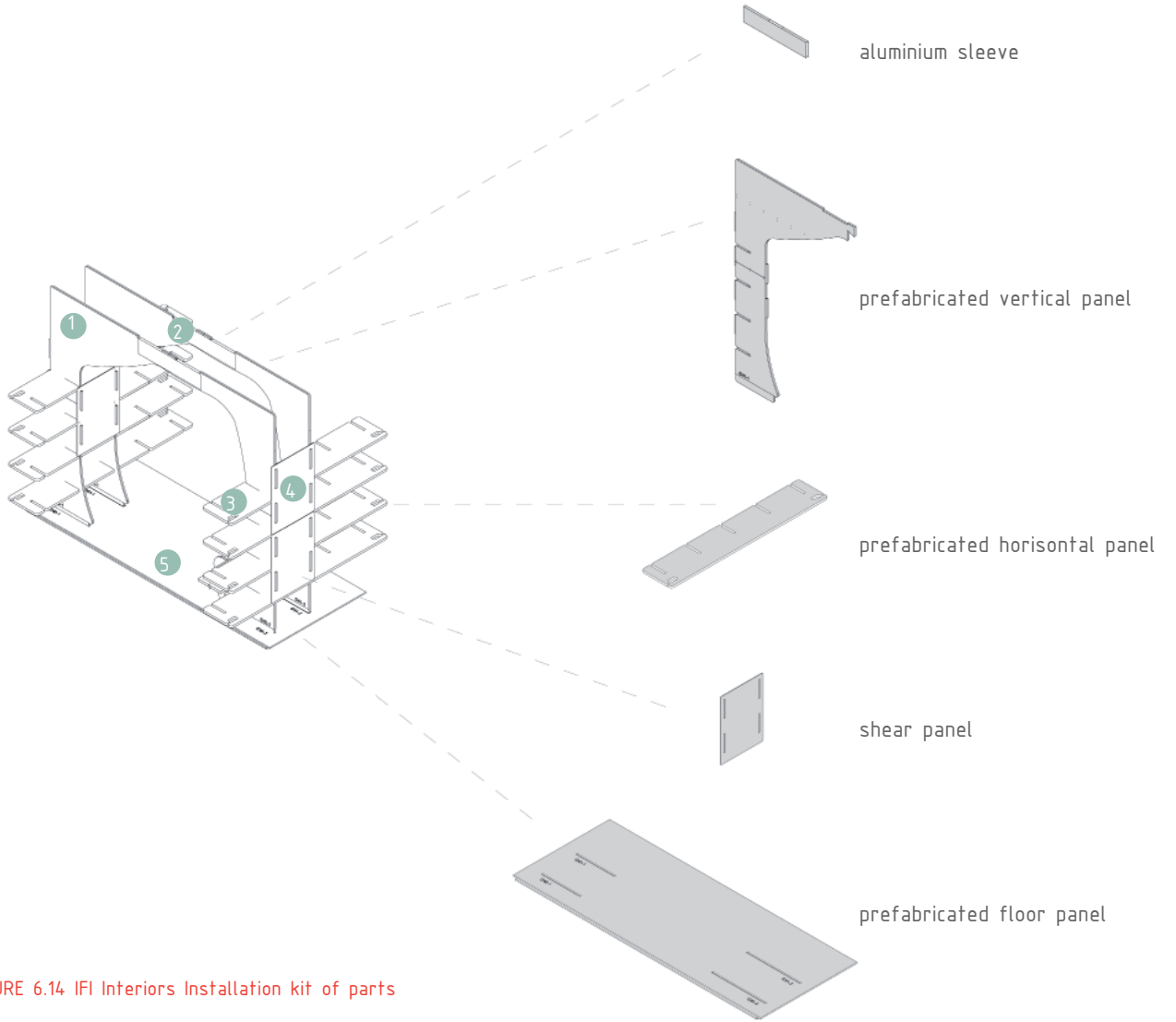


FIGURE 6.14 IFI Interiors Installation kit of parts

1 Prefabricated vertical panel

The internal contour of the vertical panel is profiled to accommodate the expression of the IFI Declaration, while the external profile remains geometric and modular to allow versatility and ease of storage. The vertical panels consist typically of two parts. They are joined with a dovetail joint and slide-over aluminium sleeve. The prefabricated horizontal and shear panels slot into and hook onto the vertical panel. The vertical panel fits into the associated slot in the floor panel.

The external edge of the vertical panel is allocated to a colour, based on the IFI Declaration principle it represents.

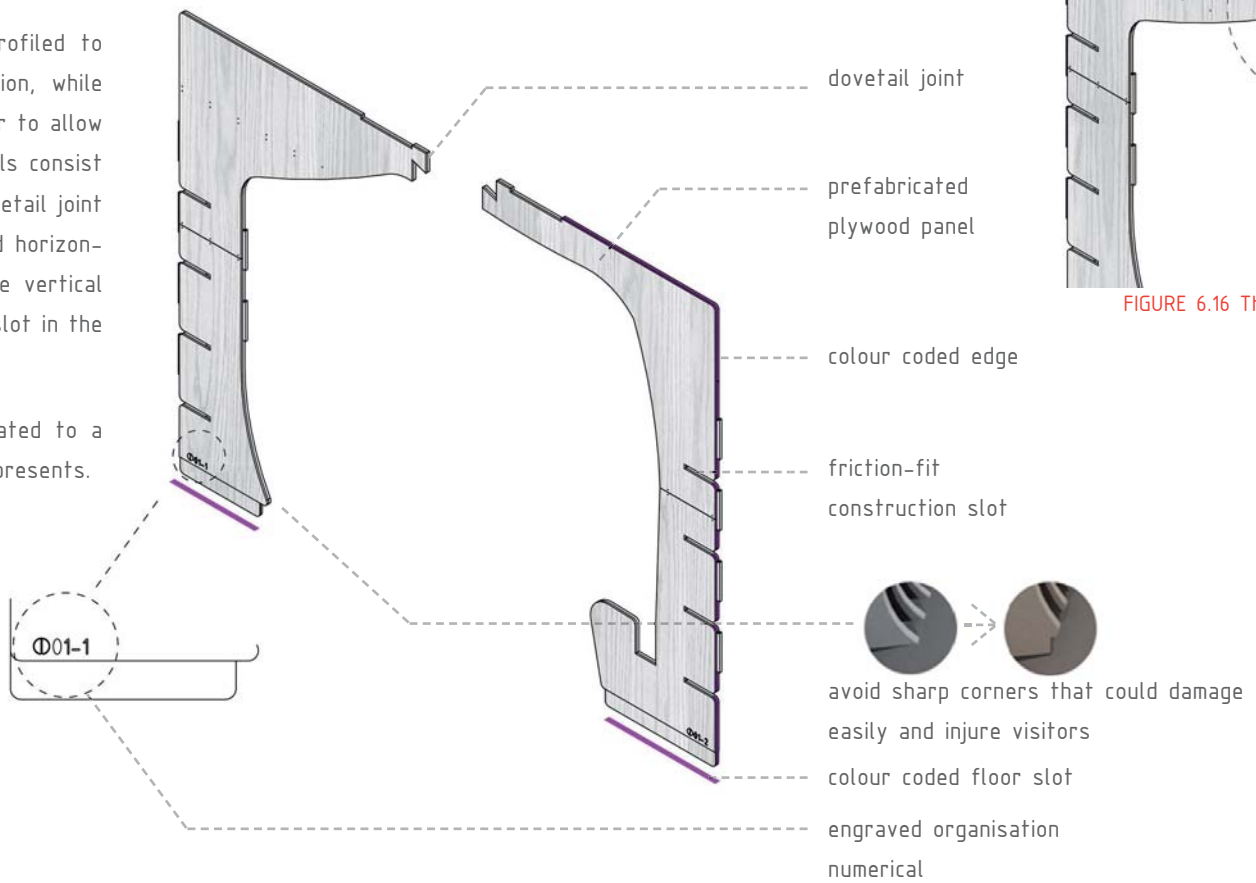


FIGURE 6.15 The kit of parts: vertical panel

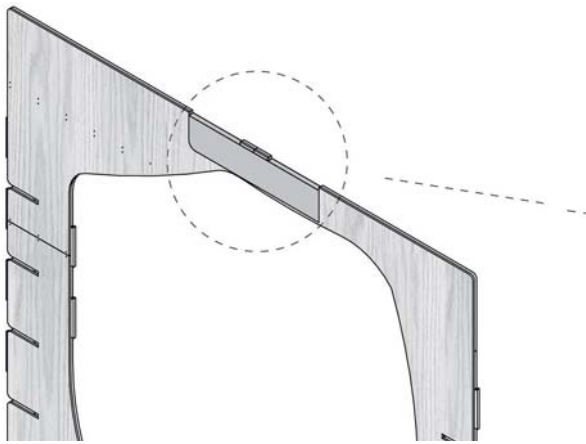
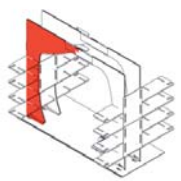
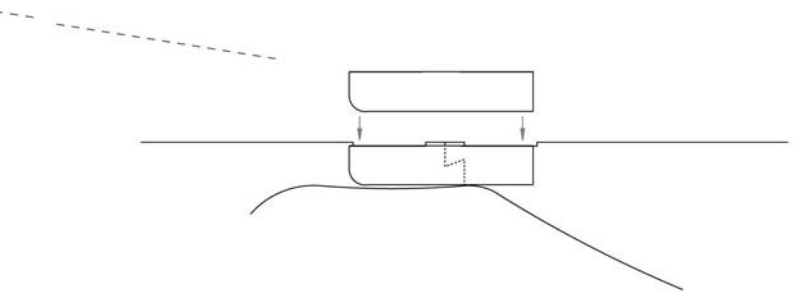


FIGURE 6.16 The kit of parts: aluminium sleeve



2 Aluminium sleeve

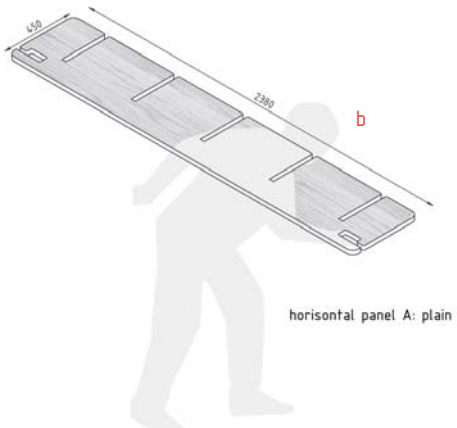


Profiled aluminium sleeve to fit over and secure temporary joint between vertical panels.

3 Prefabricated horisontal panel

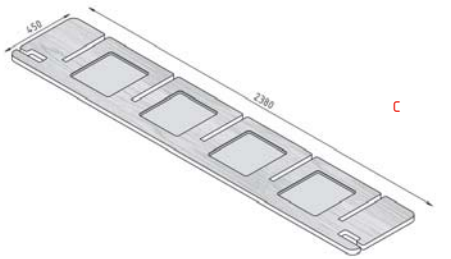
a

The horisontal panel heights are derived from 450mm modules. This allows the horisontal components to accommodate both the anthropometric proportions of the user and the preferred exhibition information band height (Locker 2011:120).



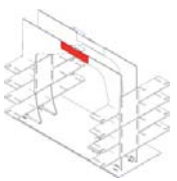
b

horisontal panel A: plain



c

horisontal panel B: with lightbox



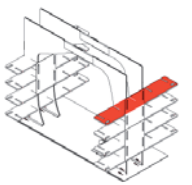


FIGURE 6.17 (a-c) The kit of parts: horisontal panel

The horisontal lightshelf (panel B) could be used as:

downlight for display when light is positioned downward

to create **lightbox** for translucent shear panel with information or graphic

FIGURE 6.18 The kit of parts: horisontal panel facilitating object display

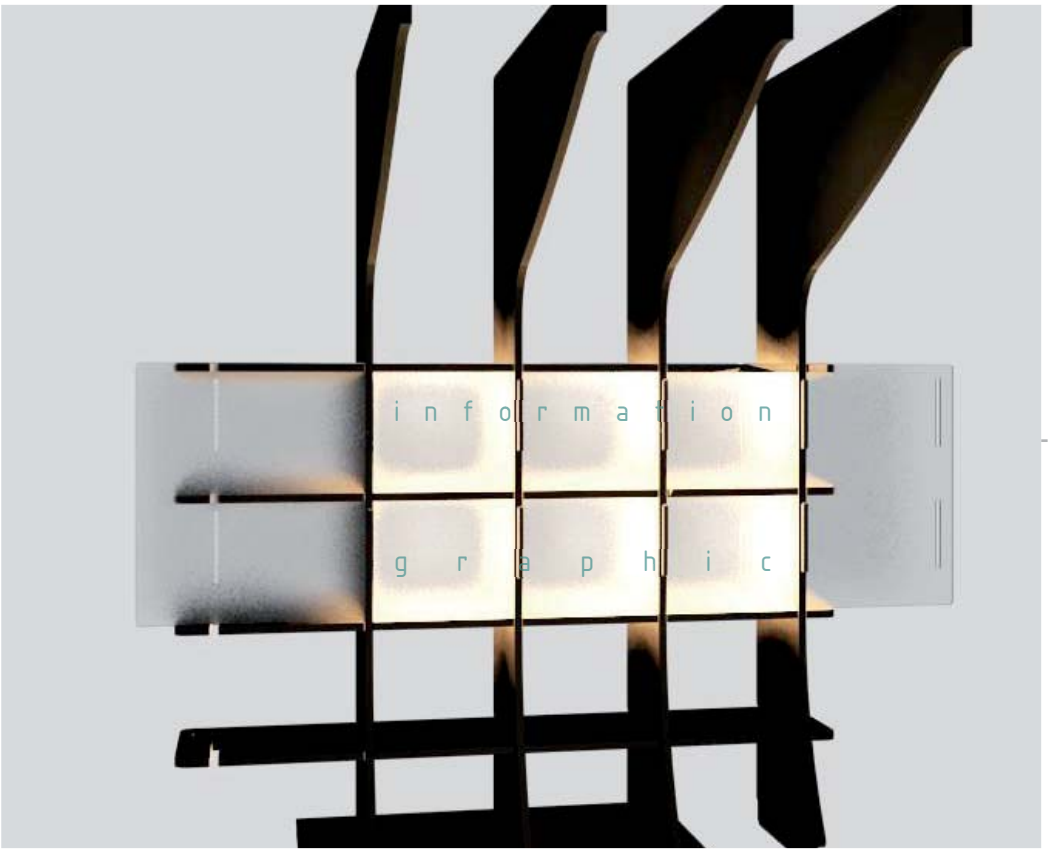


FIGURE 6.19 The kit of parts: horisontal panel facilitating a lightbox

4 Shear panel

The shear panel is the most adaptable component of the IFI Installation. It can be moved or replaced easily based on the curator's needs. These panels enable the installation to communicate with the user through graphic, digital and printed information. The shear panel also manages the permeability (visually and physically) of the route, directing the link the user experiences between inside and out.

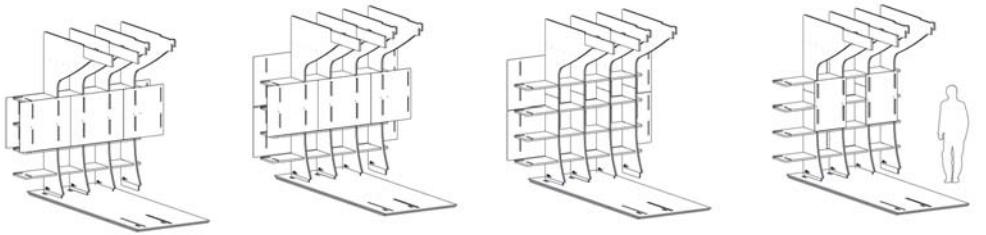
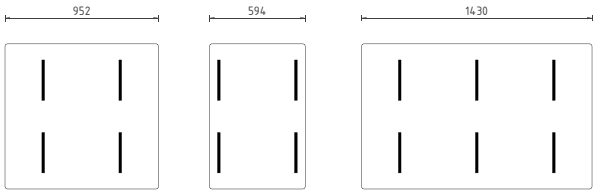


FIGURE 6.21 Shear panel possible configurations

3 standard shear panel templates:

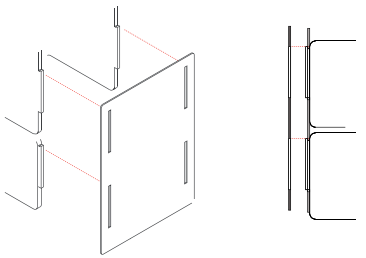


b

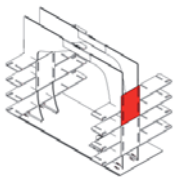
double wide double narrow tripple wide

FIGURE 6.22 Shear panel prototype: Perspex

a



slide over and hook in



c

transparent translucent opaque smooth textured

possible attachments:

digital screen touch screen graphic display system eventscent

FIGURE 6.20 (a-c) The kit of parts: shear panel

FIGURE 6.23 Shear panel with graphic

5 Prefabricated floor panel

The prefabricated floor panel allocates the position for the vertical panels.

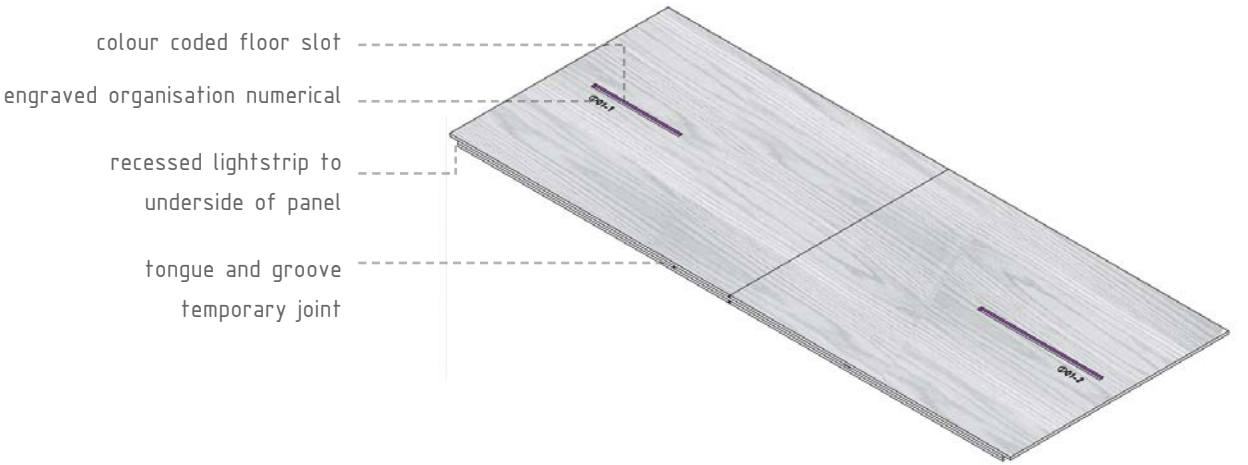
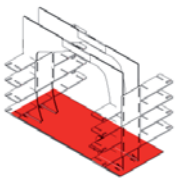


FIGURE 6.24 Kit of parts: floor panel



6.3.4 KIT OF PARTS PROTOTYPING

Process:

The previous chapter has already defined CNC cutting and established its relevance to the IFI Installations fabrication process. CNC laser cutting was used to cut the prototype components whilst CNC routing will be used to cut the final installation components.

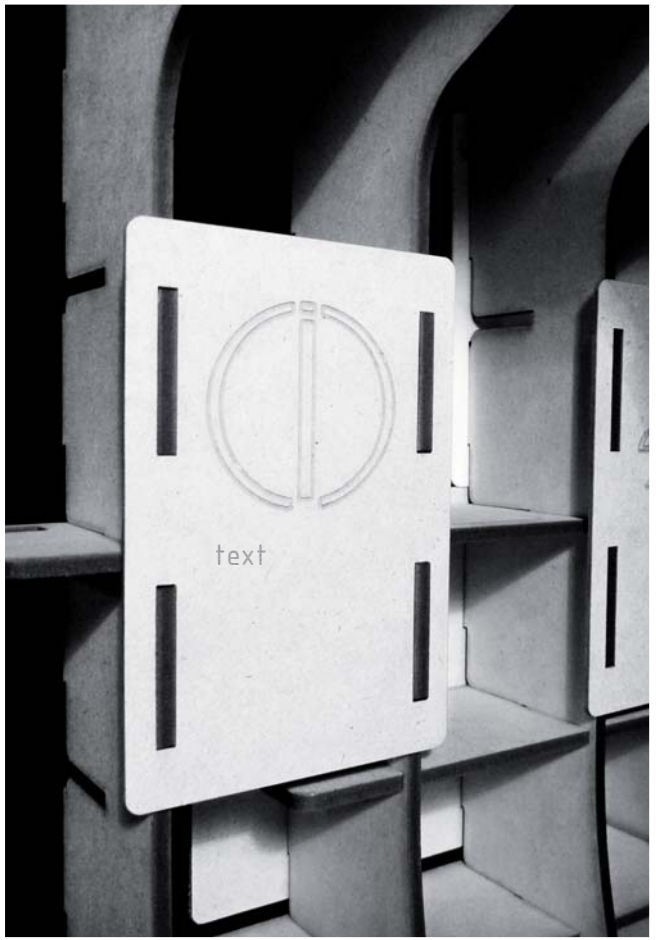
A correlation between CNC routing (final product) and CNC laser cutting (prototype) is investigated to generate a realistic prototype.

The drawings prepared for both CNC cutting methods are mostly similar, differing only in the line colours allocated for cutting or engraving. The different CNC machines' 'bed sizes' vary, as well as the maximum material thickness it is able to cut. It was found that that CNC laser cutters generally have a smaller bed size than CNC router machines. Commercially available lasercutting facilities in Pretoria, South Africa, usually cut timber panel products of up to 4mm, where an industrial CNC router could handle a 300mm thick panel product.

To ensure the success of the friction fit slots in both the installation and prototype, a relation between the thickness of the panel product used in the final construction (28mm Plywood) and the prototyping material (3mm MDF) was used to determine the scale of the model.

The CNC input drawings prepared for the IFI installation cutting will be added in the technical chapter.

FIGURE 6.25 Kit of parts prototype: engraved shear panel



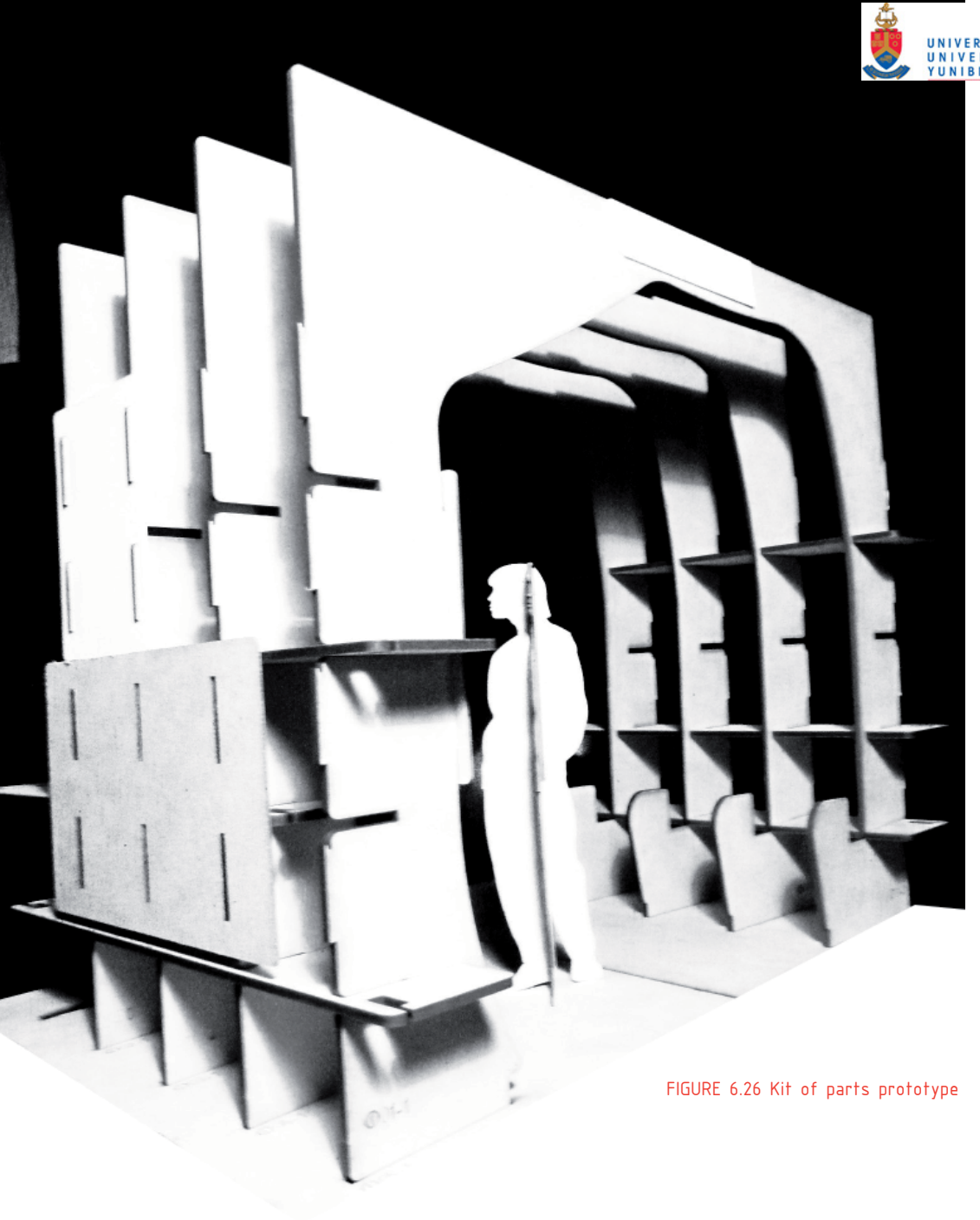


FIGURE 6.26 Kit of parts prototype

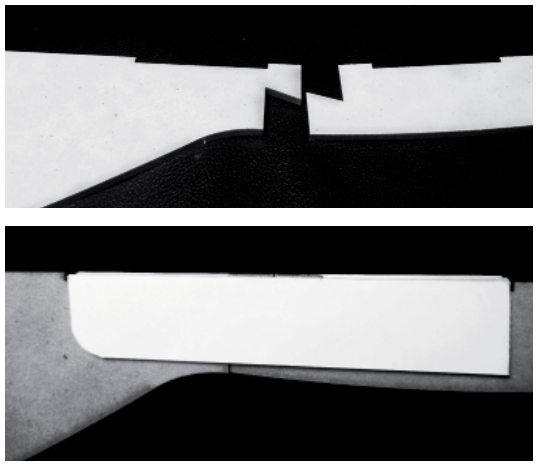


FIGURE 6.27 Dovetail joint

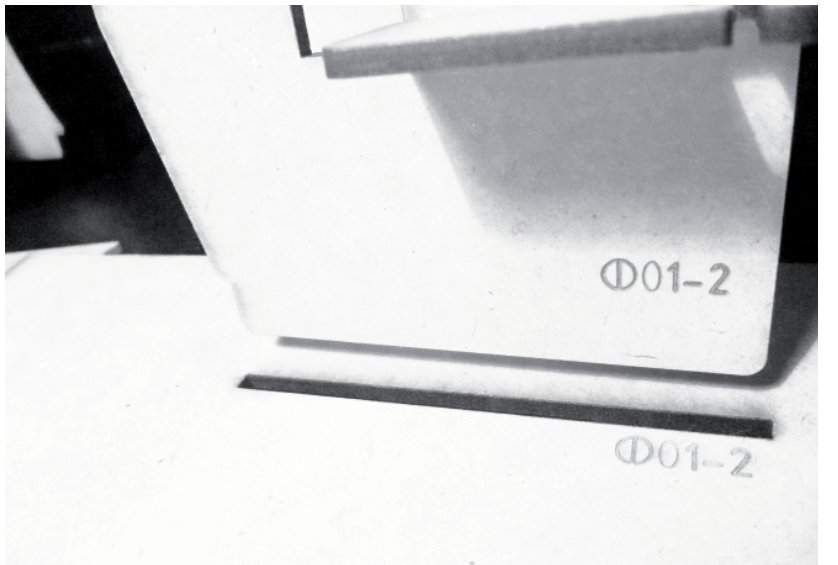


FIGURE 6.28 Numbered floor panel construction slot with corresponding vertical panel

Conclusion:

The kit of parts prototype established the exact tolerance associated with CNC cutting. The initial joint slots were detailed to be the exact width of the panel thickness, which resulted in the friction fit being too tight. The construction slot should allow for a slightly higher tolerance (+0.05mm when prototyping with 3mm MDF).

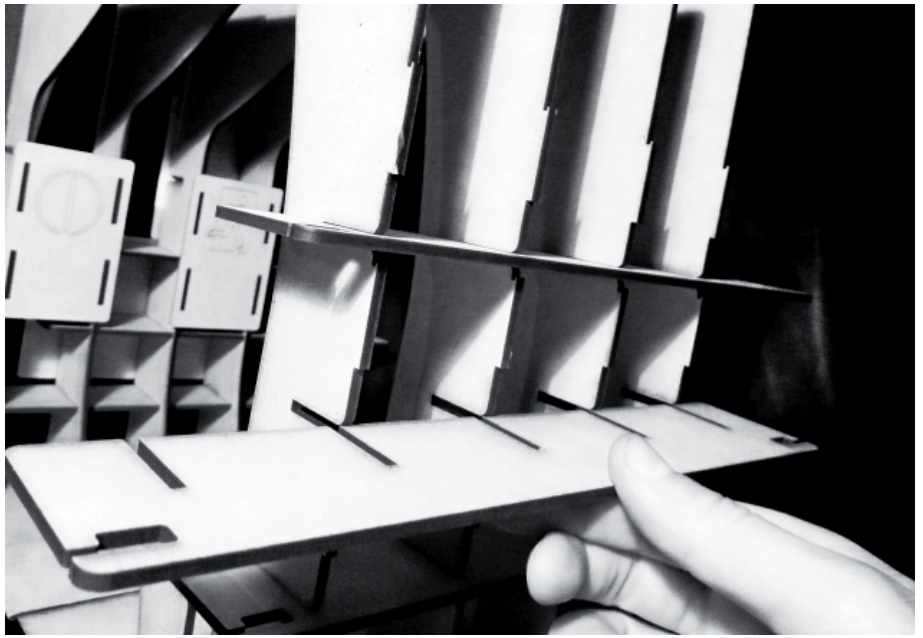


FIGURE 6.29 Horisontal and vertical panel assembly

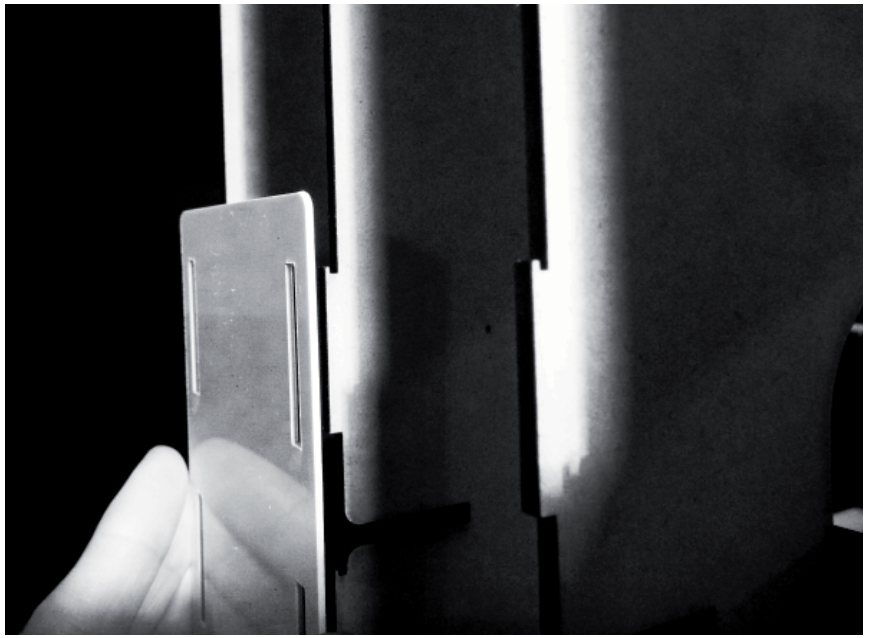


FIGURE 6.30 Shear panel assembly

6.3.5 APPLYING ORGANISTATION PRINCIPLES

The kit of parts is organised according to the numeric and colour-coded organisation of the vertical panels.

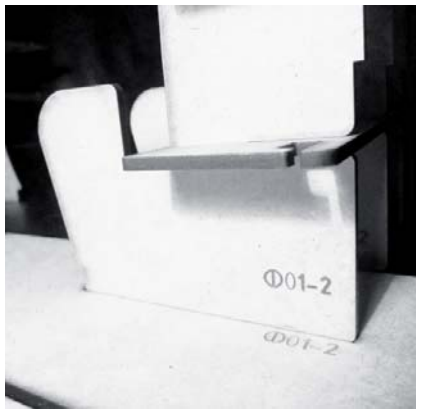


FIGURE 6.31 Vertical and floor panel numeric organisation

Pantone colours translated to Plascon colours for paint application:

Pantone	Plascon
Pantone 19-1764	R3-B1-1 Garnet Shadow
Pantone 18-3027	P5-B1-3 Sparkling Plum
Pantone 14-1307	03-E2-2 Camels Hump
Pantone 16-5418	B1-B2-1 Mystic Fog
Pantone 15-1050	07-B1-2 Taste of Summer
Pantone 18-0538	Y2-D1-2 Baby Sprout
Pantone 13-0632	Y4-B2-1 Yellow Mystery

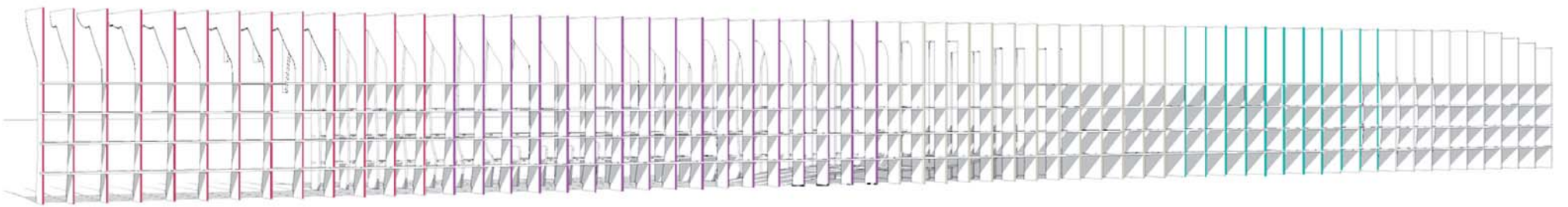


FIGURE 6.32 Colour coded external edges of vertical panels

6.3.6 Intermediate

:THE SECOND DESIGN ASSEMBLY

To allow the installation to react to the found space, a transitional element is introduced. The intermediate section is the second design assembly. This transitional segment permits adaptation without compromising the integrity of the seven core spaces.

These in-between elements allow 90 and 45 degree bends, as well as straight lengthening sections.

The intermediate segments also create a spatial and visual threshold between the principal spaces and pause areas to reduce museum fatigue. The components are interchangeable in order and orientation.

Intermediate sections allow the IFI installation to adapt to the found space. As the installation explores the host, external spaces are created within the space, strengthening the inside out and imprint theories.

THE 90 DEG BEND

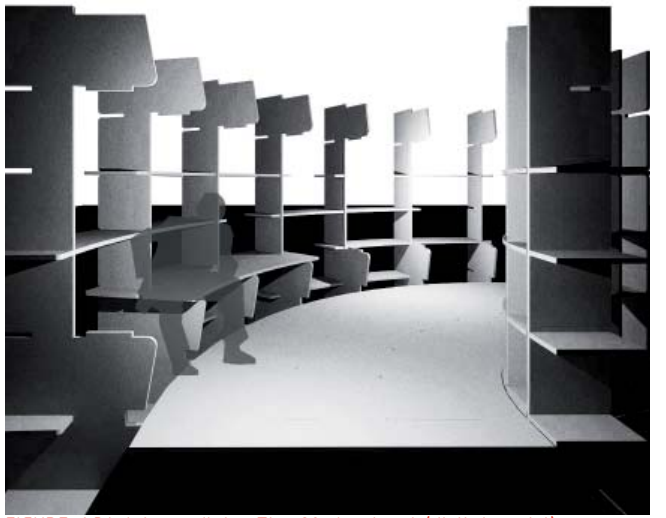


FIGURE 6.34 Intermediate: The 90 deg bend (digital model)

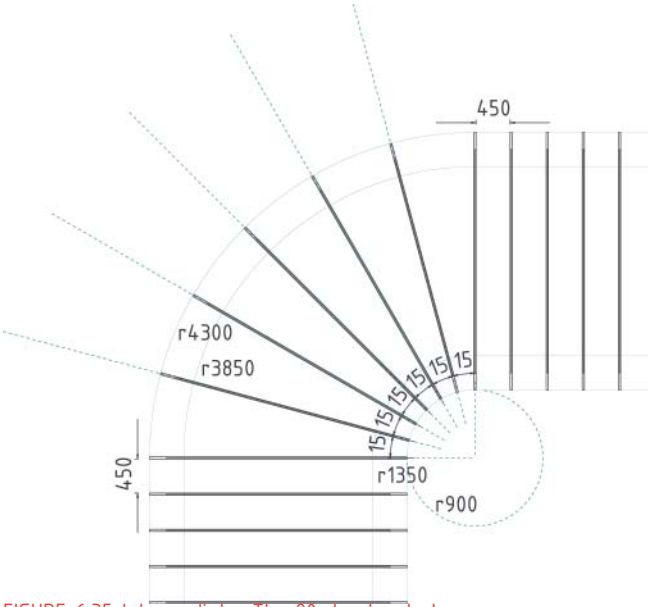


FIGURE 6.35 Intermediate: The 90 deg bend plan

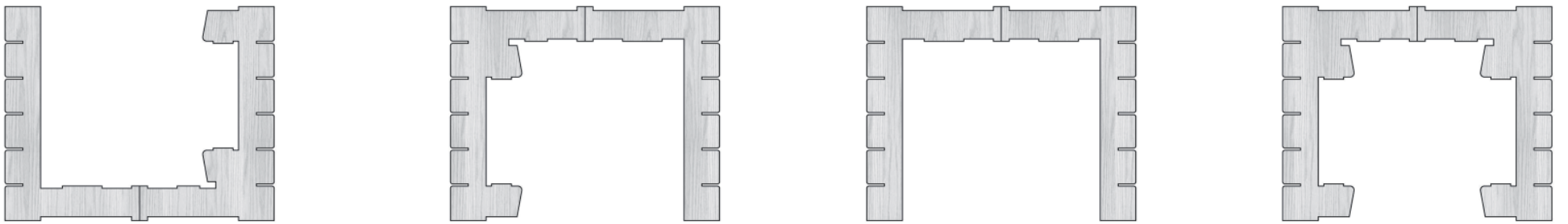


FIGURE 6.33 Intermediate: vertical panel assembly options (interchangeable)

THE 45 DEG BEND

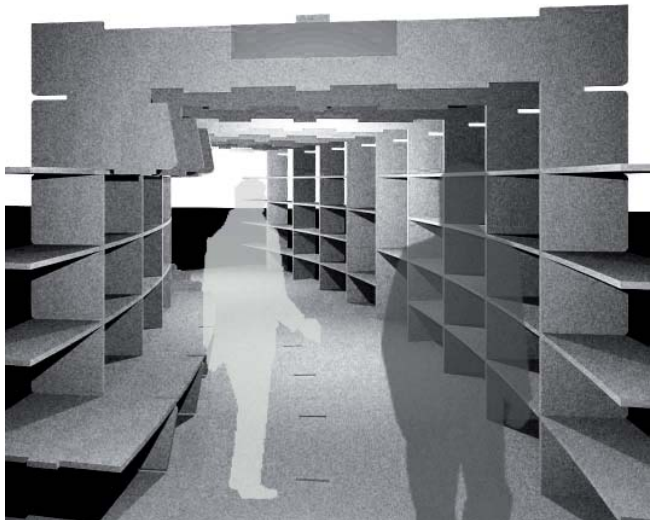


FIGURE 6.36 Intermediate: The 45 deg bend (digital model)

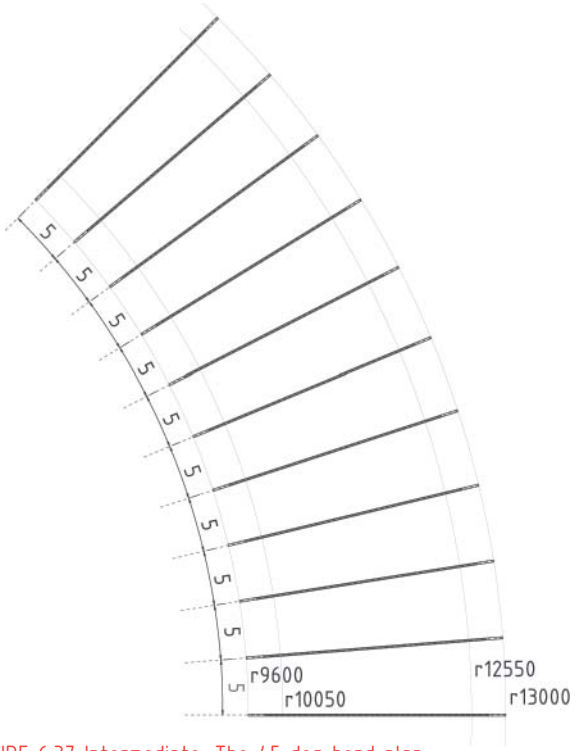


FIGURE 6.37 Intermediate: The 45 deg bend plan

THE STRAIGHT

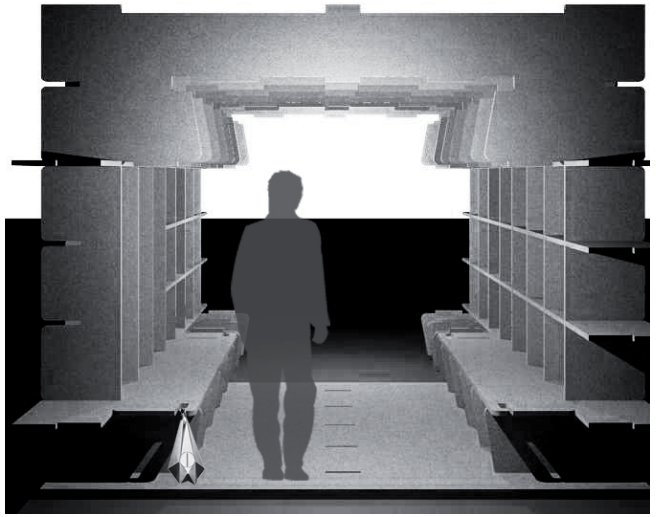


FIGURE 6.38 Intermediate: The Straight (digital model)

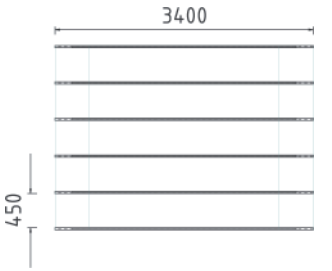
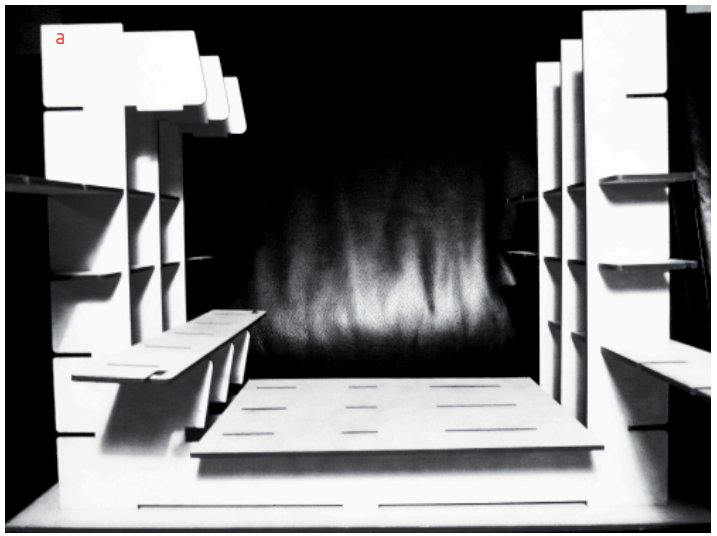
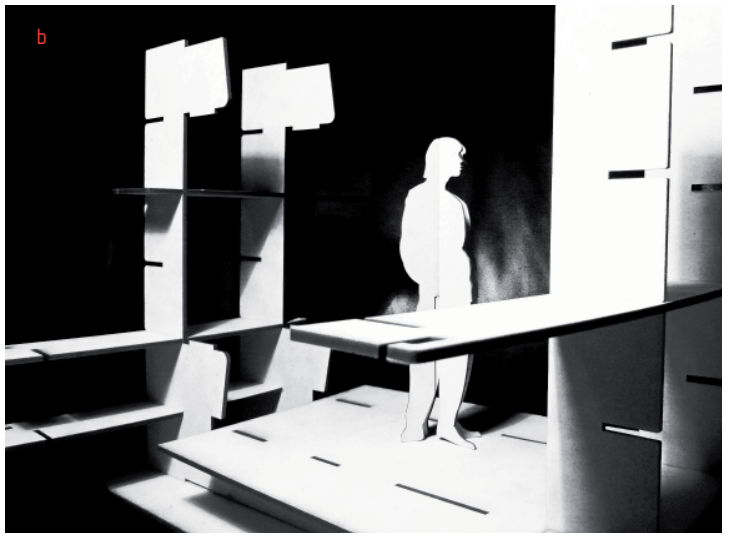


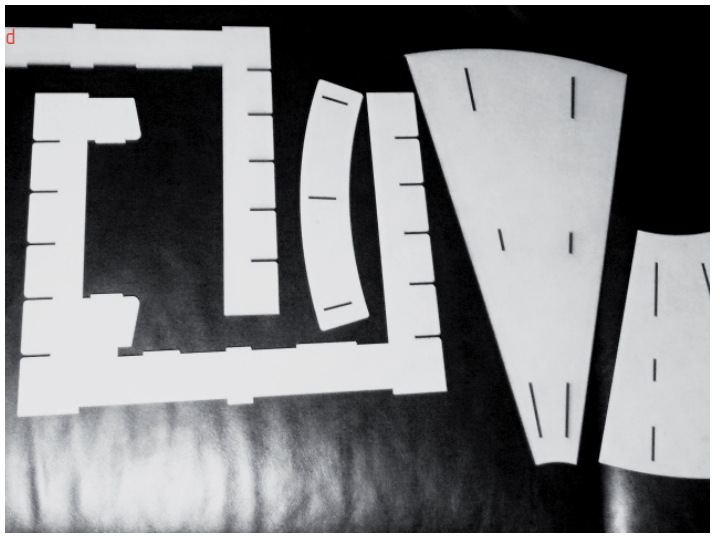
FIGURE 6.39 Intermediate: The Straight plan

6.3.7 Intermediate PROTOTYPING

FIGURE 6.40 (a-d) Intermediate prototypes







The intermediate segment is introduced between the principal spaces.

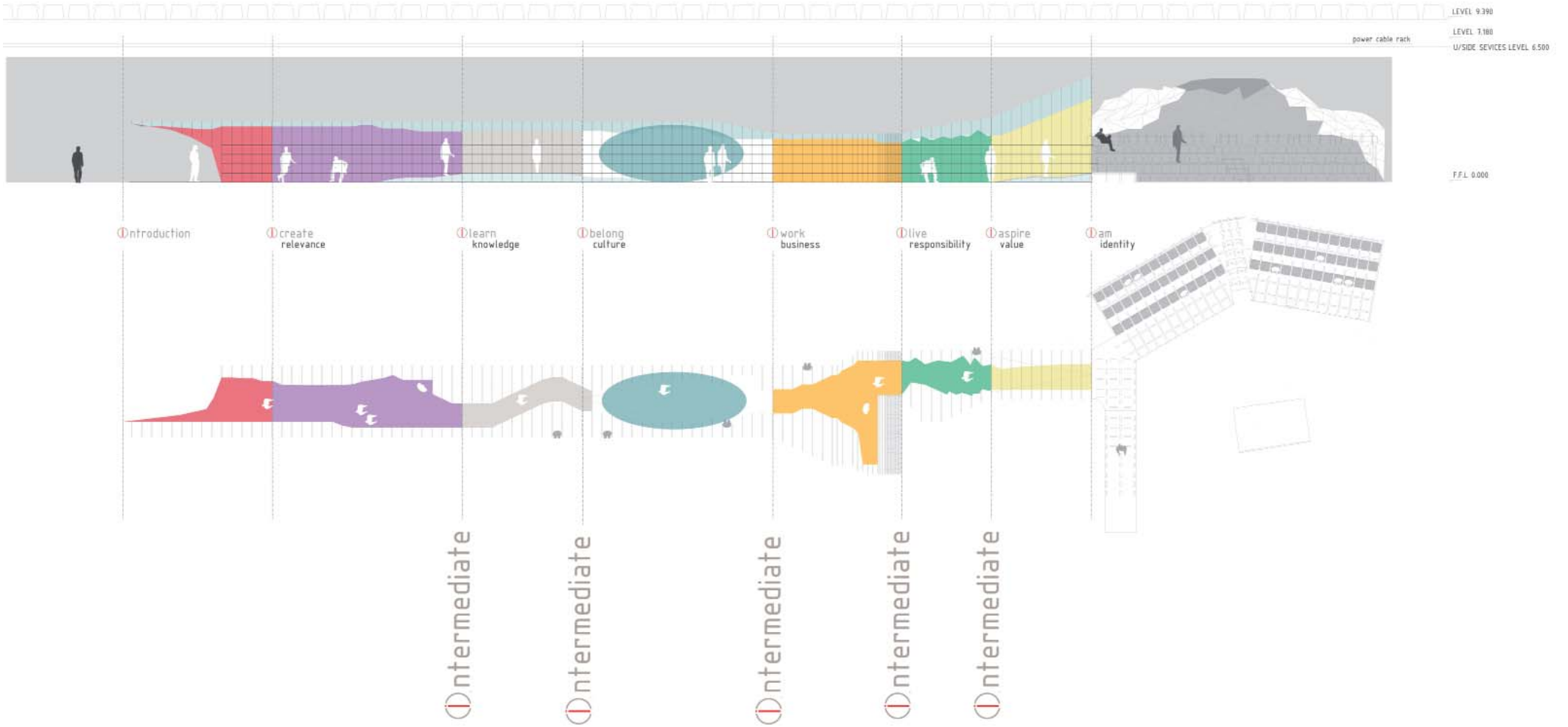
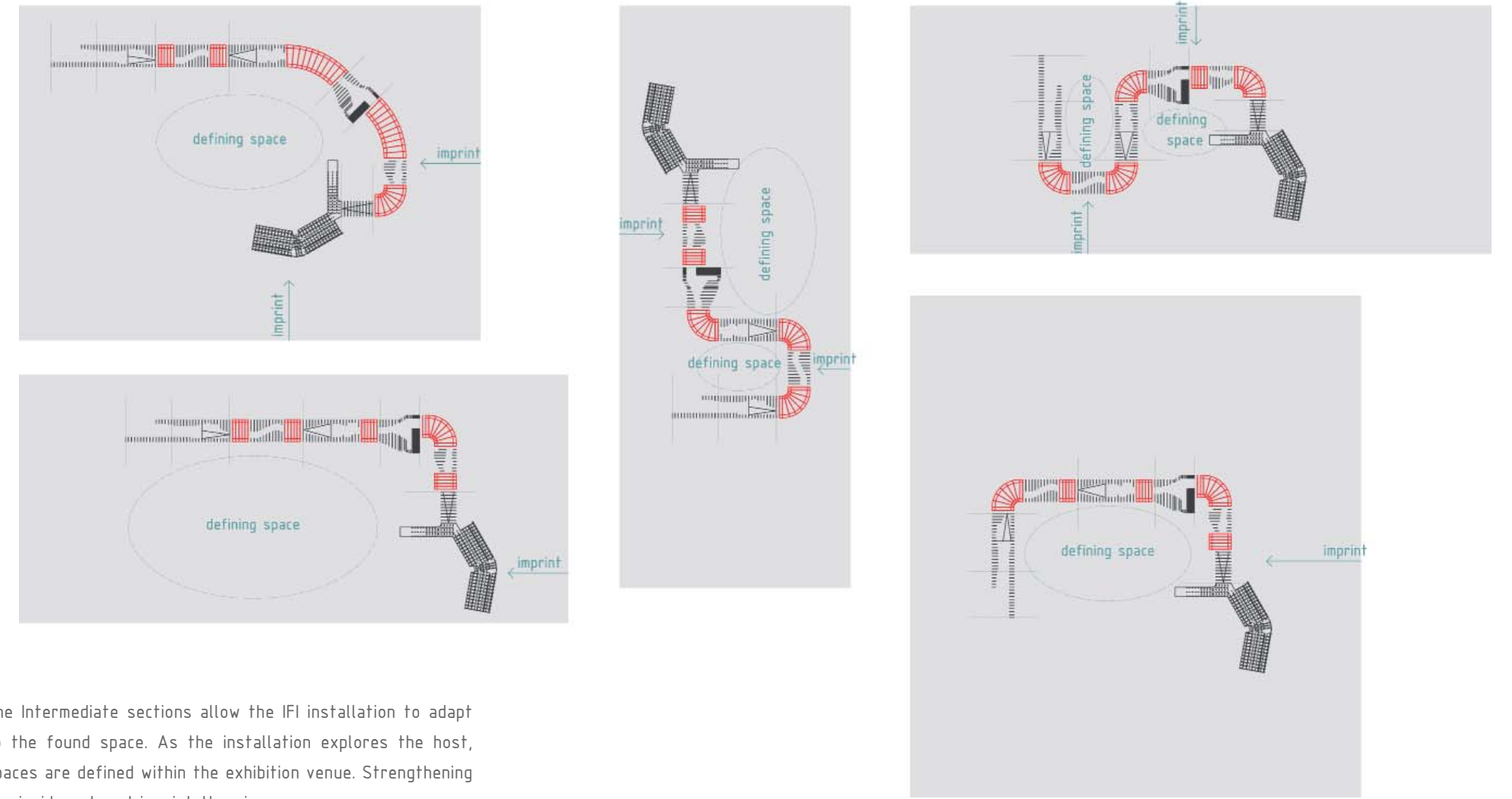


FIGURE 6.41 Intermediate segment positions within IFI Installation (linear with principle colours)



The Intermediate sections allow the IFI installation to adapt to the found space. As the installation explores the host, spaces are defined within the exhibition venue. Strengthening the inside out and imprint theories.

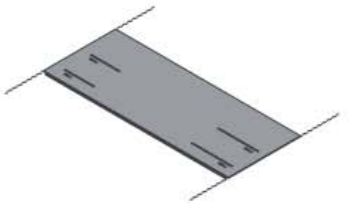
FIGURE 6.42 IFI Installation with intermediate sections: possible site reactions

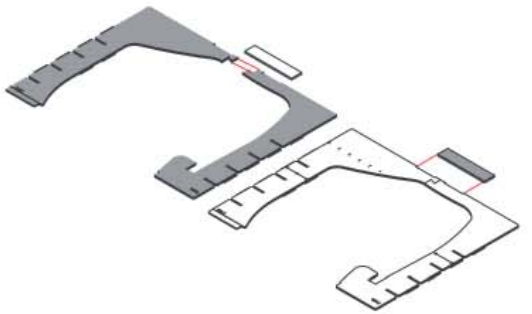
6.3.7 ASSEMBLY PROCESS

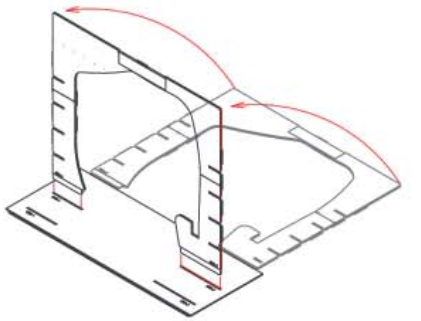
IDEAL ASSEMBLY TEAM: 4 PEOPLE

TOOLS REQUIRED: RUBBER MALLET

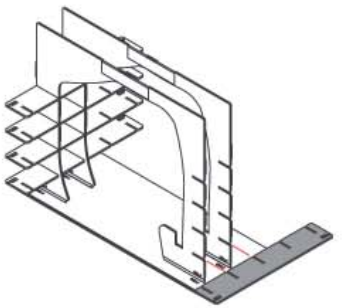
possible installation layouts for various exhibition venues



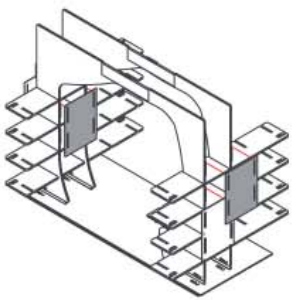




1. determine preferred layout for IFI installation
2. lay floor panels according to planned layout
3. link corresponding panels
4. slot linked panels into corresponding floor slots



5 slot horisontal panels in place



6 hook shear panels in place

input voltage switch

115V (110-130V) or 230V (220-230V) is selected by switch BEFORE power on. Check input voltage to avoid damage.

7
-determine host country supplied voltage
-select the appropriate voltage on input voltage alternator and switch to correct voltage
-connect to electrical supply
-switch power supply on at distribution board

6.3.8 THE CONTEMPLATION PAVILION: THE THIRD DESIGN ASSEMBLY

The i-am segment or contemplation pavilion is the culmination of the IFI Installation. The pavilion is also designed for (dis)assembly consisting of CNC routed Plywood components. The 450mm design module, based on ergonomic and exhibition principles, is used throughout the design. The parts are numbered to ensure success of assembly and storage when travelling. The structural stability of the friction fit construction is established by prototyping.

The Pavilion components:

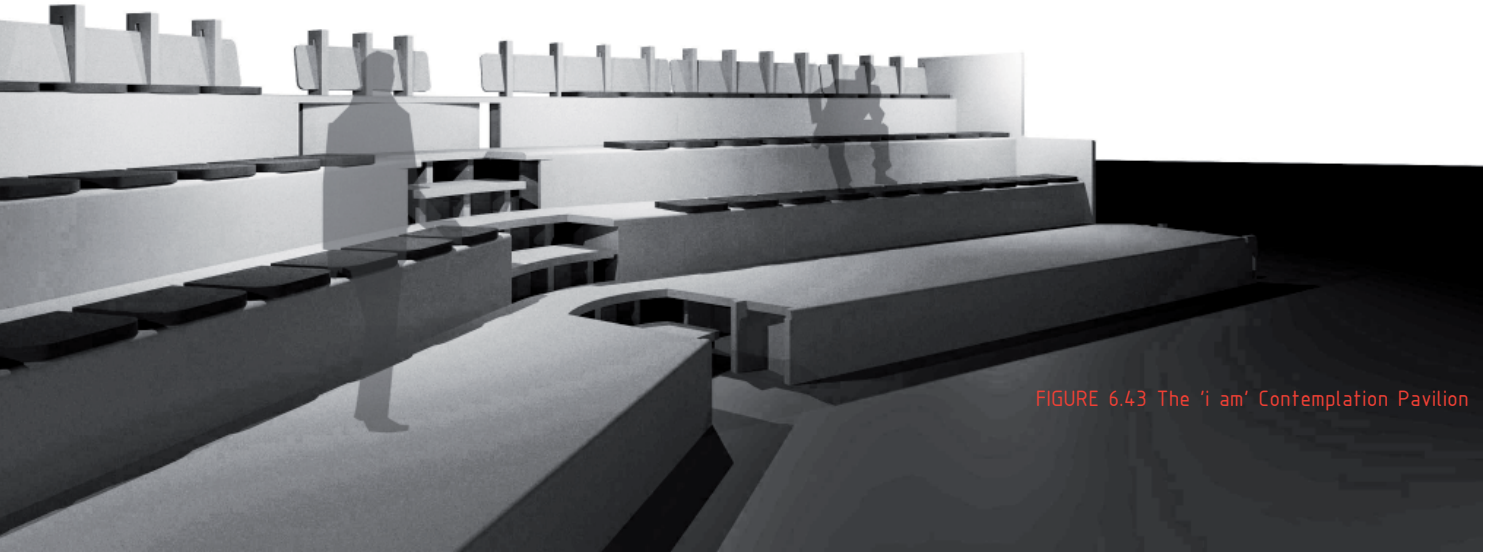


FIGURE 6.43 The 'i am' Contemplation Pavilion

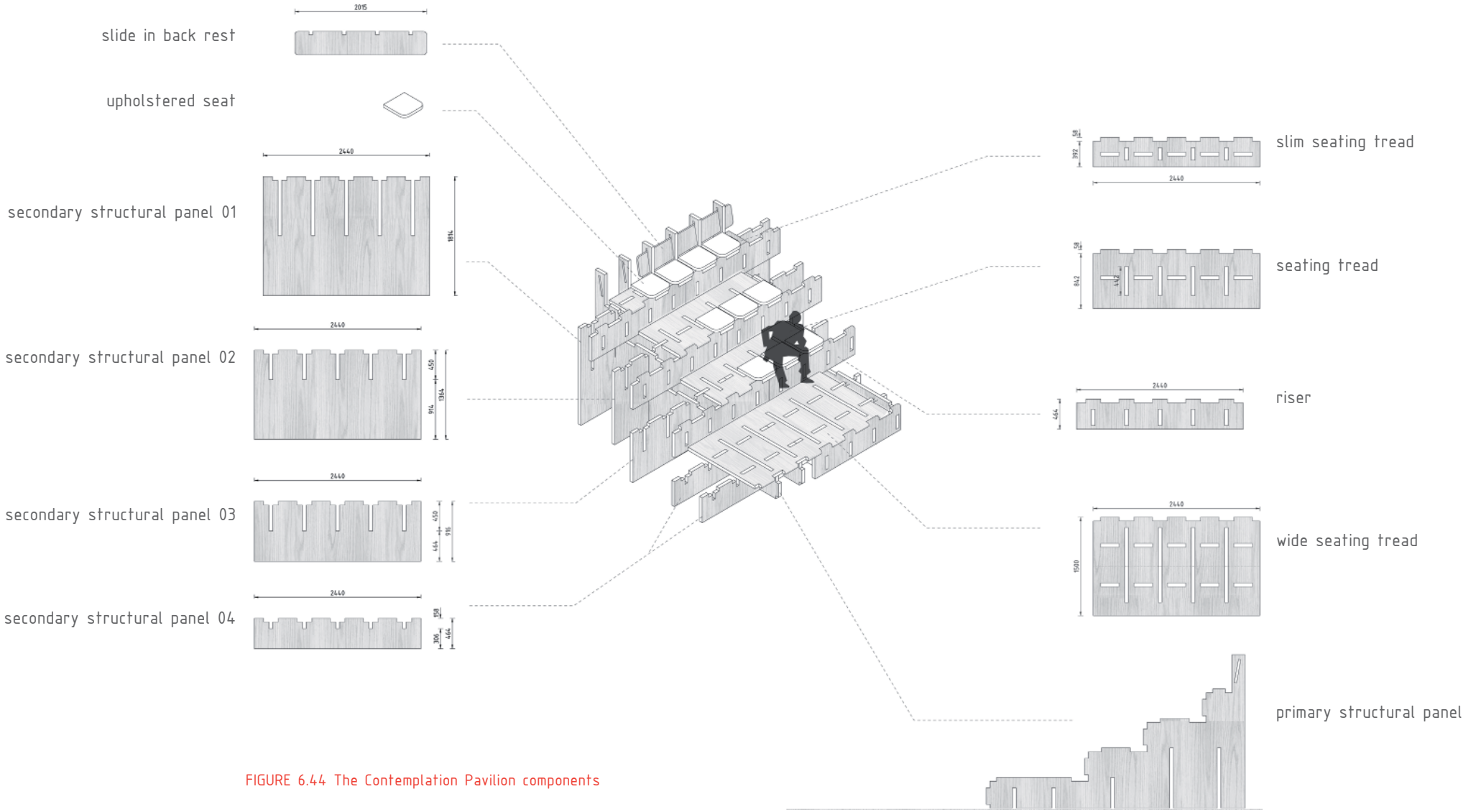


FIGURE 6.44 The Contemplation Pavilion components

THE PAVILION ASSEMBLY

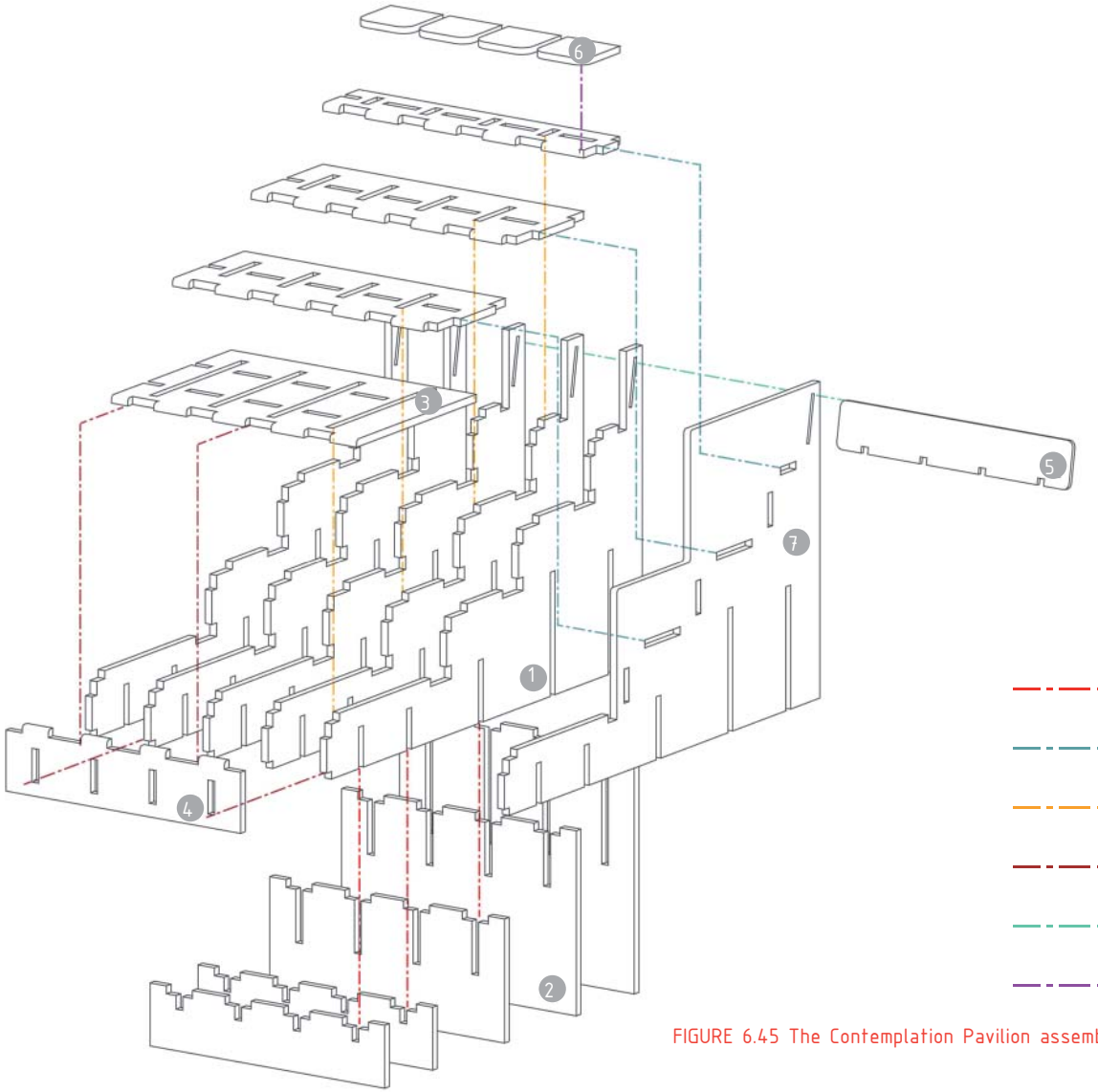


FIGURE 6.45 The Contemplation Pavilion assembly

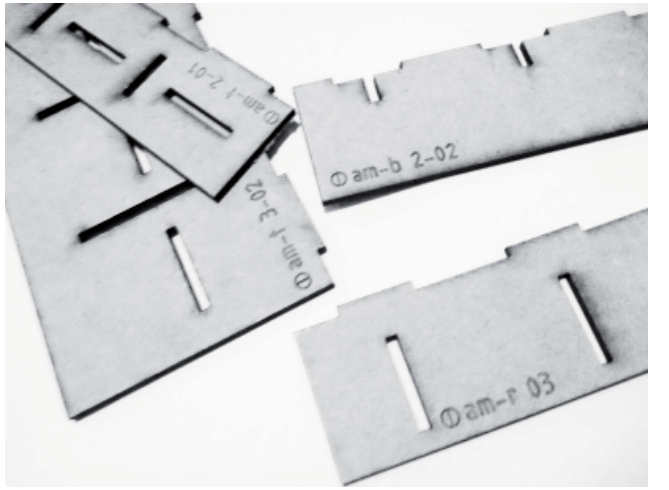


FIGURE 6.46 The Contemplation Pavilion prototype components

step 01: slot primary (1) and secondary (2) structural panels together

step 02: Side component slotted (7) into primary structural panel (1)

step 03: fit tread panel (3) onto structural components (1&2)

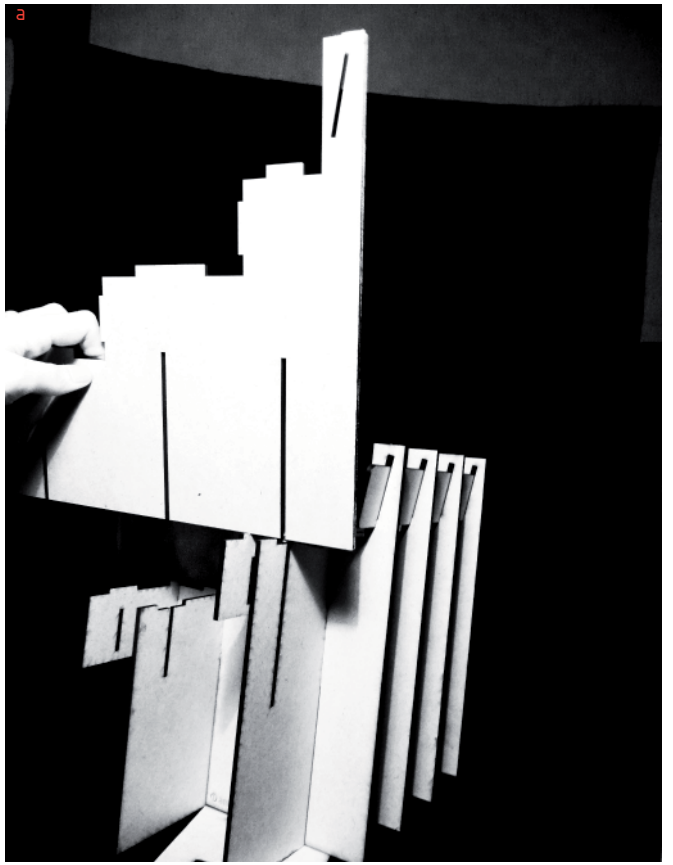
step 04: fit riser (4) onto tread (3) and support panel (2)

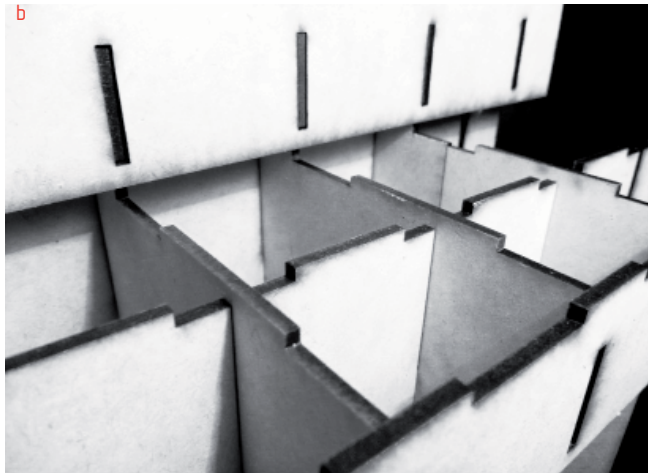
step 05: slide and slot backrest (5) into primary structure (1)

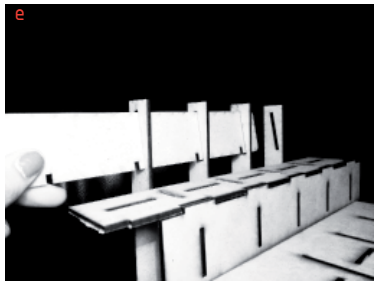
step 06: place seating (6) on tread (3) – secured with velcro

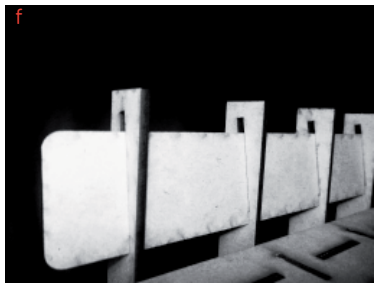
6.3.9 THE CONTEMPLATION PAVILION PROTOTYPE

FIGURE 6.47 (a-f) The Contemplation Pavilion prototype assembly









Conclusion

When the joint tolerance was increased slightly, the prototype assembly relying on resistance joints between prefabricated components, resulted in a sound structural composition.

FIGURE 6.48 The Contemplation Pavilion prototype

6.4 THE IFI INTERIORS BIENNALE 2013 IN THE PROTO-SITE

Proposed IFI Interiors Biennale 2013 layout in Exhibition 1, Sandton Convention Centre:

The site-specific footprint of the IFI Installation within the SCC, defines the event specific layout for the IFI Interiors Biennale 2013, demarcating the position of the supporting exhibition facilities.

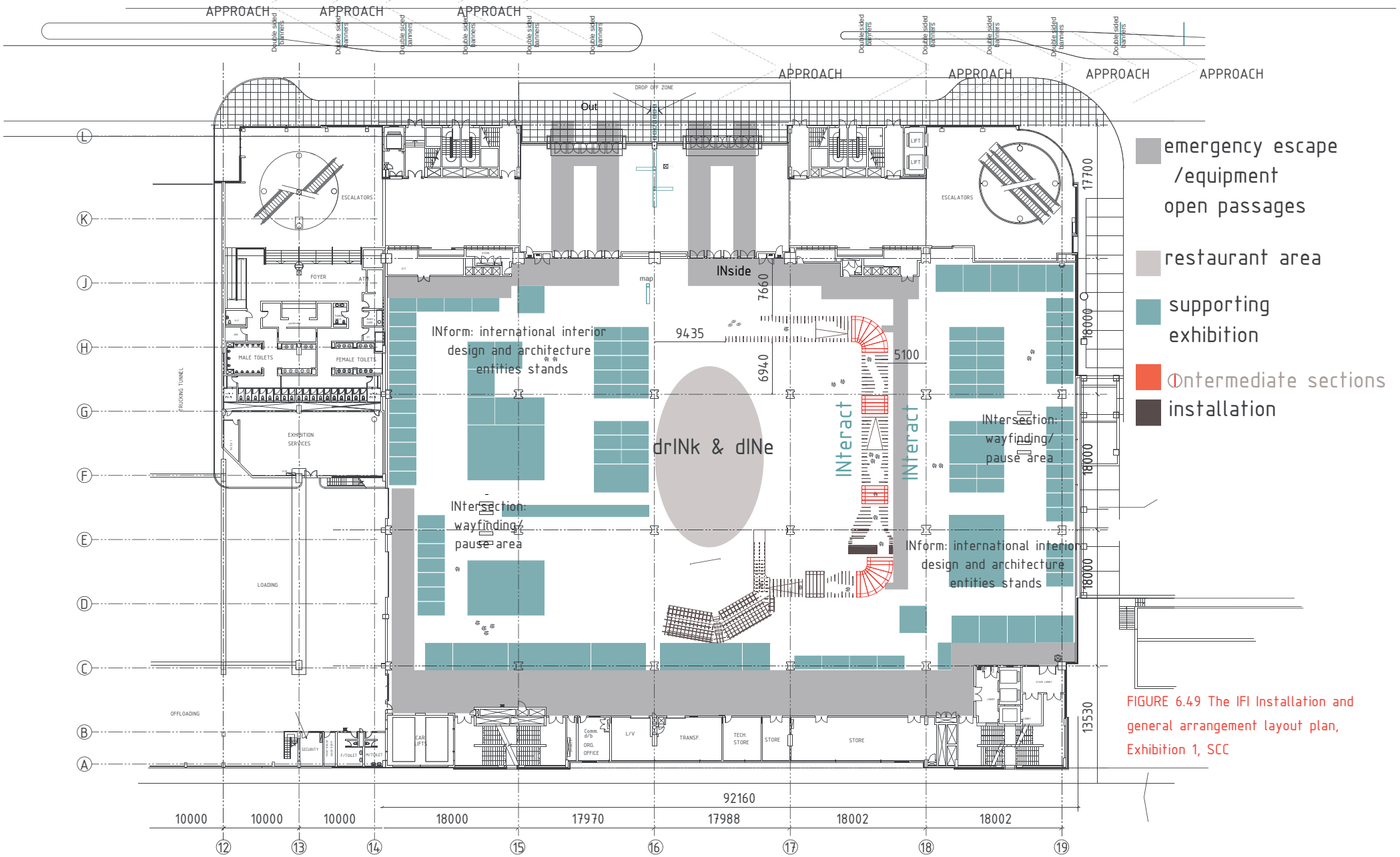


FIGURE 6.49 The IFI Installation and general arrangement layout plan, Exhibition 1, SCC

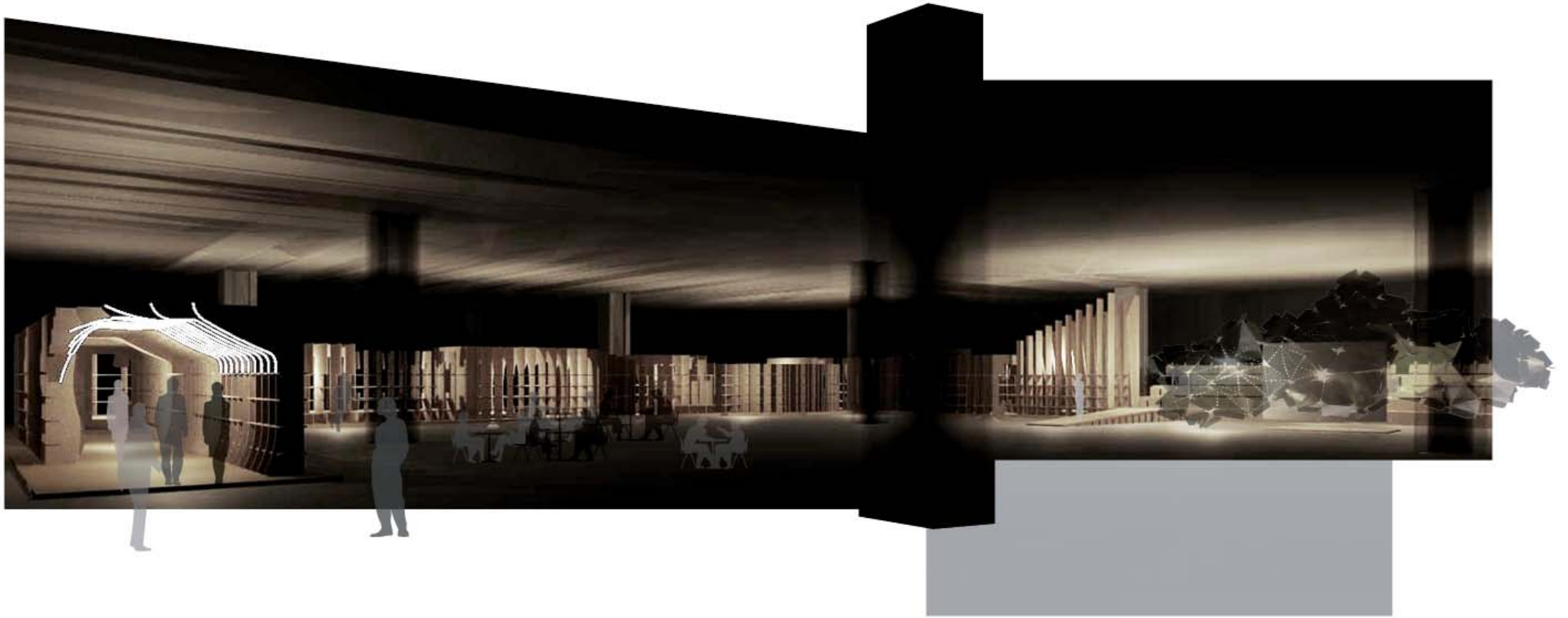


FIGURE 6.50 The IFI Installation in Exhibition 1, SCC: 3D image (digital model)

6.5 THE IFI INTERIORS BIENNALE 2013 HOST SPECIFICATION

exhibition host location

within 30min public transport time
via primary public transport means
from international airport

5mins walking from primary public transport node
approximately 0.5 kilometre (0.31 mile)

access to secondary public transport node

access to urban recreational centre
via primary or secondary public transport
proximity: 5 kilometre (3.1 mile) radius

access to large scale accommodation
via primary or secondary public transport
proximity: 5 kilometre (3.1 mile) radius

exhibition facility

international commercial exhibition &
conference facility

comply with universal design requirements

at least 2 boardroom facilities
on site: 70 pax

min dedicated exhibition area
5 000 m2 (53 819.5 square foot)

min 6000mm clear height in exhibition hall

rigging below soffit for lighting and
suspended component

electrical access points (under floor/ column)
@ 9000mm ctc max

6.6 EXPERIENCING THE IFI INTERIORS DECLARATION

"The Biennale... will be designed to manifest (for physical experience) the IFI Interiors Declaration." (Caan 2011)

The seven principles included in the IFI Interiors Declaration have already been established as one of the primary design generators of the IFI Interiors Installation design. The principles have also been interpreted as interior design(er) manifestos in the beginning of this chapter. By subjecting these statements to volumetric studies of iconic interior, the intuitive design process is initiated.

Volumetric study conclusion:

The volumetric study generated spatial forms that informed the design development of the IFI Installation's physical narrative.

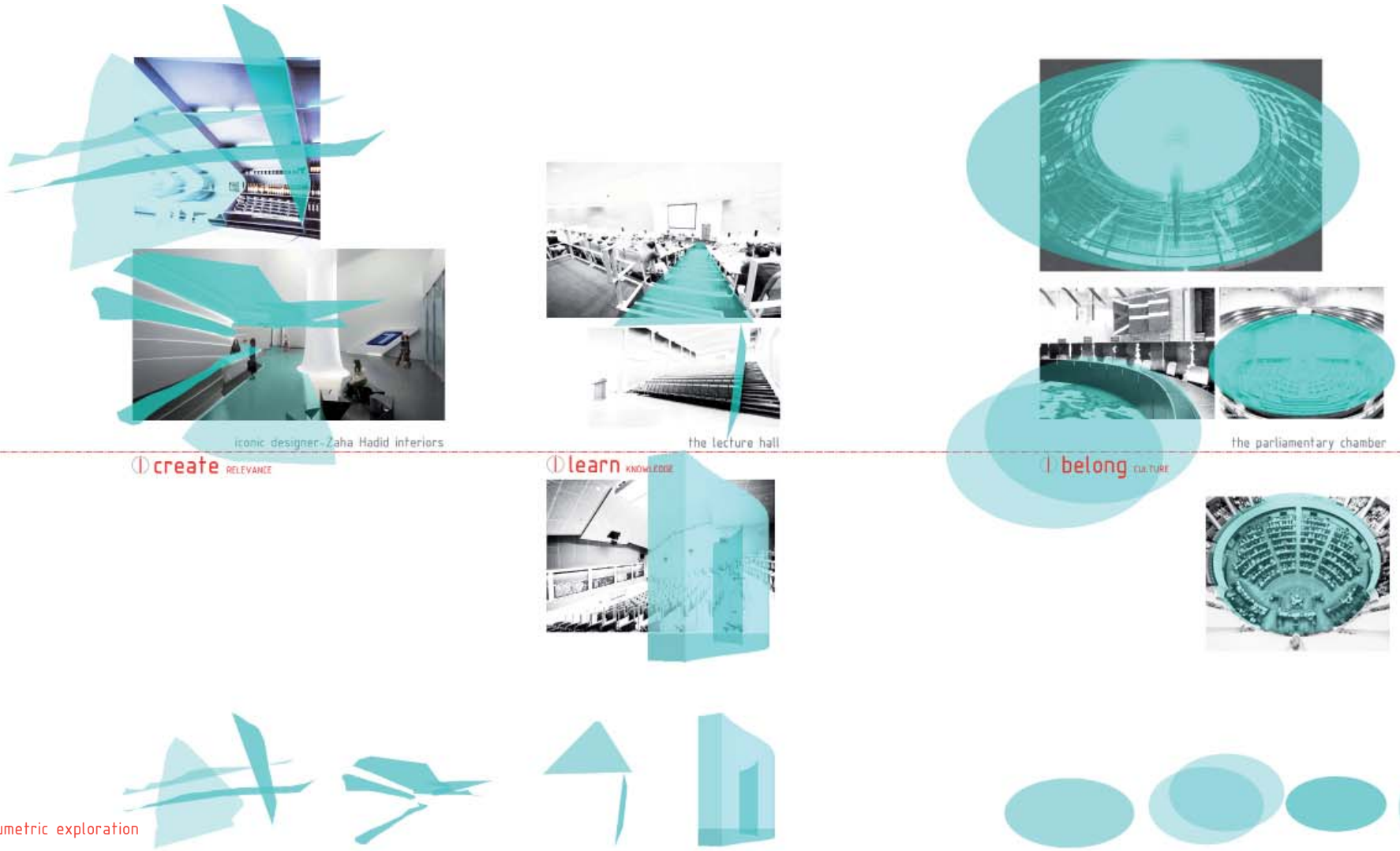
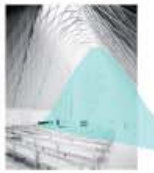


FIGURE 6.51 Volumetric exploration of iconic spaces

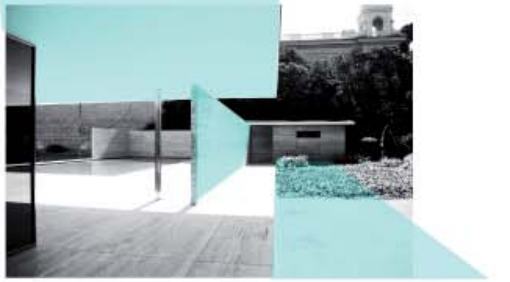
the office

The apparently random form was derived from the constraints placed by the site – a tree root here, a water tank there, as well as existing foundations scattered around.

responding to life



the religious volume



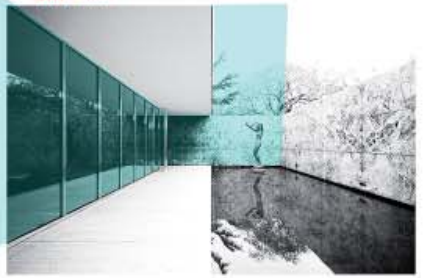
inside and out: intrinsically connected

work BUSINESS

live RESPONSIBILITY

aspire VALUE

am IDENTITY



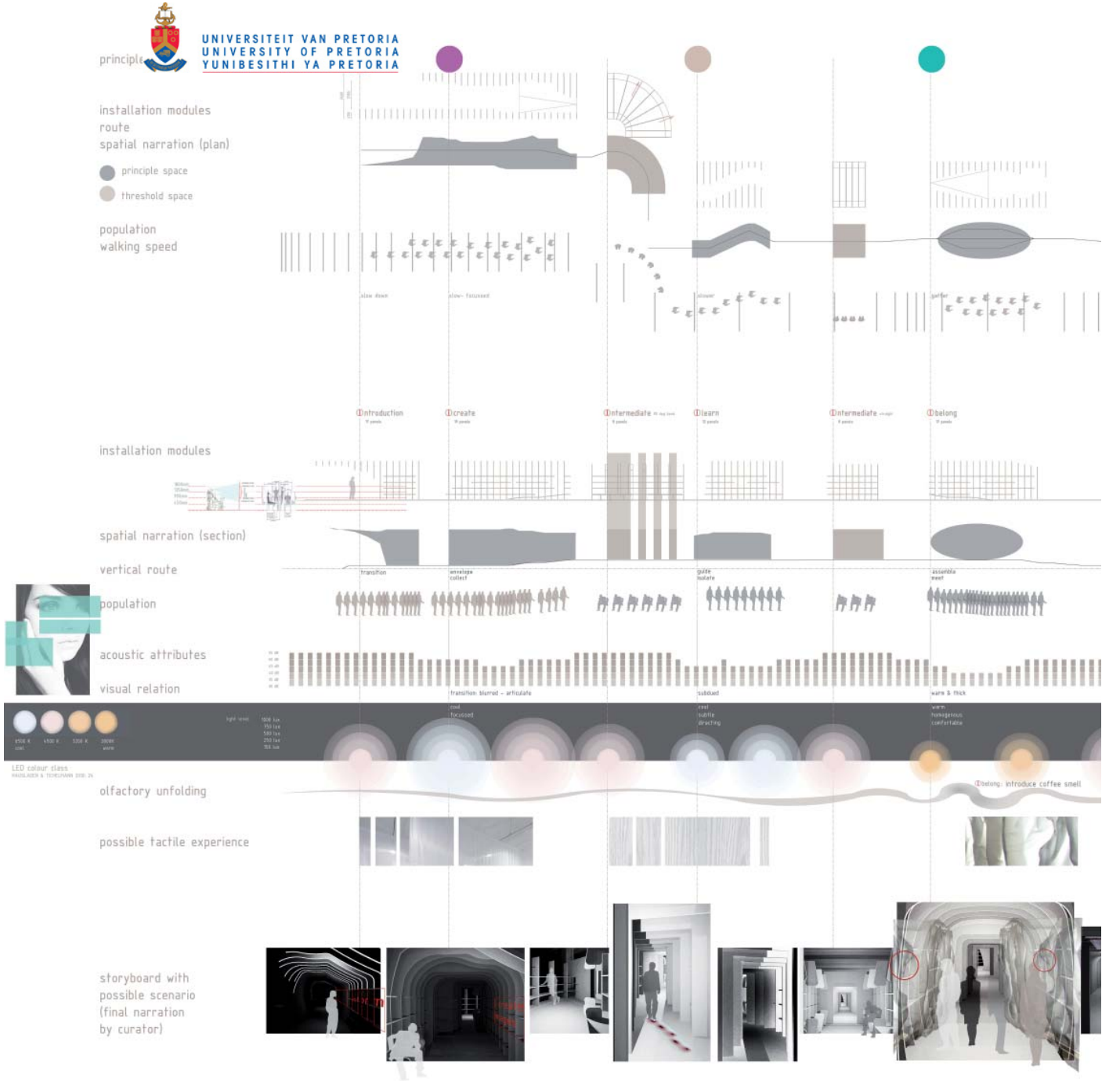
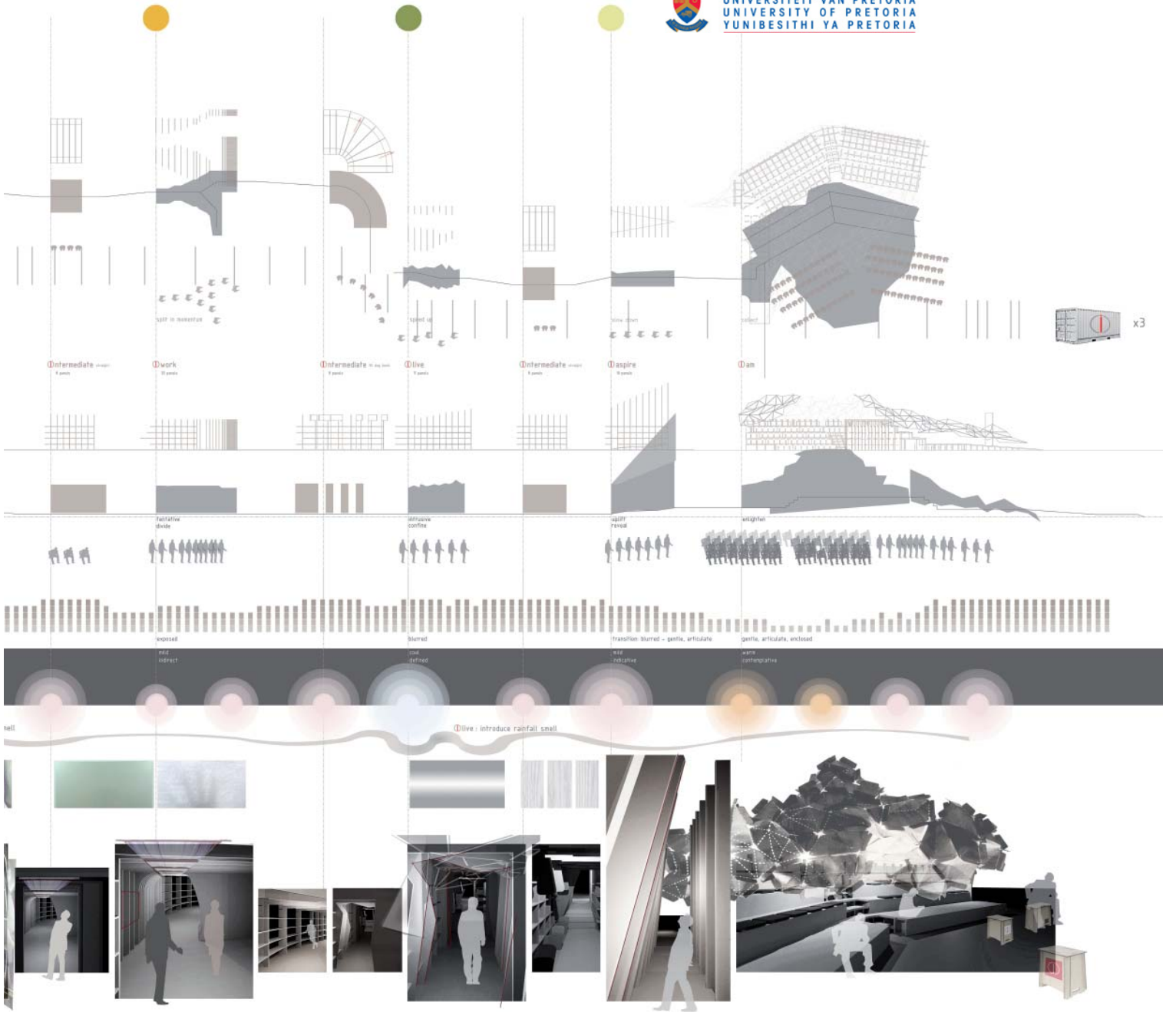


FIGURE 6.52 Storyboard narrative


x3
①intermediate
①work
①intermediate
①live
①intermediate
①aspire
①an
split in momentum
speed up
slow down
collect
habitative
divide
intrusive
confine
spirit
reveal
enlighten
exposed
mild
indirect
blurred
cool
defined
transition: blurred - gentle, articulate
mild
indicative
gentle, articulate, enclosed
warm
contemplative
①live : introduce rainfall smell

07 technical resolution

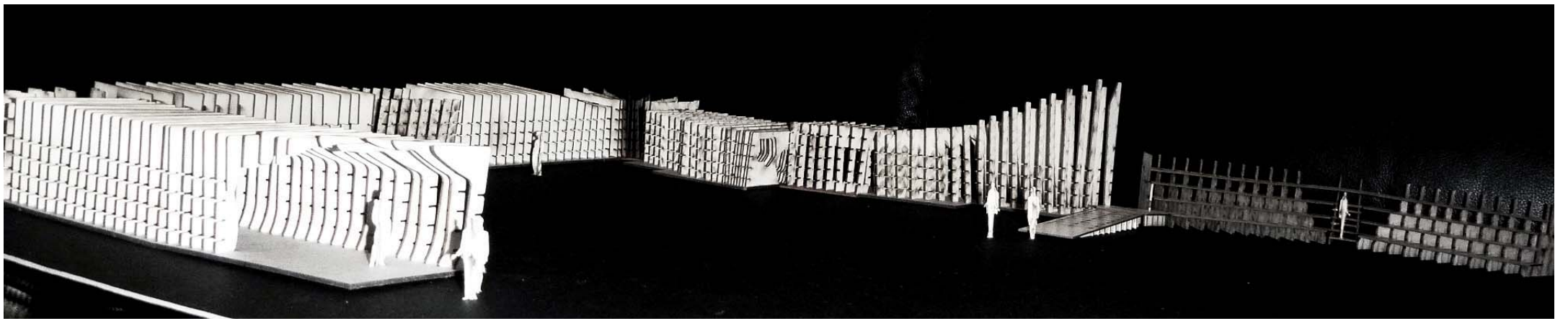


FIGURE 7.1 Final model of IFI
Installation in SCC configuration

7.1 CNC CAD DRAWING APPLICATION

The diagram to the left illustrates typical fabrication CAD drawings prepared for CNC input. The colours used to indicate cutting and engraving are likely to be different between CNC machines.

Damaged or lost components:

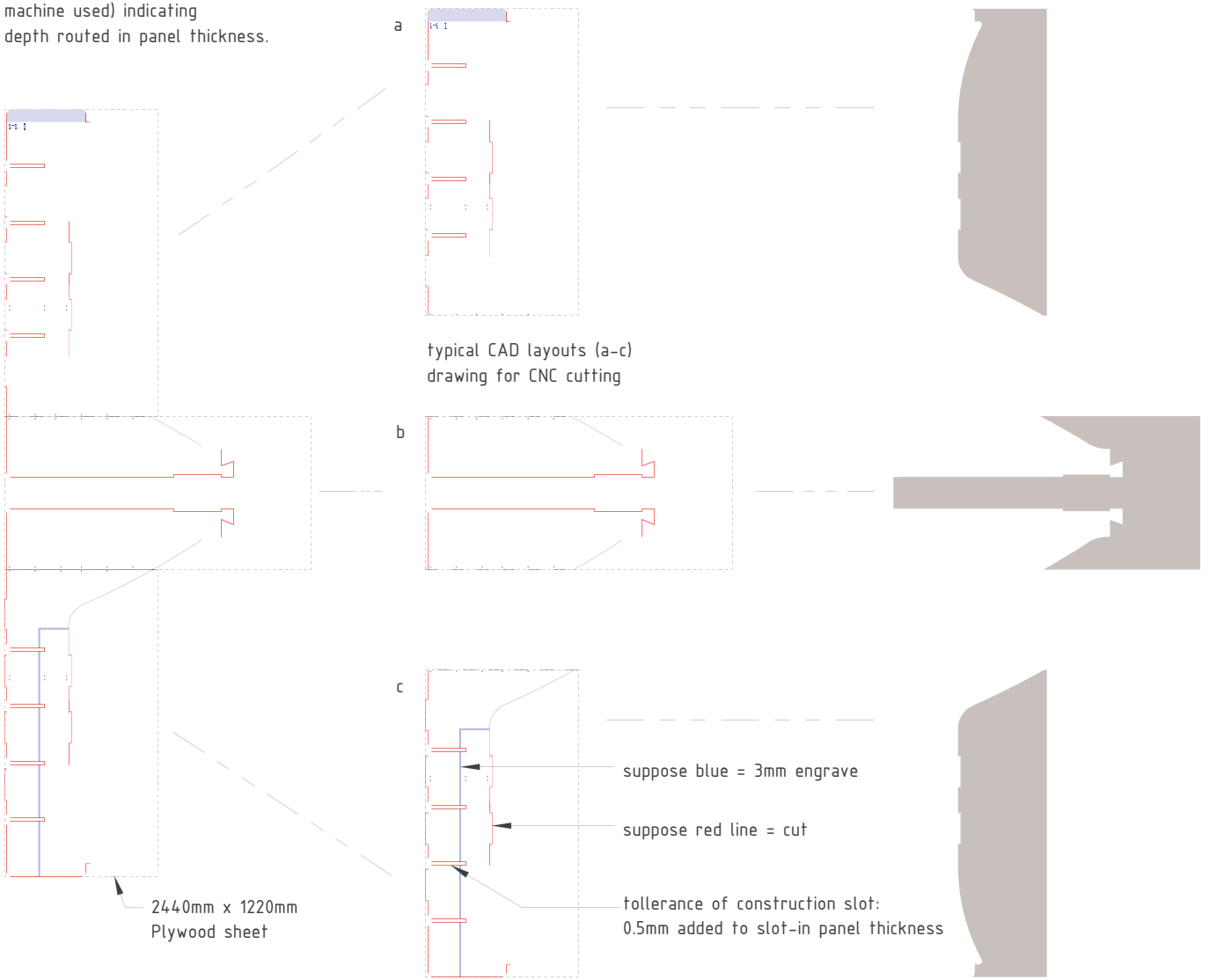
If a component of the IFI Installation can no longer be used as a result of damage or loss it will be re-fabricated in the country it inhabits at the time. This will reduce the energy consumption associated with transporting the component over long distances.

The CNC CAD layout for the installation is stored on a digital information chip within each component. When the chip is scanned the drawings become available for remanufacture.

Lay installation componen
out on standard plywood sheet
sizes in CAD. Different
colours (determined by CNC
machine used) indicating
depth routed in panel thickness.

o be exported to CNC machine
(verify that CNC machine bed size can accommodate
panel product sheet size and thickness)

Panel off-cuts that are too small to
be accommodated as installation components
are allocated a new end use application
(as stated in Chapter 5)



typical CAD layouts (a-c)
drawing for CNC cutting

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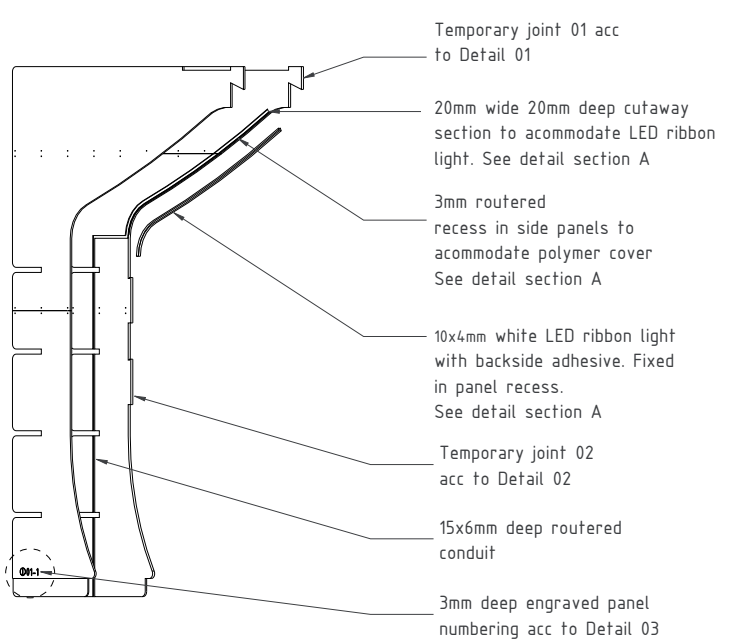
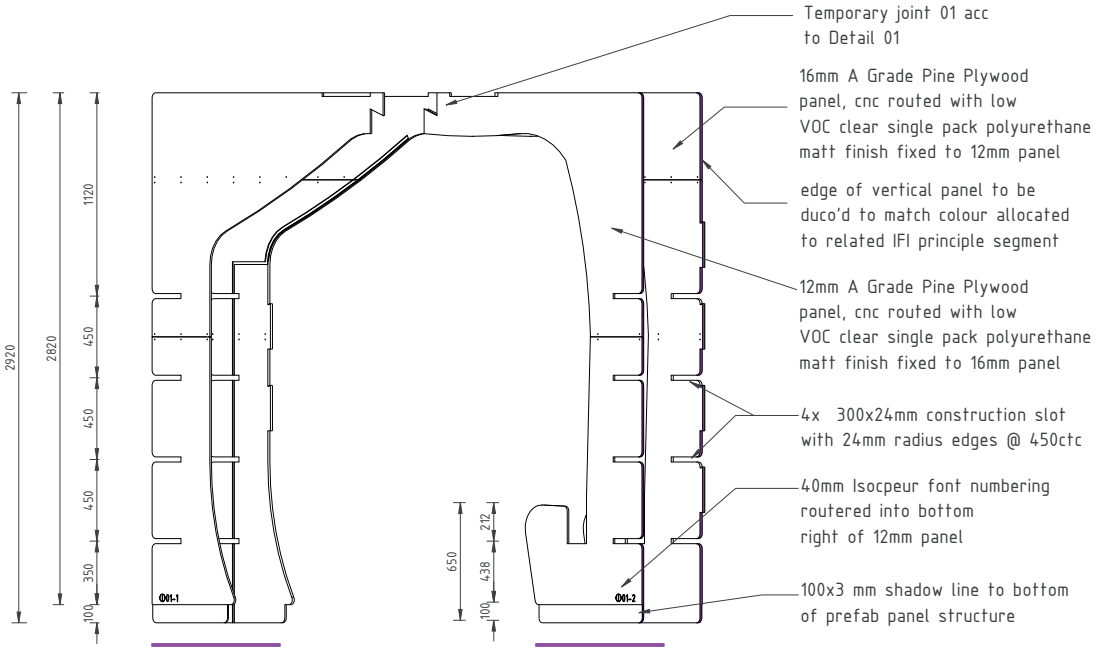
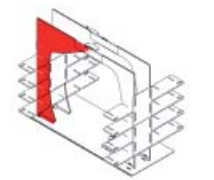
7.2 THE KIT OF PARTS

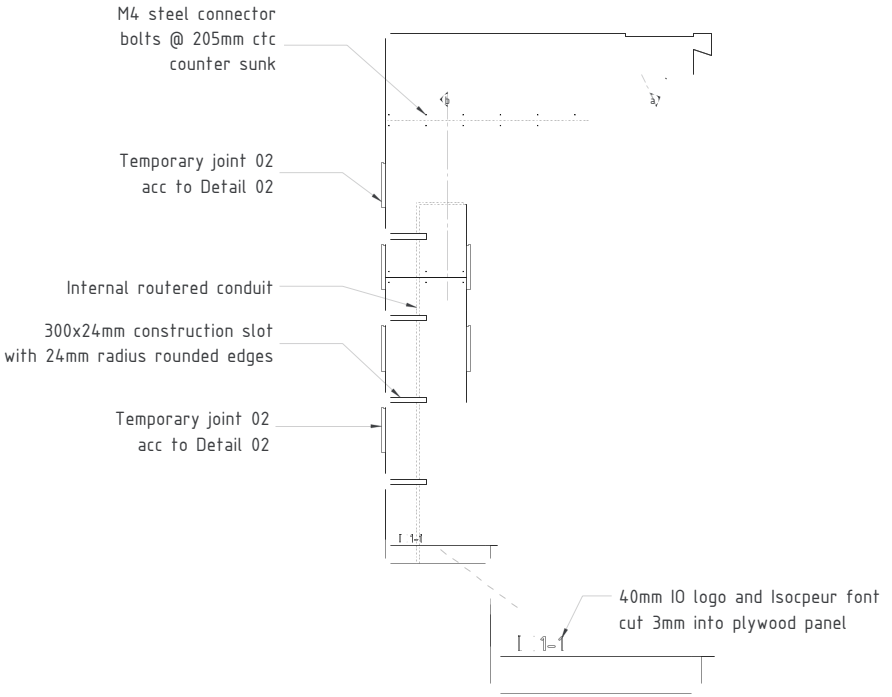
All installation components are routed from A Grade, fire retardant pine plywood panels (2440mm x 1220mm) adhered with formaldehyde-free PureBond adhesive (discussed in Chapter 5).

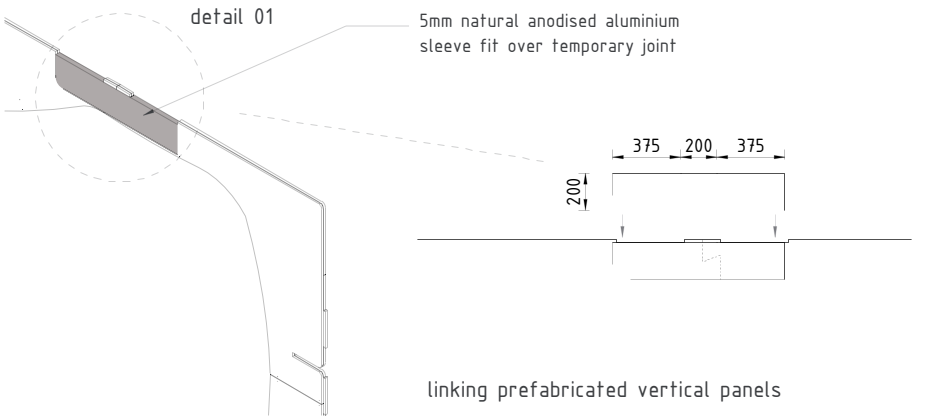




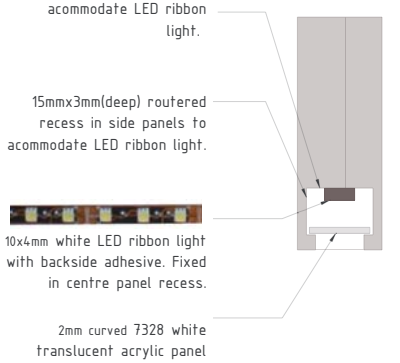


PREFABRICATED VERTICAL PANEL

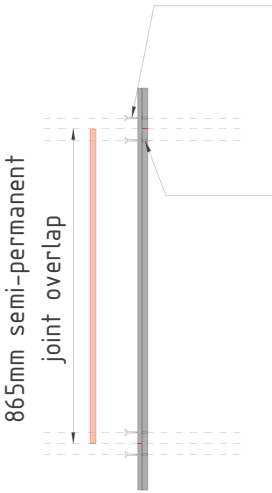




linking prefabricated vertical panels



detail section a



detail section b

m4x28 metric flat head bolt countersunk with hexagonal drive

Insert-Nut 4mm thread suitable for m4 connector bolts 13mm length

allen wrench necessary if prefabricated
panel is to be disassembled

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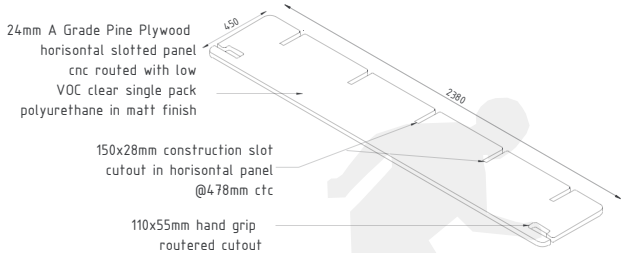
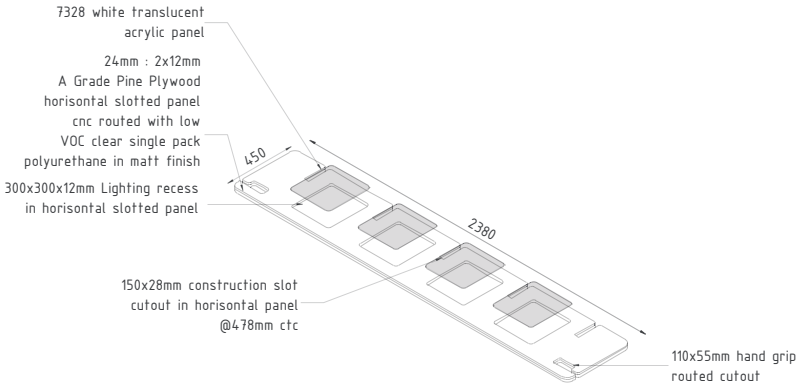
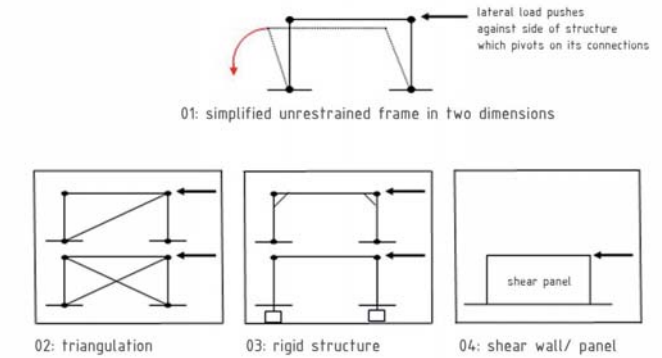


horisontal panel A: plain



horisontal panel B: with lightbox



01: simplified unrestrained frame in two dimensions

02: triangulation

03: rigid structure

04: shear wall/ panel

Controlling lateral instability:

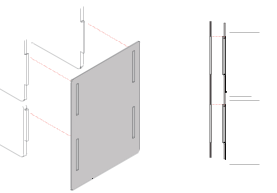
Buildings and structures are usually stabilised against lateral loads by using any or a combination of the three following structural systems (Worksafe 2011):

Triangulation – additional interconnecting diagona components (bracing) connecting the columns and beams (See 02).

Rigid Structure – if the joints in the structure are made rigid, the structure can resist lateral loads. This can be accomplished by using knee-braces, deep footings etc (See 03).

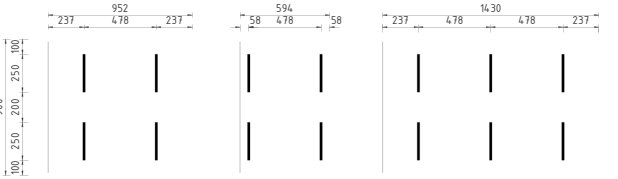
Shear – if the supporting structure has walls rather than beams and columns, these walls or panels can be used to resist the lateral loads, i.e. a shear panel (See 04).

The IFI Installation will use shear support panels.



Detail 02: assembly- slide over and hook in

Shear panel with possible
digital screen attachment

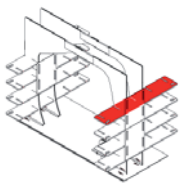


double wide double narrow tripple wide

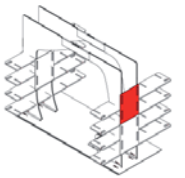
3 Standard shear panel patterns

possible panel products: 16mm plywood
16mm X Board closed cell for prints
16mm translucent white Plexiglas
16mm transparent Plexiglas

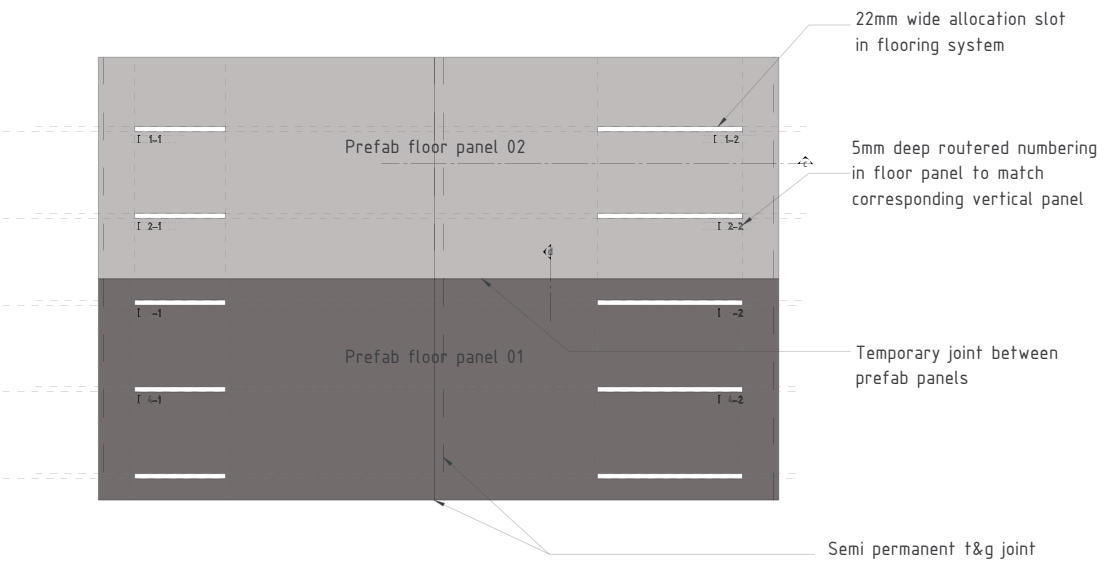
Final shear panel finish and attachments to be determined by curator



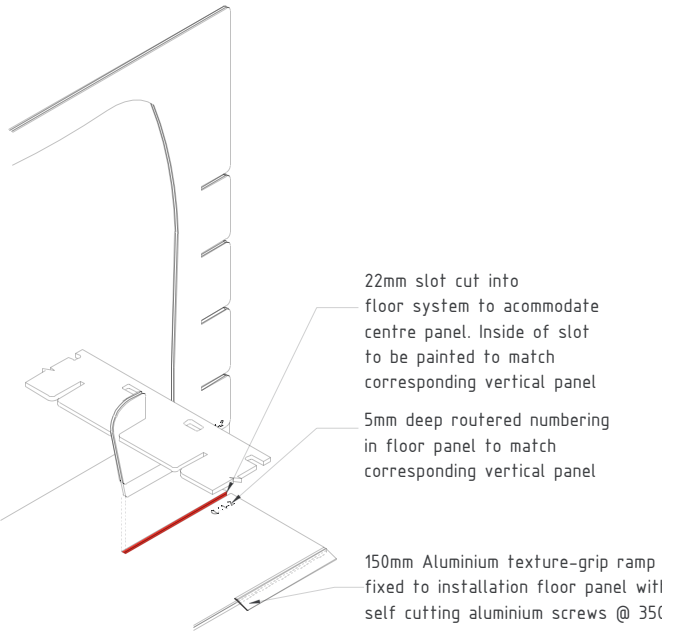
PREFABRICATED HORISONTAL PANEL



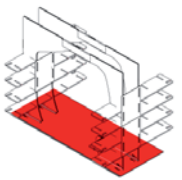
PREFABRICATED SHEAR PANEL



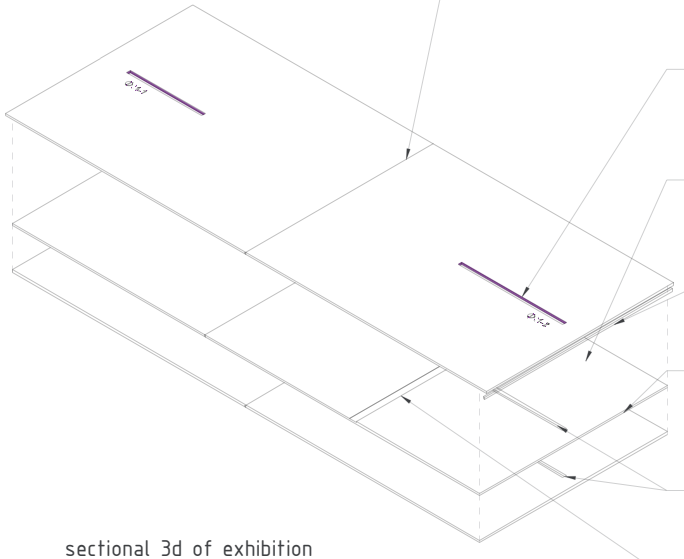
sectional plan of exhibition flooring system



floor panel with aluminium threshold



PREFABRICATED FLOOR PANEL SYSTEM



joint
s to
be staggered

22mm slot cut into
floor system to acommodate
vertical panel. Inside of slot
to be painted colour
to match colour allocated
to related IFI principal segment

3x 16mm A Grade Pine Plywood
floor panel with low
VOC clear single pack polyurethane in
matt finish fixed together with
M6 connector bolts
and insert nuts recessed in top panel

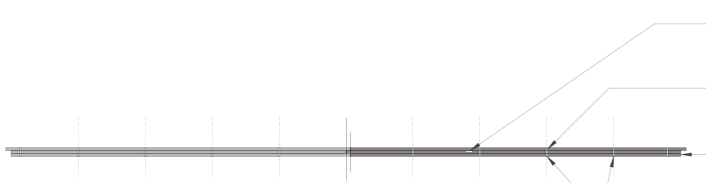
10x4mm white LED ribbon light
with backside adhesive. Fixed
to bottom of top floor panel

2x 16mm bottom floor
panels to be recessed
30mm at edges to accommodate
LED ribbon light

22mm wide allocation slot
in flooring system

10mm routered conduit in centre
floor panel

sectional 3d of exhibition
flooring system



10mm routered conduit in centre
floor panel

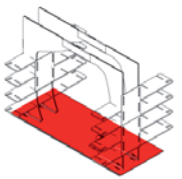
Insert-Nut 6mm thread suitable
for m6 connector bolts 45mm length

30mm recess to accommodate
LED ribbon light

m6x45 metric flat head bolt
countersunk with hexagonal drive

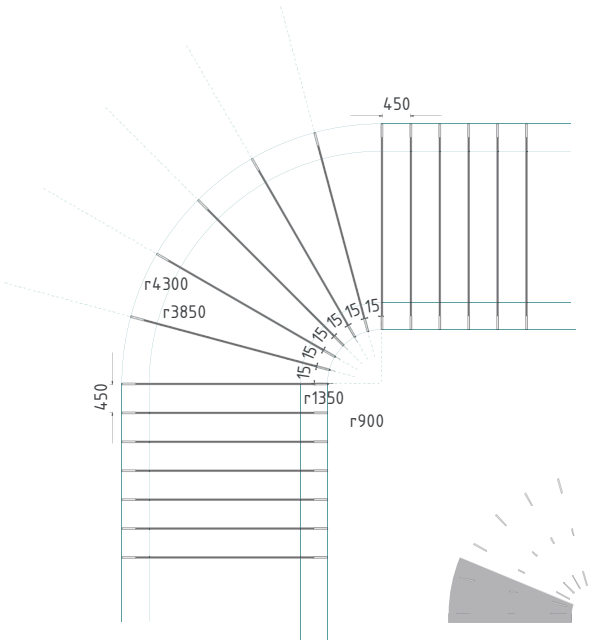
detail section c

detail section d



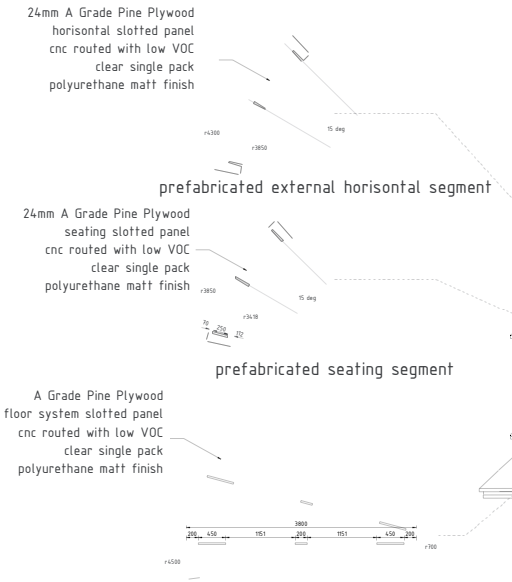
LED lighting effect to sides of floor panel

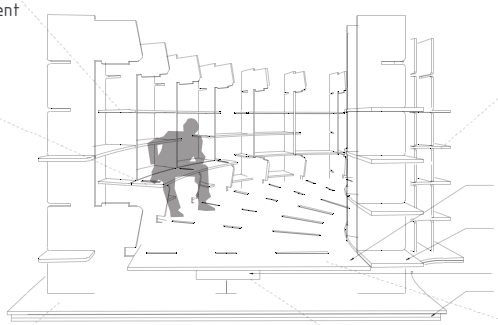
7.3 INTERMEDIATE SECTIONS



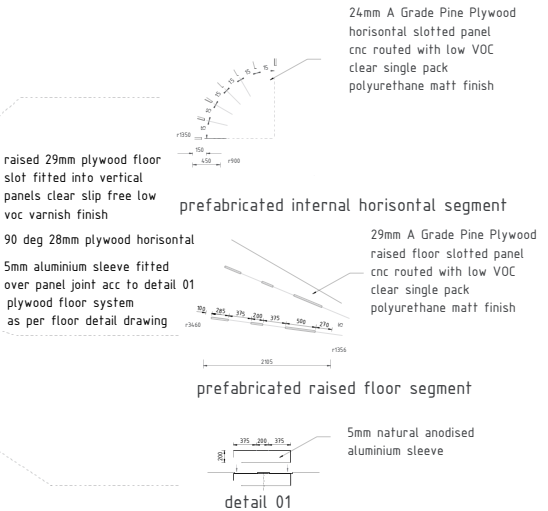
the 90 deg bend

the 90 deg bend: segment





perspective elevation of the 90deg bend



ⓘntermediate sections : the 90deg bend

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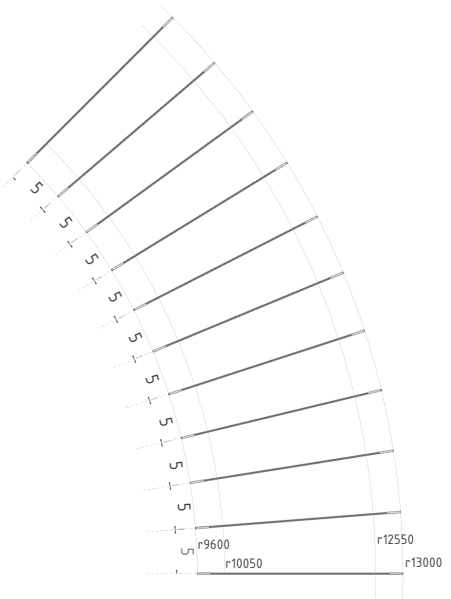
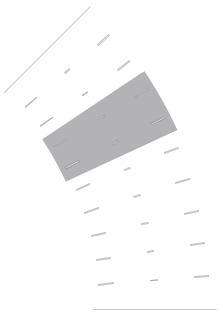
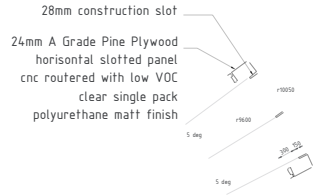


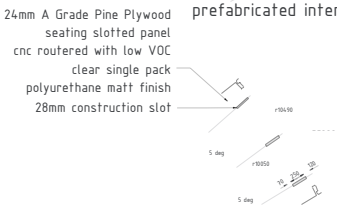
the 45 deg bend



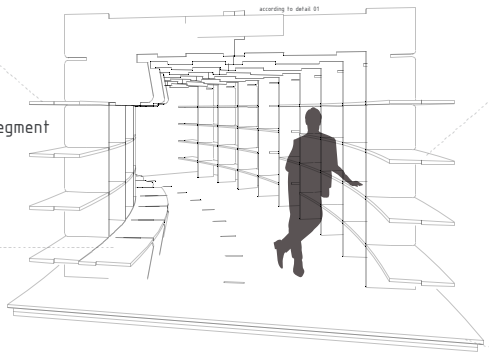
the 45 deg bend: segment



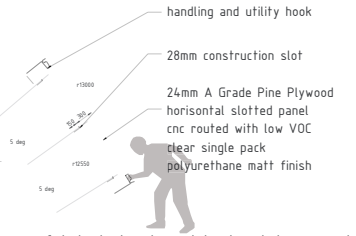
prefabricated internal horisontal segment



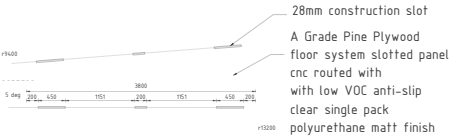
prefabricated seating segment



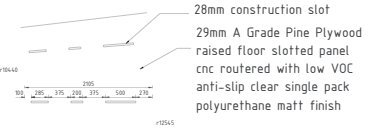
perspective elevation of the 45deg bend



prefabricated external horisontal segment



prefabricated floor system segment



prefabricated raised floor segment

Intermediate sections : the 45deg bend

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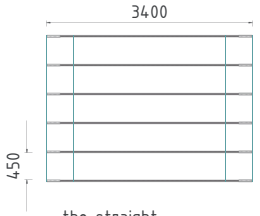
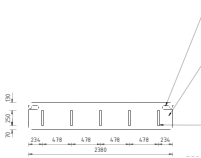
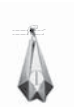


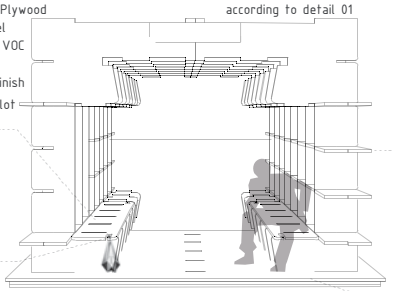
the straight



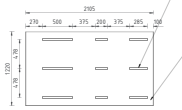
prefabricated seating segment



handling and utility hook

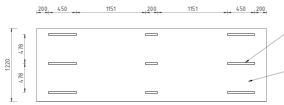


perspective elevation of the straight



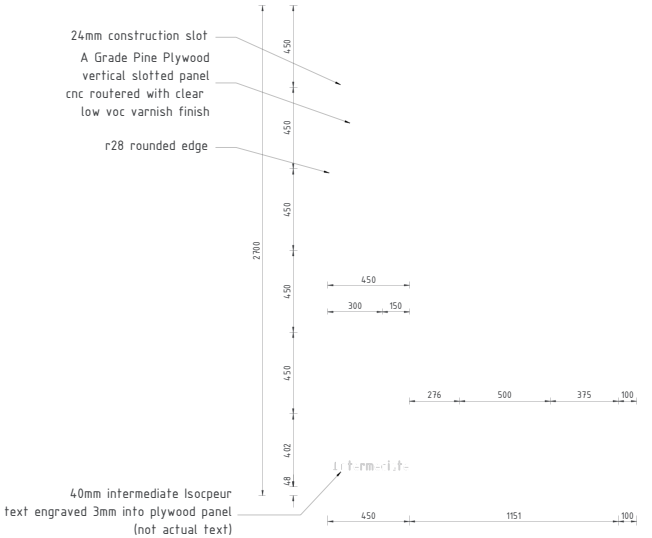
prefabricated raised floor segment

kit of parts prefabricated horisontal
panel to be used for straight
intermediate segment

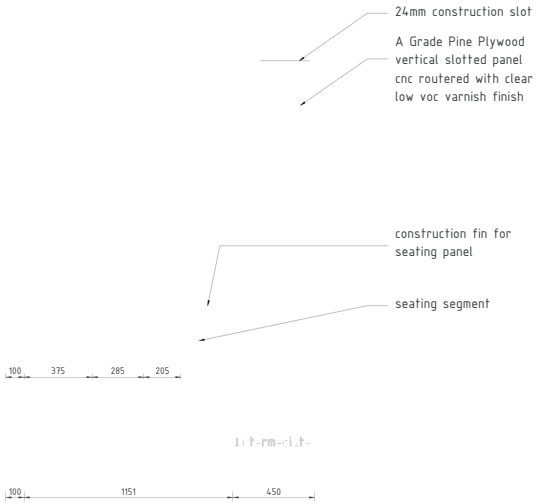


prefabricated floor system segment

possible configurations



straight down panel



seating panel

intermediate sections : the straight

interchangeable intermediate prefabricated panels

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7.4 THE CONTEMPLATION PAVILION

19mm A Grade Pine Plywood
back rest slotted panel
cnc routed with low VOC
clear single pack
polyurethane matt finish

prefabricated back rest x5

charcoal no-break polypropylene,
stain-resistant twill fabric cushion
with noiseless torsion springs
seat fixed with strong
velcro strips to plywood seating

prefabricated soft seating x69

19mm A Grade Pine Plywood
slotted base structure 01
cnc routed with low VOC
clear single pack
polyurethane matt finish

19mm structural slot

plywood support panel 01 x5

19mm A Grade Pine Plywood
slotted base structure 02
cnc routed with low VOC
clear single pack
polyurethane matt finish

19mm structural slot

plywood support panel 02 x5

19mm A Grade Pine Plywood
slotted base structure 03
cnc routed with low VOC
clear single pack
polyurethane matt finish

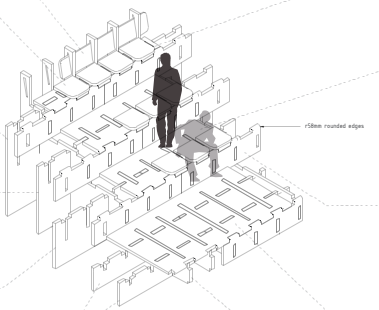
19mm structural slot

plywood support panel 03 x5

19mm A Grade Pine Plywood
slotted base structure 04
cnc routed with low VOC
clear single pack
polyurethane matt finish

19mm structural slot

plywood support panel 04 x10



19mm structural slot
19mm A Grade Pine Plywood
slotted slim amphi tread
cnc routed with low VOC
clear single pack
polyurethane matt finish

plywood slim seating tread x5

19mm structural slot
19mm A Grade Pine Plywood
slotted narrow amphi tread
cnc routed with low VOC
clear single pack
polyurethane matt finish

plywood narrow seating tread x5

19mm A Grade Pine Plywood
slotted amphi riser
cnc routed with low VOC
clear single pack
polyurethane matt finish
19mm structural slot

plywood riser x20

19mm structural slot
19mm A Grade Pine Plywood
slotted wide amphi tread
cnc routed with low VOC
clear single pack
polyurethane matt finish

plywood wide seating tread x5

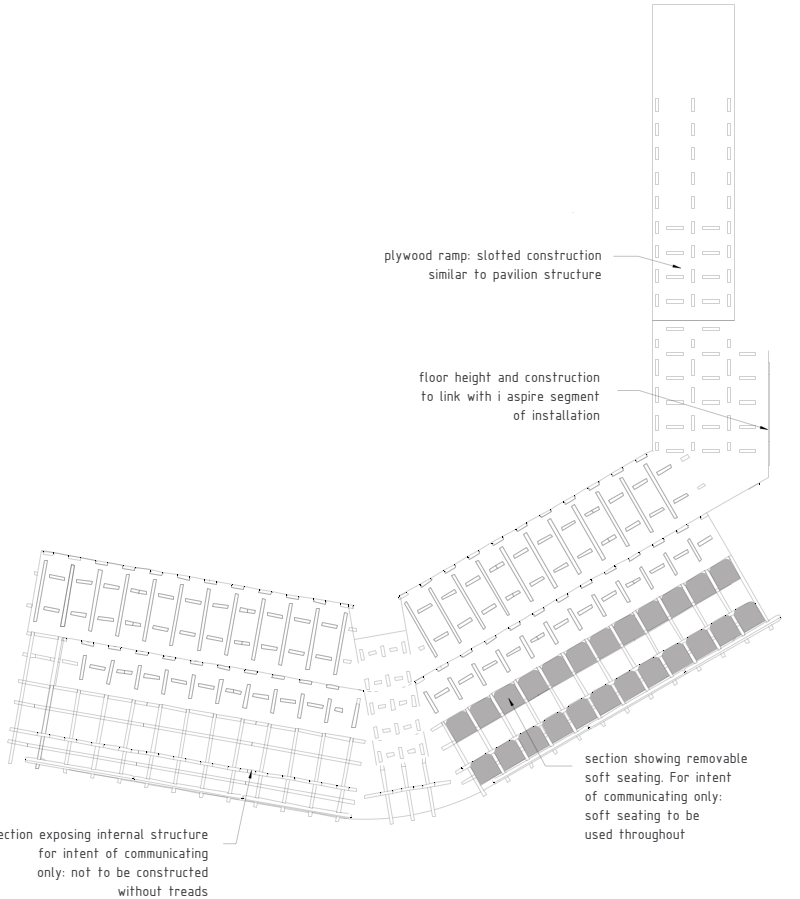
19mm A Grade Pine Plywood
slotted main structure
cnc routed with low VOC
clear single pack
polyurethane matt finish
19mm structural slot

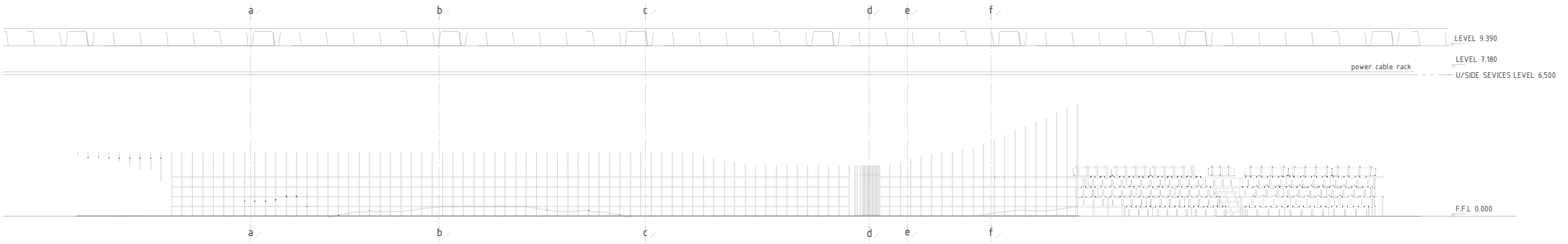
plywood main support panel x26

tools required: rubber mallet

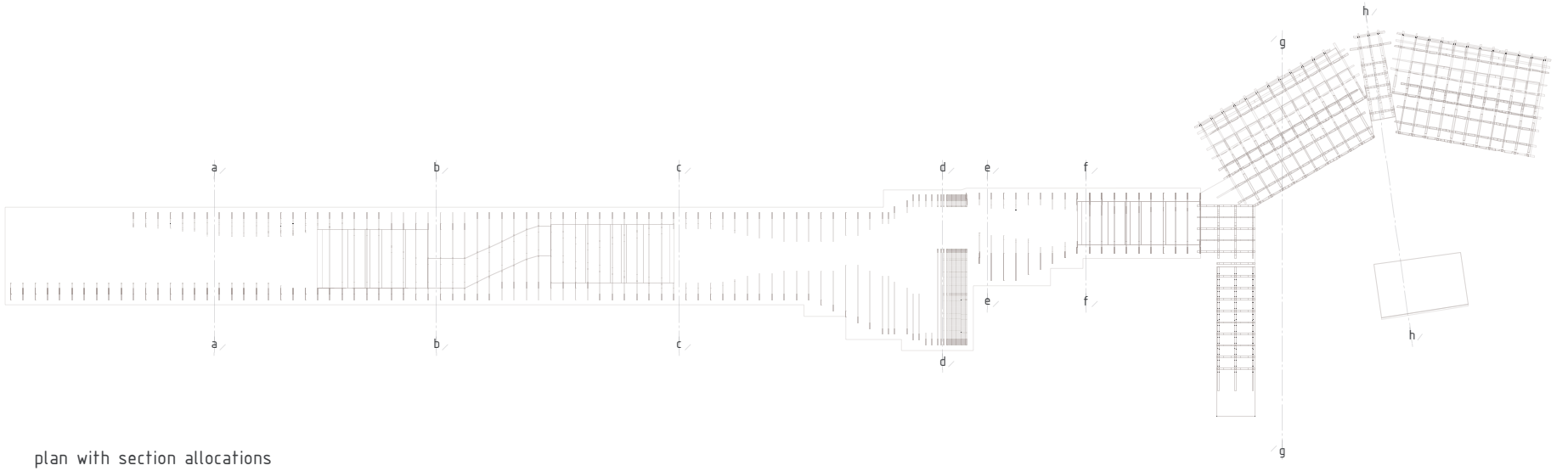
i am contemplation pavilion
seats 90 people

am





elevation with section allocations



plan with section allocations

installation: linear state

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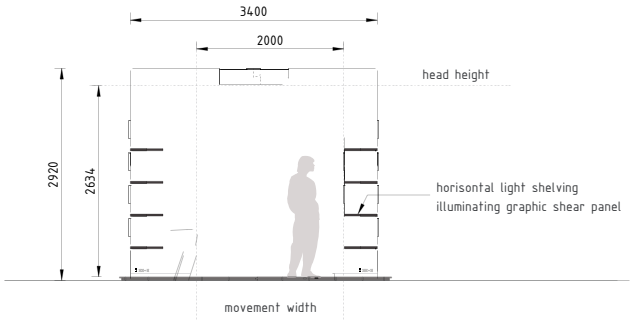
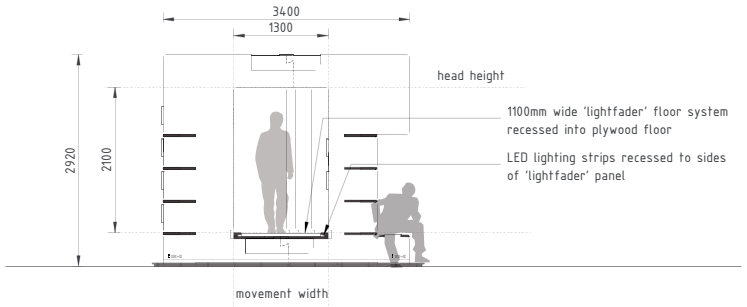
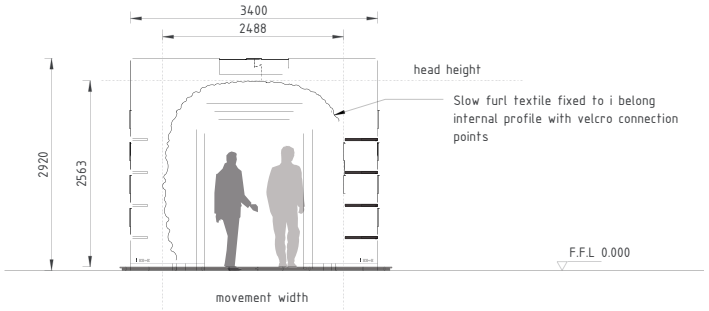
7.5 SECTIONS THROUGH PRINCIPLE SPACES WITH PROPOSED LIGHTING



section a-a



section b-b



section c-c

Lighting effect reference:
lighting from horisontal panels. Galaxy SOHO Interior by Zaha-Hadid (Hadid 2011)

FIGURE 7.2 Galaxy SOHO Interior

When a pedestrian walks across Rogier Sterk's interactive 'lightfader' floor, his or her weight displaces fluid contained within the panel system, leaving light prints for about one minute after contact. The system may be constructed as an independent floor and can perform without the built-in light. In this installation, footprints allow light within an upper space to be visible (Sterk 2011)

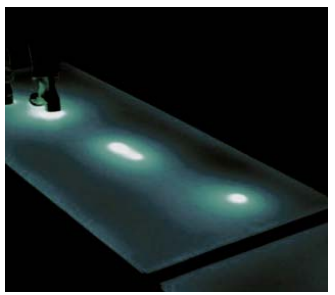


FIGURE 7.3 Lightfader floor

Slow Furl by Ruairi Glynn is a textile that acts and reacts on its inhabitation. The textile exists as a soft and pliable skin that lines the i belong space. The skin shifts. As guests enter and move within the 'room', the skin moves imperceptibly at deep time-frames, creating new cavities and spaces, revealing slits and apertures, manipulating light quality from horisontal light shelves (Glynn 2008).

FIGURE 7.4 Slow Furl textile

create

learn

belong

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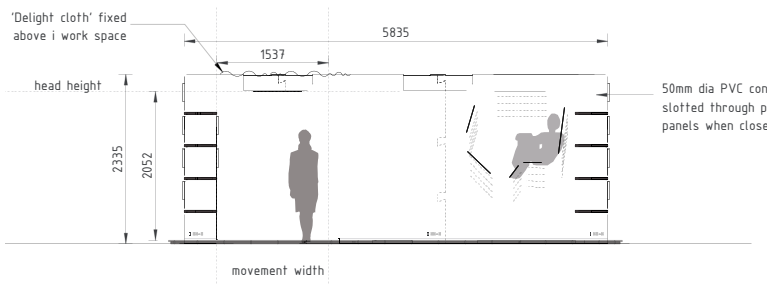
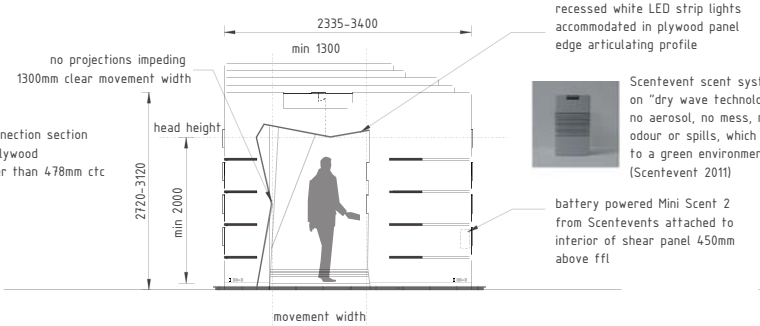
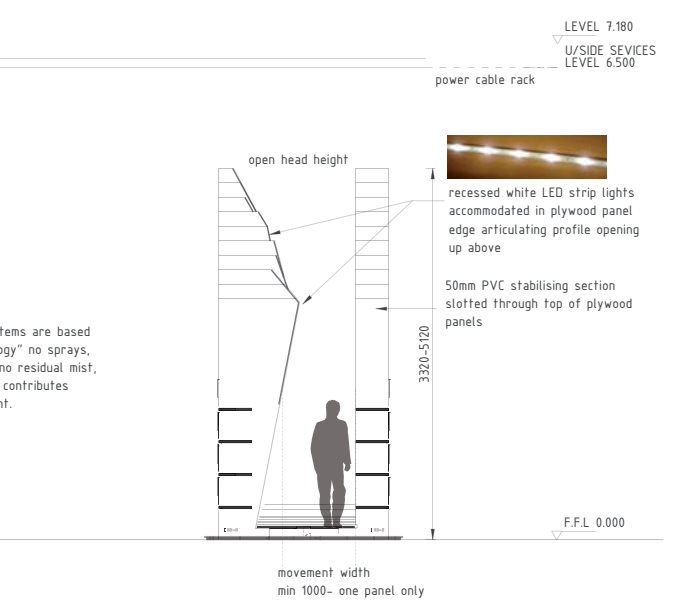


section d-d



section e-e



section f-f

Delight Cloth by Tsuya Textile Co., in conjunction with the Fukui Engineering Center consists of super thin fiber optic strands woven into a tapestry (Tsuya 2011).

where we're going

FIGURE 7.5 Delight Cloth

Lighting effect reference:
The Carbon Bar, Park Hotel, Hyderabad, India (Khosla Associates 2011)

irregular

FIGURE 7.6 Carbon Bar interior

Lighting effect reference:
Kuokkala Church (2010) by Lassila Hirvilammi (Hirvilammi 2010)

FIGURE 7.7 Kuokkala church interior

work

live

aspire

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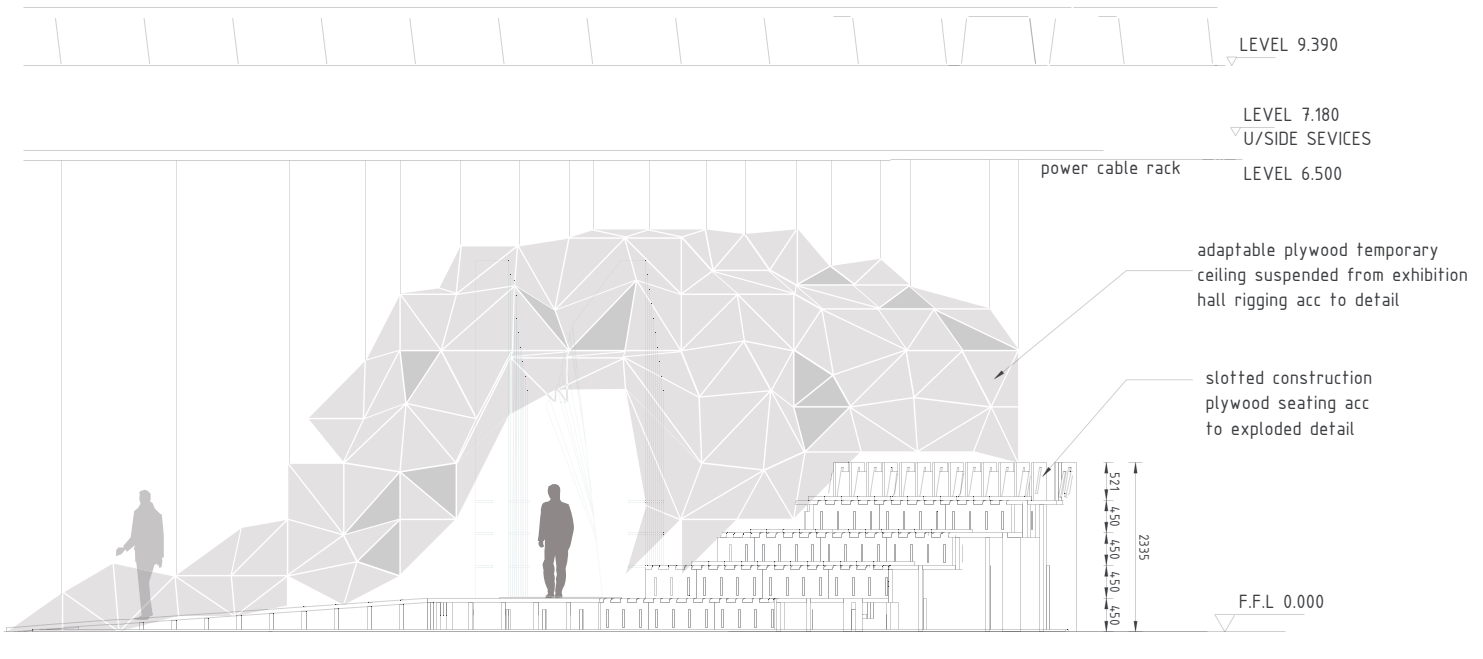
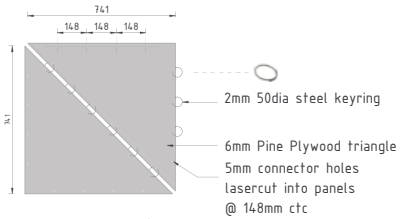
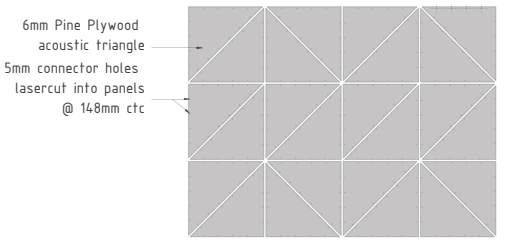


section g-g through iam contemplation space and auditorium



panel detail



suspended Plywood panelled ceiling segment

considered patterns for suspended ceiling panels

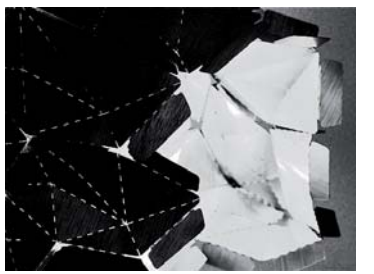


FIGURE 7.8 Ale lamp by Mocoloco

FIGURE 7.9 Voussoir cloud by IwamotoScott Architecture

FIGURE 7.10 PlyLight by Projectione

FIGURE 7.11 Haze by Tara Donovan

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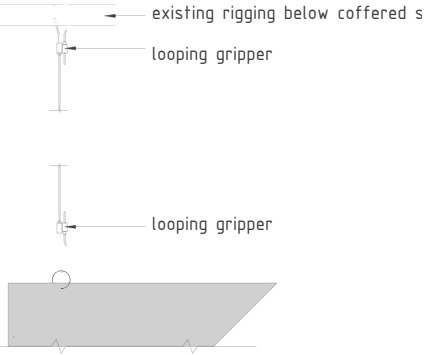
STEP 1: Insert cable into Looping Gripper.
STEP 2: Pass cable through or around anchor point.
STEP 3: Insert cable back into Looping Gripper.

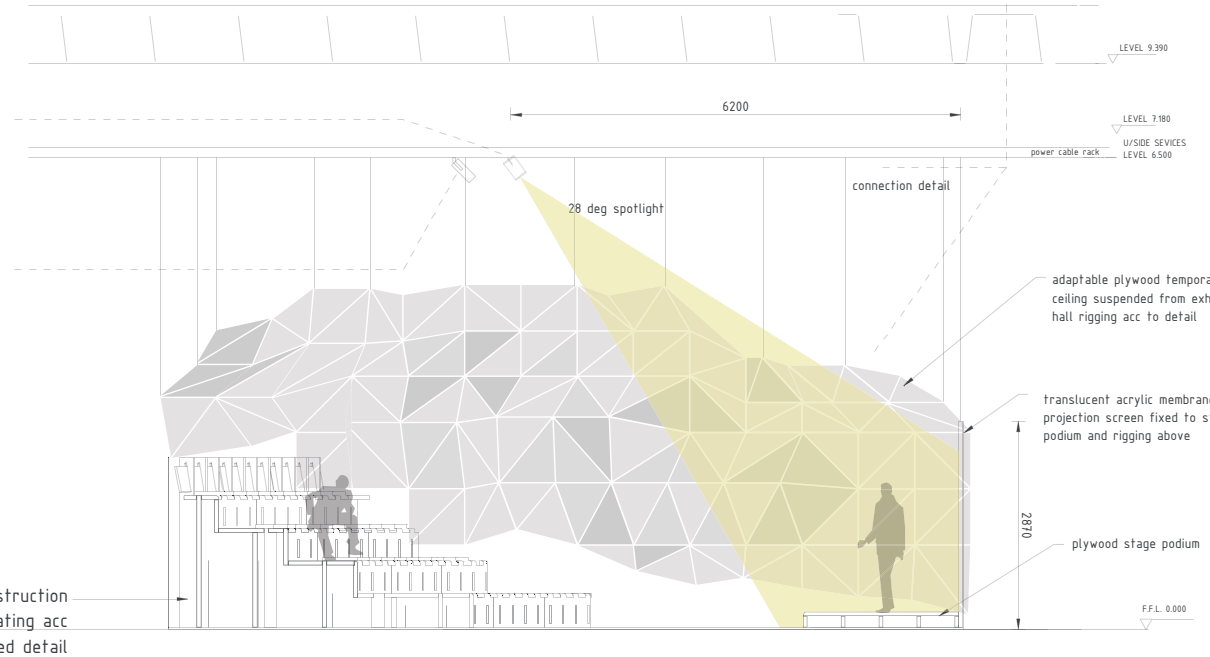
ADJUSTMENT: Remove load from cable, depress plunger & adjust cable height. Release plunger to lock cable position (cablegrippers 2010)

28 degree Sputnik spot light with LED light source from Regent Lighting

EB-Z8000 WUXGA Epson projector

Projector designed for auditoriums and large venues. The high definition, high brightness WUXGA projector featuring industry leading 3LCD technology.





am

section h-h through iam contemplation space and auditorium

7.6 ACOUSTIC SCREEN

The acoustic principles of the suspended pavilion screen could be described as similar to that of a lecture hall.

The goal of the space is to allow audience members to easily hear and understand the presenter without the use of a sound reinforcement system.

Related Codes & Standards (acoustics.com 2009):

- Reverberation Time (RT 60)
- Noise Criteria (NC)

Considerations:

a) Recommended reverberation time is 1 second.
b) Potential noise impact to the space from exterior sources and/or excessive HVAC noise which can greatly degrade speech intelligibility. The NC (Noise Criteria) level should not exceed 25 to 30.
c) The front and ceiling panels can be reflective, enabling sound to reach everyone.
d) Absorptive material on the back and side panels will help reduce the reverberation time and unwanted reflections.
e) Avoid parallel surfaces, which can cause flutter echoes. Consider splaying or canting the sidewalls.

Application:

i am space reverberation time:

length: 11 500 mm
width: 11 000 mm
height: 7 800 mm

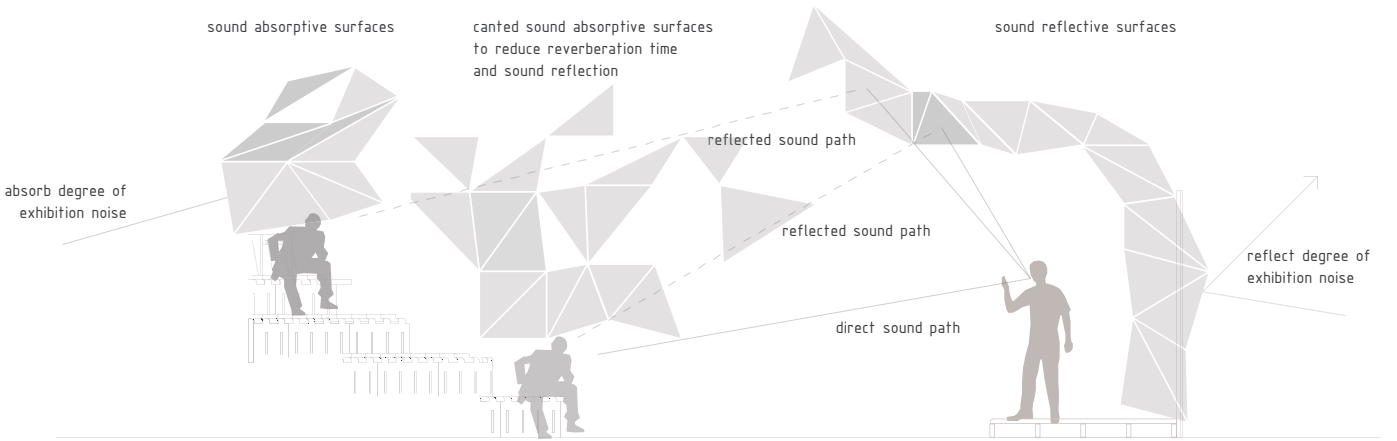
Surfaces:
front: reflective plywood
back: 85% absorptive plywood
left: 40/60 mixture between 30% and 70% absorptive plywood
right: 40/60 mixture between 30% and 70%
above stage: reflective plywood
ceiling: concrete coffered slab
floor: carpet on plywood substrate
pavilion: reflective plywood with upholstered seating

Calculated reverberation time: 1.17 second

The calculated time is slightly higher than recommended (acoustics.com 2009) but still suitable for the application.

The NC can also be managed partially by reflecting the exhibition noise external to the stage (reflective plywood) and absorbing the noise exterior to the seating pavilion (absorptive felt).

Pavilion acoustic diagram:



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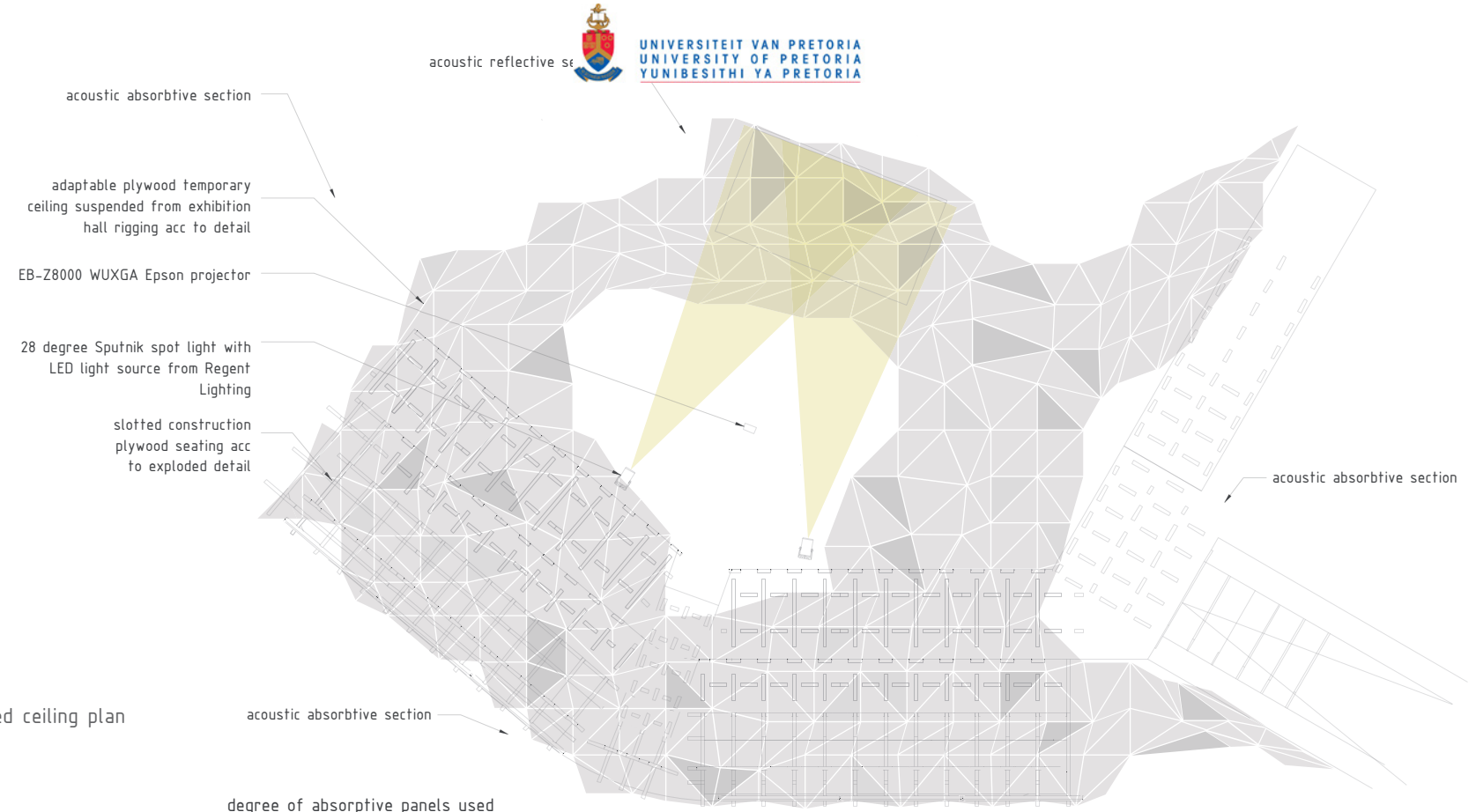
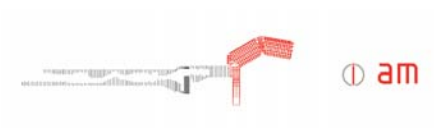


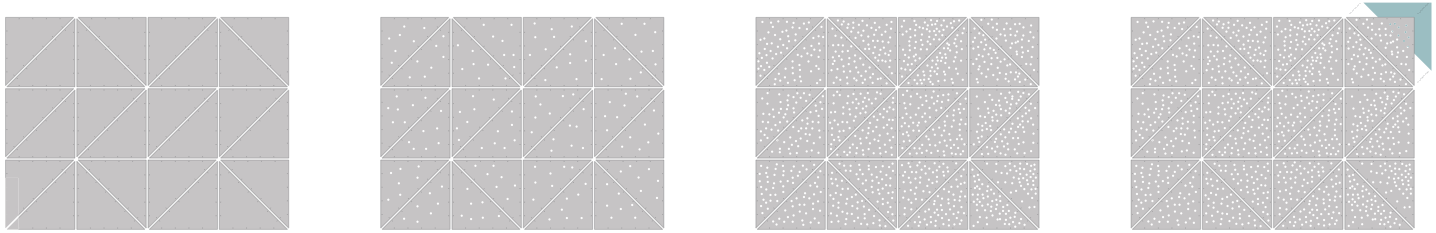
Reflected ceiling plan

degree of absorptive panels used to be determined on site prior to each event when Noise Criteria (NC) level has been established

white felt adhered to back of perforated panel to increase sound absorption

Acoustic screen components:





acoustic reflective

30% acoustic absorptive

70% acoustic absorptive

85% acoustic absorptive

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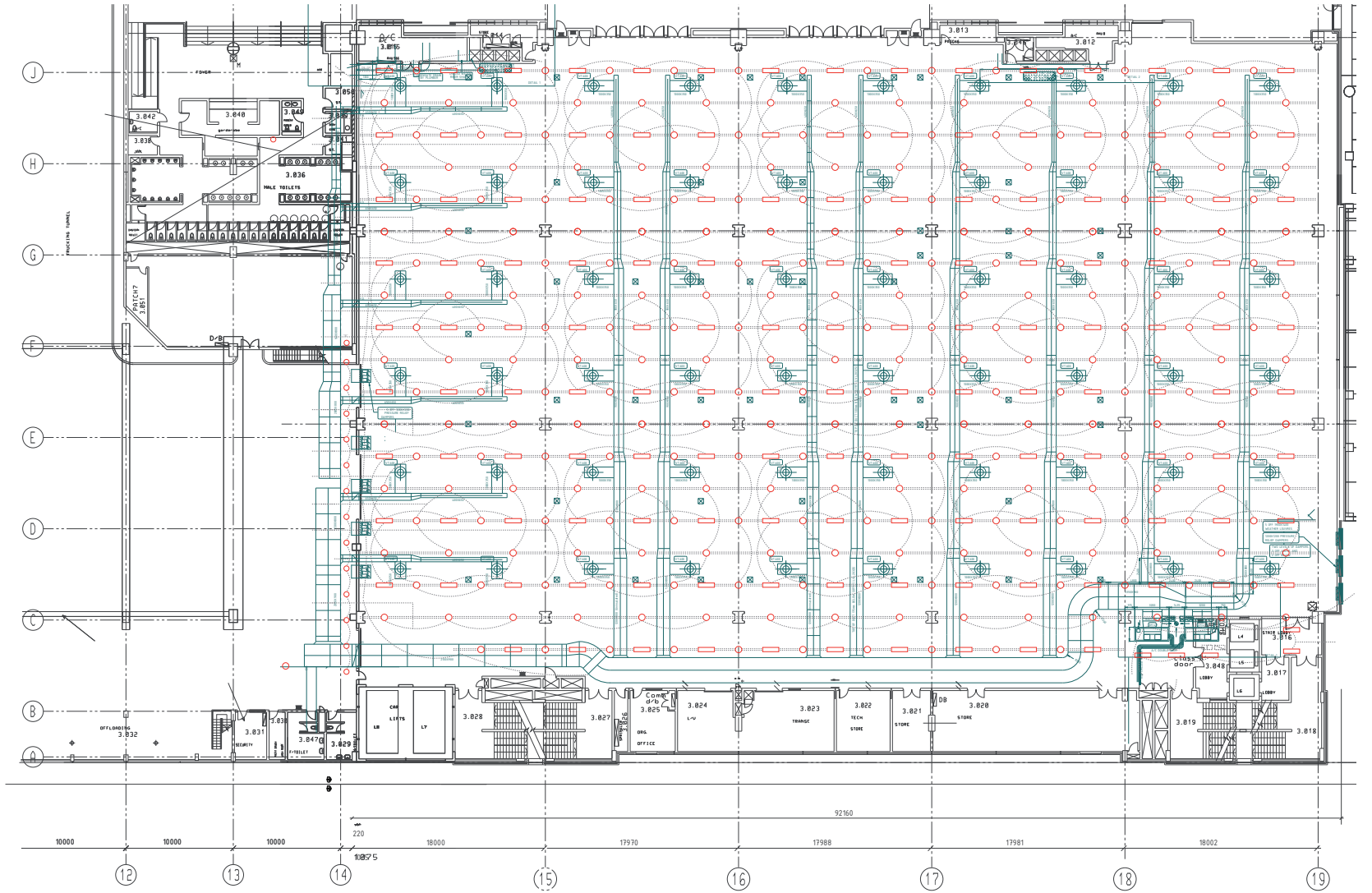
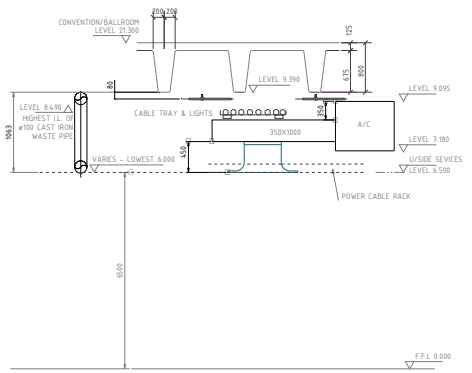
7.7 EXISTING SERVICES IN EXHIBITION 1, SCC





Typical section through coffer slab Exhibition 1, SCC

Reflected ceiling plan: existing lighting and ducting at Exhibition 1, SCC

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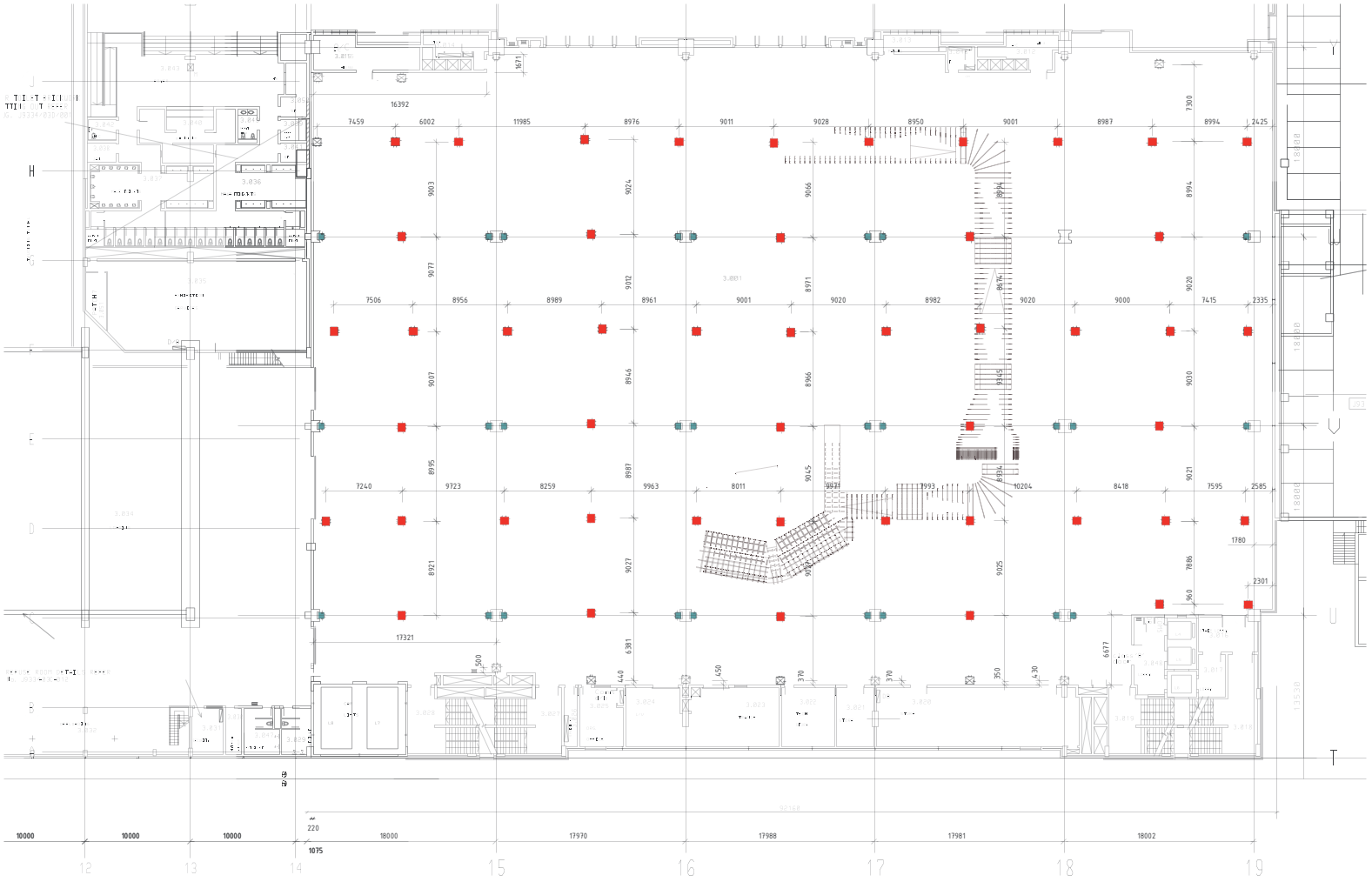


Electrical service points at Exhibition 1, Sandton Convention Centre with preferred installation layout

floor access panel

column access panel

7.8 ELECTRICAL CONSIDERATIONS AND DESIGN

The travelling nature of the exhibition would require the installation to adapt to the electrical supply of different countries.

International power supply can be categorised into two main groups (Global Electric Directory 2011) namely 50 hertz or 115V (110-130V) and 60 hertz or 230V (220-230V). To accommodate this, a voltage input switch is used along with a distribution board to control the electrical flow and protect the installation and users. Various plug types would be part of the travel kit to allow the adaptation between countries.

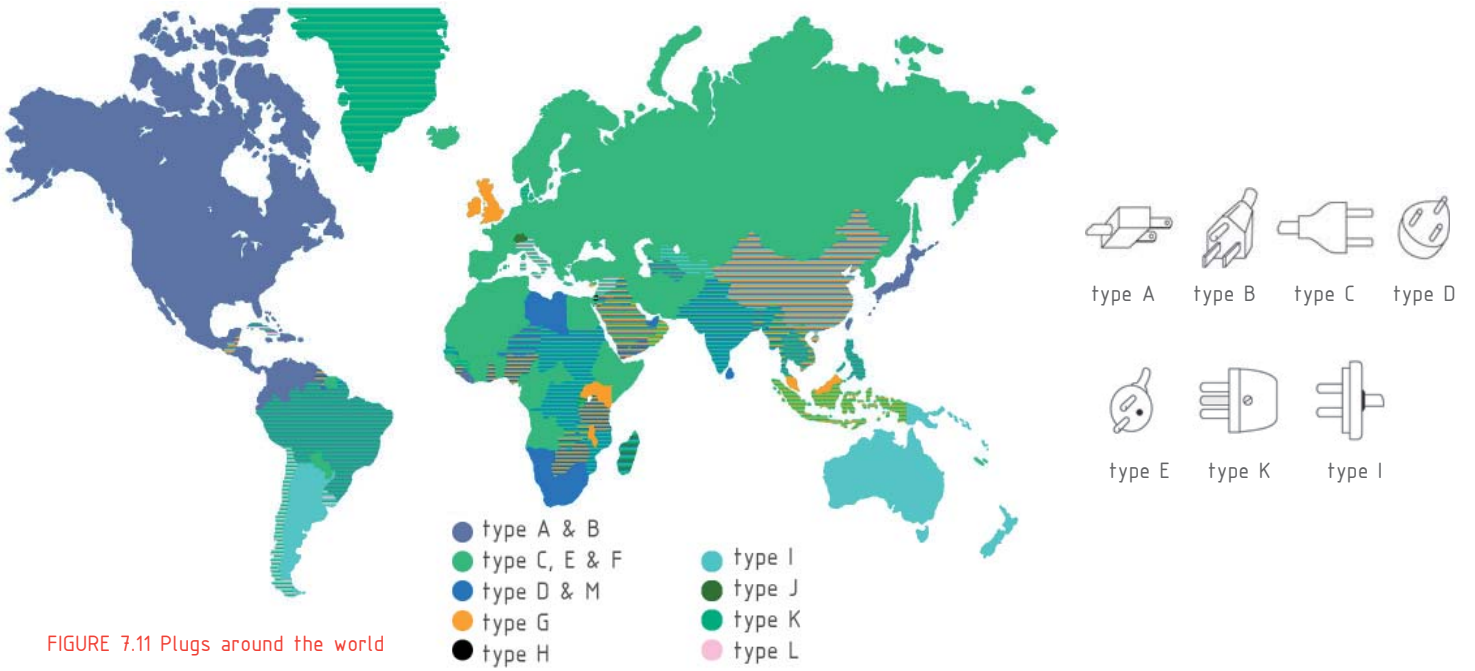
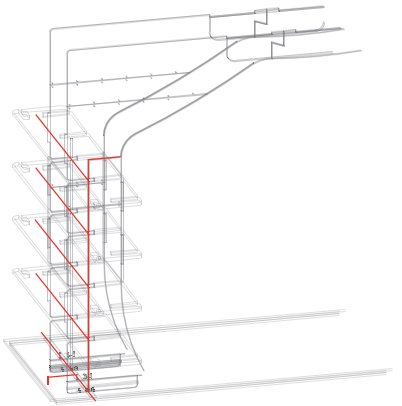


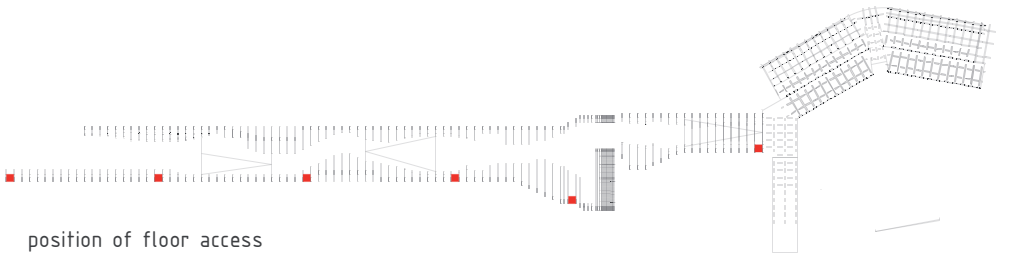
FIGURE 7.11 Plugs around the world

TABLE 7.1 Possible countries to be visited during IFI Interiors Biennale 2013. Original table (Global Electric Directory 2011) edited by author

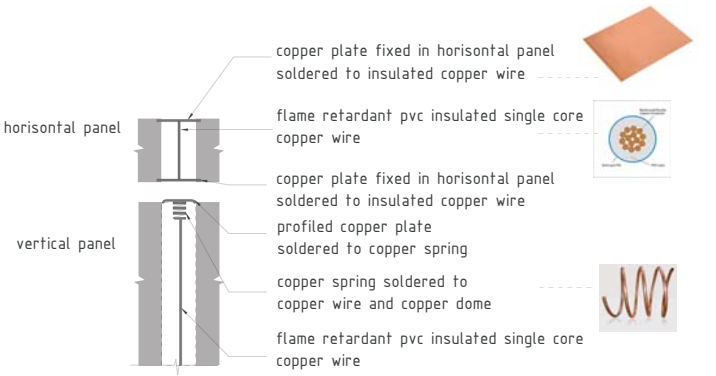
Country	Voltage	Frequency	Plug type
Australia	240 V	50 Hz	I
Canada	120 V	60 Hz	A & B
China, People's Republic	220 V	50 Hz	A, I, G
Egypt	220 V	50 Hz	C
Finland	230 V	50 Hz	C & F
France	230 V	50 Hz	E
Germany	230 V	50 Hz	C & F
Greece	220 V	50 Hz	C, D, E & F
Hong Kong	220 V	50 Hz	G, M
India	230 V	50 Hz	C & D
Italy	230 V	50 Hz	C, F & L
Japan	100 V	50/60 Hz	A, B
Mexico	127 V	60 Hz	A & B
New Zealand	230 V	50 Hz	I
South Africa	220/230 V	50 Hz	M
Spain	230 V	50 Hz	C & F
Taiwan	110 V	60 Hz	A, B
United Arab Emirates	220 V	50 Hz	G
United Kingdom	230 V	50 Hz	G
United States of America	120 V	60 Hz	A & B



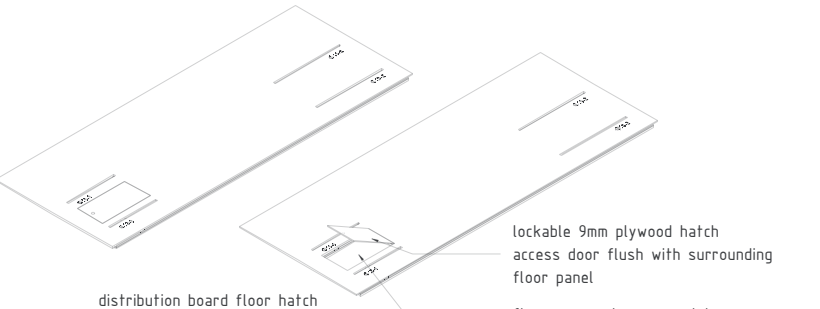
power supply from exhibition host
directed from floor service points
to installation distribution boards.
From there it is distributed to groups
of four vertical panels



position of floor access
panels within installation
not to scale



electrical ducting in plywood panel detail



distribution board floor hatch
not to scale

Power distribution diagram:

power supply from exhibition host → single phase distribution box → AC-DC converter with input voltage switch and replaceable fuse → distributed to systems of four vertical panels

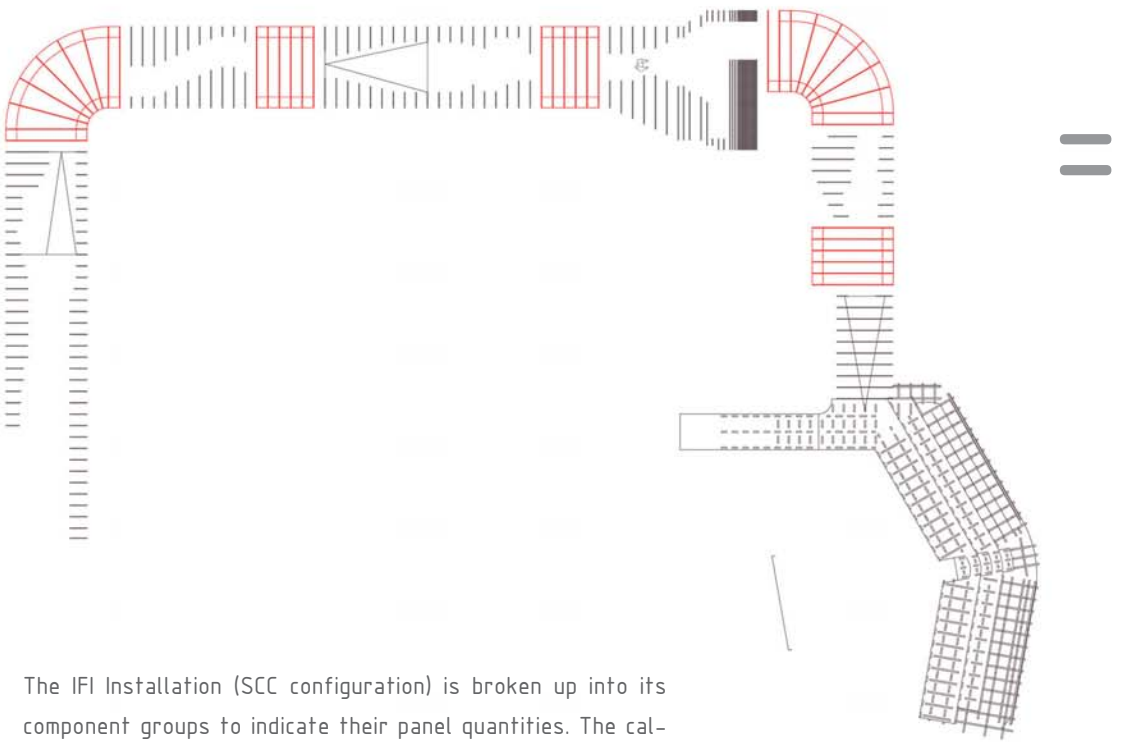
single-phase distribution box, branched into three single-phase outputs. The distribution box to be fixed to the installation plate by screws, max. ø 6 mm, two holes in the middle 75 mm ctc

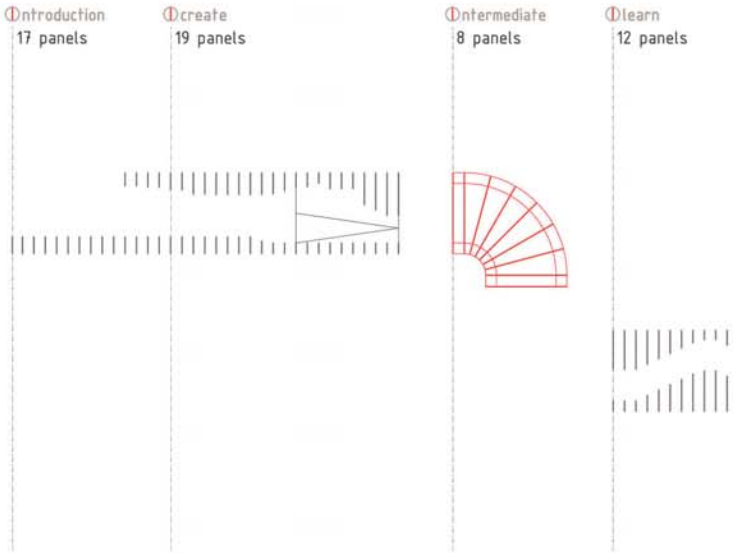
AC-DC converter

LED's use Direct Current (DC) electrical supply.

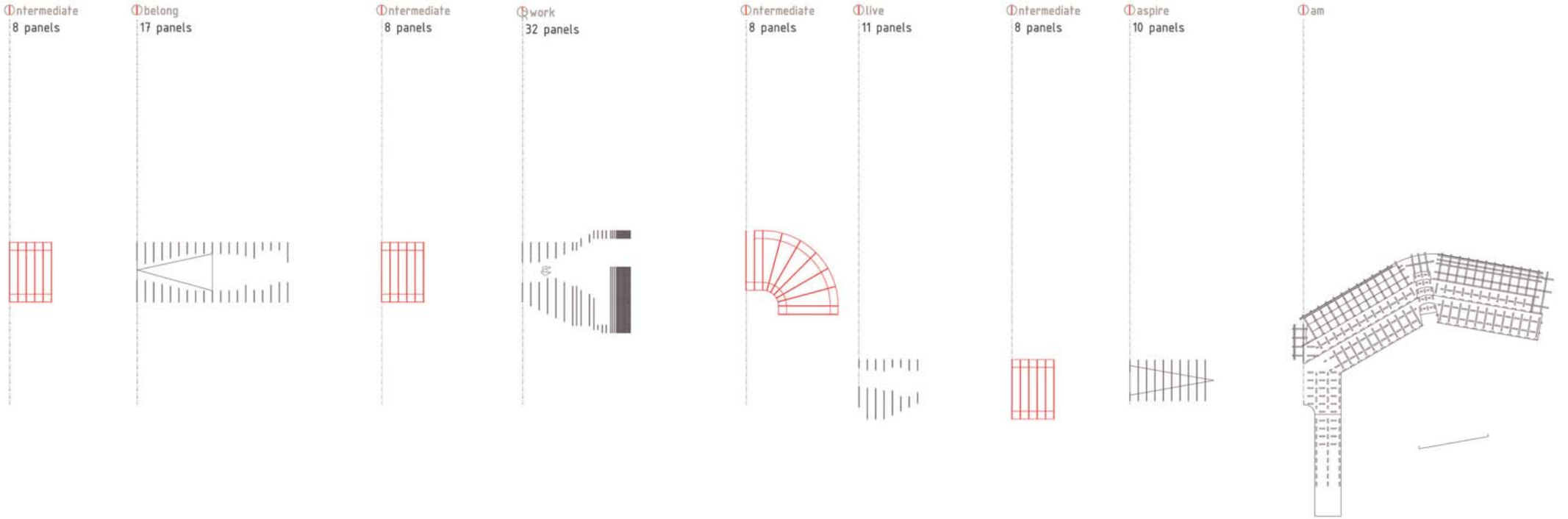
input voltage switch

Fuses are overcurrent protective devices that contain a calibrated current-carrying element which melts and opens under specified overcurrent conditions. Fuses can be used for a variety of overcurrent and overload applications (Automation Direct 2011).





The IFI Installation (SCC configuration) is broken up into its component groups to indicate their panel quantities. The calculated panel number together with additional intermediate sections and the acoustic screen would occupy three 20-foot containers (based on container exploration in Chapter 6).


Intermediate
8 panels
belong
17 panels
Intermediate
8 panels
work
32 panels
Intermediate
8 panels
live
11 panels
Intermediate
8 panels
aspire
10 panels
am

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7.9 POPULATION AND THERMAL COMFORT

Population of IFI Installation

Typical IFI installation length: 68.5m
Projected number of visitors per day: 11 thousand (100% Design London 2010)
Trading hours: 9am-19pm
10hours= 600min/day
Movement past any given point in installation:
11000/600= 18.3 people per minute
Walking speed at an exhibition is approximately 1m/s (Envisage 2010).

If walk through median time is 3min:
18.3x3mins=55

Population in exhibition: 55 people at a time
more than 1m per person at given time

Thermal Comfort

The dedicated exhibition venue provides a thermally comfortable space. The comfort range within the IFI Interiors Installation could however be influenced by several physical factors (Hausladen & Tichelmann 2010:4):

- interior air temperature
- average temperature of enclosing surfaces
- temperature distribution
- movements of the air
- moisture in the air

The above factors have a close, mutually influential relationship with the factors that are dependent on the people themselves:

- type of clothing
- physical activity
- age, sex, constitution, physical well-being
- food intake
- adaptability
- psychosocial factors
- ethnic influences
- daily and annual rhythms
- length of time in room

Further factors related to the room itself and its use have a substantial effect on the interior climate, too:

- room occupancy
- sources of heat and substances
- temperature distribution within the room
- air change rate
- air management in the room

Specific Factors applicable to IFI Interiors Installation

Room occupancy effect on interior climate

Occupant energy production between sedentary and moderate physical activity=105W/m^2 (Hausladen & Tichelmann 2010:4)

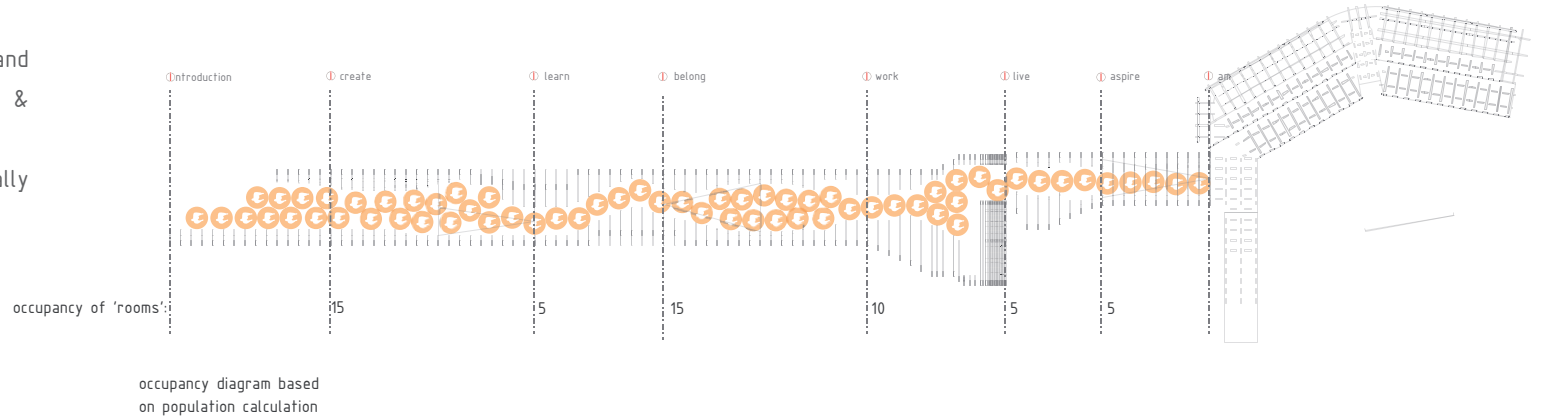
The "normal" BSA (Body Surface Area) is generally taken to be 1.7 m2 (Mosteller 1987)

Average energy production of occupant:

105 W/m^2 x 1.7 m^2= 178.5 W

1 W = 1.00 J/sec

walking speed: seconds per meter: 2.6



occupancy diagram based on population calculation

The following table applies the gathered information to calculate the heat gain in each principle space:

TABLE 7.2 Heat gain through Installation occupancy

space	occupancy	length	time occupied (seconds)	occupants energy (Watt)	occupants energy (Joule)	'room' heat gain from occupants (Celsius)
create	15	9.0 m	23.4 s	2677.5 W	114.4 J	0.06 °C
learn	5	5.7 m	14.8 s	892.5 W	60.3 J	0.03 °C
belong	15	9.0 m	23.4 s	2677.5 W	114.4 J	0.06 °C
work	10	6.2 m	16.1 s	1785 W	110.9 J	0.06 °C
live	5	4.3 m	11.2 s	892.5 W	79.7 J	0.04 °C
aspire	5	4.8 m	12.5 s	892.5 W	71.4 J	0.03 °C

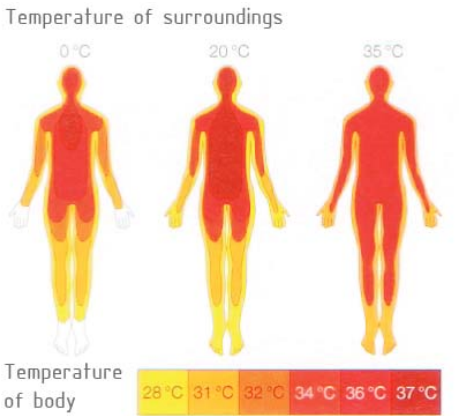


FIGURE 7.12 Body temperature in relation to surrounding temperature

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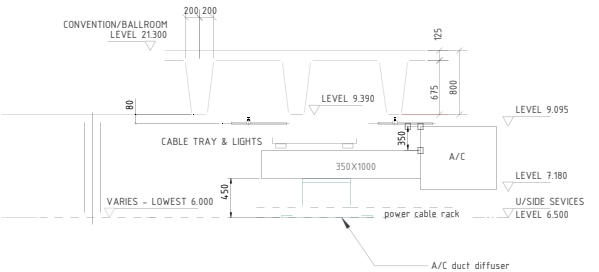
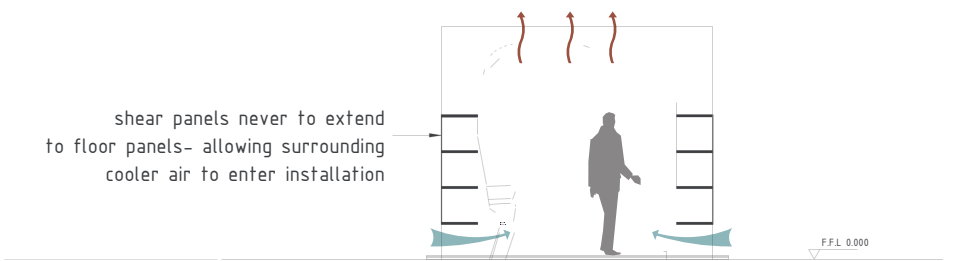
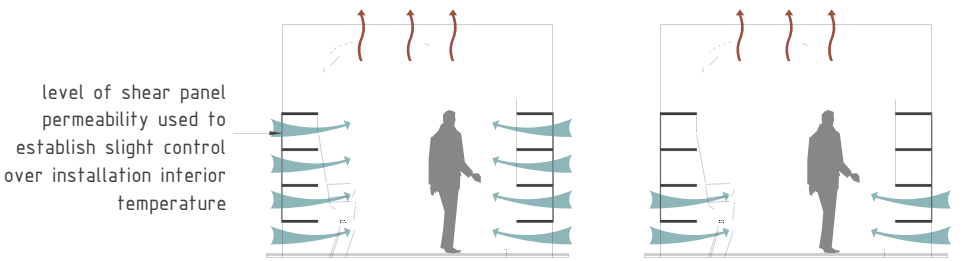


Conclusion

The heat gain from room occupancy is negligible if the length of time in each principle space remains as calculated. In the case that the Installation interior climate becomes uncomfortable the shear panels specified could be allow a higher degree of permeability to allow better movement of air.



typical section showing
air movement through installation



7.10 INSTALLATION EMERGENCY EXITS

The SCC requires an exhibition layout that allows emergency evacuation of all in the venue within five minutes (Annexure B).

To adhere to this requirement two emergency exits should be accommodated in the Installation. During a conversation with Cilliers (2011) a previous employee at Set Squared exhibition designers, it was determined that the bend (45/ 90 deg) intermediate sections could provide a clear 1000mm emergency exit.

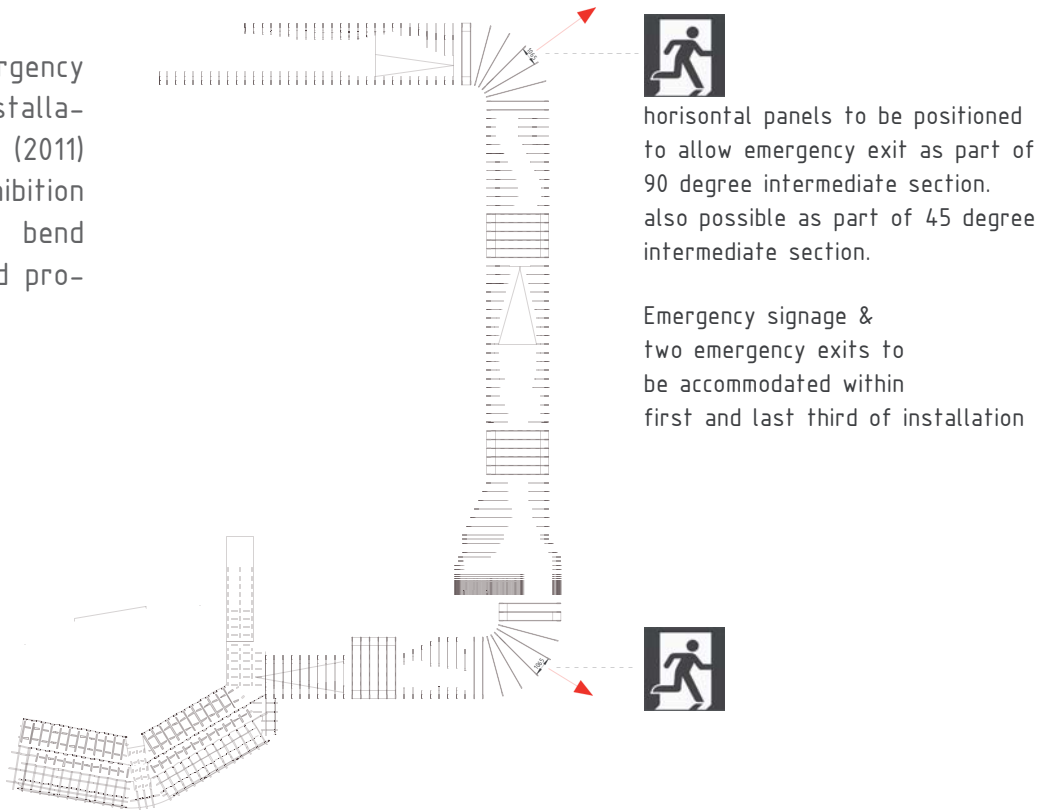


FIGURE 7.13 Emergency signage as part of prototype

CONCLUSION

After a year of considering the interiors identity (as defined by the IFI Interiors Declaration) and a physical manifestation thereof, it became evident that communicating the complexities of the discipline is by no means a simple task.

It has become clear that the Declaration is a living document, that the word 'declaration' in this instance is defined in open terms. It does not represent an autocratic or fixed statement, but rather a first draft that can mature and adapt through further clarifications and developments in the discipline.

As the IFI Interiors Biennale 2013 is an expression of this document, the design thereof should be seen as an initial proposal that can evolve in conjunction with the Interiors Declaration.

Visiting local design exhibitions through the course of the year confirmed the shortcomings and opportunities of the interiors exhibition practice. It was found that applying the Declaration's core principles to the design of both the installation's sculpted narrative (volumetric experience) and its kit of parts (practical resolution) resulted in a possible platform to advocate the profession.

Design for disassembly and the associated use of prefabricated components and temporary joints could present promising alternatives to more permanent interior construction methods. This approach reacts upon the short lifespan related to interior building.

Limited economic- and environmental resources will encourage more interior construction practices to design for disassembly.

In conclusion, it is recommended that the design proposal be evaluated by the client and an appointed curator to establish further limitations and opportunities.

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ANNEXURE A, see CAAN

ANNEXURE B, see SANDTON Convention Centre

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ANNEXURE A:

Dear Sariena,

The biennale is being articulated and planned as we speak. Unfortunately, at this moment we do not have any developed information to share. However, we are certain that it will be designed to manifest (for physical experience) the IFI Interiors Declaration. Our work together is to deepen, strengthen and clarify what the impact and potential of Interiors and the built environment.

I would, therefore, like to suggest that you consider experimenting, exploring and conceptualizing the translation of the qualities of the Declaration into sculpted volumes.

I hope this helps.

I wish you much success with your endeavors. Please keep us informed.

Thank you and kind regards,

Shashi

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ANNEXURE B:

Sandton Convention Centre Interim Exhibitor Handbook

Rules, Safety & Security Requirements

RULES OF THE EXHIBITION

Aisle Encroachment
Disaster Management rules and fire regulations at all conferences and exhibition venues require that all aisles and access to fire exit doors are kept free at all times. Exhibitors are required to take adequate space to accommodate their full display and no encroachment into the aisles is permitted. Should any item or structure be placed or protrude into the designated aisle space, the organisers and/or the venue management reserves the right to move or to have removed, the said item without any liability for loss or damage thereto.

Alcohol
The venue is a fully licensed venue and alcohol may not be brought onto the premises. A special permit is required for promotional and sponsorship alcohol and a corkage fee apply. The venue requires advance notification of such requests and the decision to permit promotional alcohol or sponsorship beverages is at the discretion of venue management. Alcohol may only be served to people over the age of 18 (eighteen).

Behaviour
The exhibiting company undertakes personal responsibility for the behaviour of any person(s) deemed to be staff, suppliers, sub-contractors and/or service providers in their employ whilst on the premises. The exhibiting company also undertakes to ensure that no unacceptable behaviour by any such person, including excessive consumption of alcohol, playing of loud music, use of abusive language or lack of respect for the building, its infrastructure and personnel, occurs whilst on the venue premises.

Brochure Distribution
No brochures will be allowed to be distributed from any area within the exhibition other than your exhibition stand.

Catering
The venue is the exclusive supplier of food and beverage to all exhibitors. No beverages may be brought into the venue without the express approval from the venue in writing. Exhibitors wishing to provide give-away samples of products are required to forward all relevant information, at least 7 (seven) days prior to the event, for approval by the venue management. However, these must be limited to 56ml of beverage and may only be distributed within the exhibition hall. The venue provides a service whereby exhibitors may order food platters and beverages for their stands.
Certificates Required
The following certificates are required:

- An Electrical Certificate of Compliance (C.O.C), for all temporary electrical installations, issued by a suitable qualified electrician registered and a member of the Electrical Control Board (ECB), with said valid certificate issued by the ECB. Individual stand C.O.C.'s are required where reticulation has been added in addition to the original installation.
- A Structural Certificate and a Rigging Certificate issued by a suitably qualified and competent person, after inspection of same confirming the structure / rigging is safe for the intended use.
- A Certificate issued by a recognised service provider, confirming the flammable material is of a fire retardant material or has been treated with a recognised fire retardant substance and indicates the heat specification.
- A Certificate of fitness issued by the Johannesburg Emergency Management Services (JHB EMS) before the commencement of any event.
- A permit for all pyrotechnics issued by the SAPS Explosive Unit which must be supported by the JHB EMS approval.

Cooking and Sampling
Any requirement for cooking at a stand must be communicated in advance to the organisers, giving all the relevant details. Sampling outside of the exhibition space will not be allowed. Should any of theses activities interfere with the normal traffic of neighbouring exhibition stands, the organisers will have no alternative but to request that sampling is stopped with immediate effect.

The following should be noted:

- Cooking, product demonstrations and sampling will only be permitted where prior approval has been granted in writing by the organisers and venue management.
- Solid food portions should be no larger than "bite-size" portions – 85g of food on a toothpick
- Beverage tasting must be in "tasting cups" – 20ml of beverage
- Bottles will be subject to a negotiated corkage fee
- Should samplers interfere with the normal traffic of neighbouring exhibition stands, the organisers will have no alternative but to request that the

sampling be terminated
- The exhibitor is to supply large plastic rubbish bins including a supply of plastic bags

Covered Stands
Covered stands are not permitted unless detailed drawings are submitted and a certificate of approval is given from the Johannesburg Emergency Management Services (JHB EMS). A copy of the above is to be provided at least thirty (30) days prior to the event for approval by the organisers and the JHB EMS.

Damage
The organisers appreciate that exhibitors need to decorate their stands by means of painting, welding, angle grinding, cutting timber, wallpapering etc. Exhibitors should note however that this is not permitted inside the exhibition hall and a specific area will be demarcated in the marshalling yard for this purpose.
A Hot Work Permit is required for all hot work, issued by the event safety manager.

Exhibitors are responsible for the cost of making good and/or replacing damage to the premises, whether caused by themselves, their agents, contractors, sub-contractors or by any person(s) employed or engaged on their behalf. Any exhibitor found damaging walls, carpets and/or any structure on the venue property will be charged with the replacement value of such items.

- Reasonable precautions must be taken when constructing or working on a stand to ensure that no damage is caused to the floor.
- Crates, exhibit panels and pallets must at all times be kept away from walls and/or pillars.
- No attachment, fitting or detachment is to be made to the internal/external walls, floors, ceiling or pillars of the venue, nor may any items be suspended from the overhead structure without the prior knowledge and written consent from the organisers and the venue.
- Nails, screws or other devices may not be driven into any part of the building.
- No painting (by brush, roller or spray) is permitted anywhere within the hall and exhibitions.
- Due to fire regulations, the storage of paint on-site is prohibited.

Firearms
The venue is a strictly weapon-free venue and the use of any weapon is not permitted. Exhibitors intending on displaying firearms or weapons, must apply to the Firearm Licensing Department to obtain a licence. No personal firearms may be carried in the venue during the show period.

Neon
All neon signage on exhibition stands needs to be approved with the organiser and a fire extinguisher and visible Fireman's switch is required that is within easy reach.

Signage
No emergency signage is to be hidden by any means.

Smoking
Smoking is not permitted within the Sandton Convention Centre. Smokers may make use of the following designated smoking areas:
- Outside the Main Entrance, Maude Street
- Off-loading Areas, Maude Street and Alice Lane (staff only)
- Boardroom Terrace, Convention Level and Terrace Room Terrace, Convention Level
- Committee Room Terrace, Committee Room Level as well as the Balcony, Convention Level

Walls in Exhibition Halls
Under no circumstances will any exhibitors be allowed to lean items against the walls. Any damage or dirt on the walls will result in the Sandton Convention Centre (SCC) repainting the wall for the offending party's account.

Vehicle Display
Arrangements for the display of motor vehicles should be made with the organisers prior to the event. There is a specific procedure to follow, no deviation from the below will be permitted:
1. Lifts numbers 7 & 8 may be used to access cars into the building provided the weight of the vehicle does not exceed 3,500 kg.
2. Any vehicle to be left in the building must have minimum fuel in the tank (less than a quarter tank).
3. Vehicles must be driven slowly within the building.
4. Drip trays to be supplied by the vehicle exhibitor. Drip trays must be placed underneath the engine/gearbox and the differential (i.e. at least TWO (2) adequately sized drip trays).
5. At least one nine kilogram (9kg) dry chemical powder (DCP) fire extinguisher, supplied by the vehicle exhibitor, must be visibly located at the vehicle at all times.
6. Any damage as result of the above id for the account of the vehicle exhibitor / client.
7. Any vehicle left in the building should be left unlocked, with the keys in the ignition, for the removal in the event of an emergency.

SAFETY AND SECURITY REQUIREMENTS

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INTRODUCTION

The following safety requirements and guidelines have been developed by EXSA and adapted by the SCC in order to inform and regulate the exhibition and event industry on what "best practices" should be used to ensure event / exhibition safety. They have been developed to minimise possible liability, injury, accident or loss of life. The following requirements and guidelines, which take into account items of general health and safety, must be followed when involved in an event or exhibition at the Sandton Convention Centre.

This Policy states legal requirements as well as advice on good safe practice. This is based on the principals of Safety and Fire Safety requirements as contained in:

- SABS Codes
- NFPA Codes
- Fire Services Act, "Act 99 of 1987"
- Johannesburg City By-Laws, Fire Safety Regulations
- Disaster Management Act 57
- Occupational Health and Safety
- National Building Regulations
- Electrical Wiring Cods SANS 10142

Before any work is begun on site, the organiser / exhibitor and their contractor must evaluate any risk that might be caused by the building of a stand or stage works. This will involve looking at probable and possible hazards and dangers and in so doing, the organiser / exhibitor should be able to put in place plans and procedures to limit or nullify the risk. These steps are essentially the reasonable steps that the organiser / exhibitor will take in limiting injury, loss of life, civil liability and public liability.

The Safety and Security Plan
Conduct a risk assessment of the event, since this is a specialised function it is highly recommended a contractor be appointed, with involved persons and services that are competent, experienced and have a good working understanding and working experience of the venue, its emergency safety features and their location within the building. Usually convened at the request of the organiser and may be chaired by the contracted security company.

This is best achieved by means of a well thought out team list of possible and potential threats, risks and situations which may occur and the plans to eliminate or reduce their potential. This is the single most important step to ensure a safe, secure and incident free event. Involved services include: Johannesburg Emergency Management Services (JHB EMS), SAPS, (possibly V.I.P. Protection Unit, Explosives Unit, Dog Unit, Public Protection Unit) Metro Police, Joburg Health Department, contracted Security and Medical Emergency Response Companies and other relevant contractors.

Considering the layout drawing has been submitted and approved by Disaster Management
(Needs to be approved by SCC safety before submission)

A drawing must provide for emergency evacuation of all in the venue within five (5) minutes based on the rate of sixty (60) pax / 1, 800 wide door / minute. (60x5 = 300/exit. E.g. 1, 000 pax / 300 = 3, 33 doors) In this case a minimum of four emergency exits would be adequate, but bear in mind the possibility of exits becoming redundant as a result of the emergency, E.g. fire at an exit/s. We always need a redundancy factor. (We prefer basing the calculation on a three (3) minute evacuation cycle e.g. 60x3 = 180 pax / door, i.e. six (6) exits are required with a redundancy of two (2) doors or thirty three percent (33%))

- Emergency Exit aisles (3, 000 wide) need to line u with emergency exits, in both directions where emergency exits are located on all four boundary walls, to facilitate the quick movement of people from the venue. These aisles also need to facilitate access to fire equipment.
- Typical essential considerations include:
    1. All aisles must be kept clear with unrestricted access at all times, including during build-ups and breakdowns.
    2. All emergency exits must have clear and unrestricted access at all times, including during build-ups and breakdowns.
    3. Access to all fire equipment must be clear and unrestricted at all times, including during build-ups and breakdowns.
    4. Emergency signage must be completely visible at all times.
    5. Special care must be taken when draping to ensure neither emergency signage nor the emergency exits are either hidden / partially hidden or that the drapes impede access to these exits whatsoever.
    6. Adequate and appropriate emergency signage (must be photo-luminous, painted signage is not acceptable) securely fitted (by the organisers contractor) to support existing permanent emergency signage when any structure or any other object is erected which hides or partially hides permanently emergency signage.
    7. Temporary shell scheme fire exits require to be identified by appropriate photo-luminous signage.

Stands, floor coverings, stand security covers, banners / stretch fabric advertising and other materials in use or exhibited need to be fabricated from fire retardant materials or treated to make same fire retardant as possible. Obviously this is not always possible, within reason.
The electrical reticulation must be installed by a qualified and competent electrician certified to provide an Electrical Certificate of Compliance (C.O.C.'s) (or at least under his supervision), which is required for every temporary electrical installation, in this case for the entire exhibition / event. The electrician also needs to inspect and test installations of stands carried out by electricians employed by specialised stand builders / exhibitors, have any non-compliance corrected and issue electrical certificates of compliance (C.O.C.'s) for those specific stands. I.e. He is responsible for the entire electrical installation of the exhibition to the organiser. In order to maintain an acceptable electrical installation standard Mark Palmer of the Gauteng Electrical Inspection Authority is invited on an ad hoc basis to audit various installations on behalf of the Department of Labour.

Rigging must be undertaken by a suitably experienced person who is required to provide a certificate confirming the installation is safe to use (excludes banners, flags and similar). A valid certificate may be requested confirming the inspection and testing of nay hoisting / lifting equipment.

Structures or special stands to be constructed need to have been designed by a structural engineer who will issue a certificate confirming the design and erection thereof in the venue is safe for intended use. Where a roof is fitted special precautions need to be considered as this negates the effectiveness of the installed sprinkler system. E.g. A readily available fire extinguisher (9Kkg Dry Chemical Powder) needs to be provided by the exhibitor at the entrance of the stand and when the show is closed needs to be inspected at regular intervals by security who must be trained and competent in extinguishing fires, alternatively operational smoke detectors need to be installed.

The above structural requirement is also applicable is also applicable to stages five hundred millimetres (500mm) and higher. N.B. stages and other structures are to be used for their designed and intended use only. Failure to comply with this condition may result in a disaster. E.g. A 1, 500 wide x 1, 000 high model ramp used as a general audience dance area after a fashion show.

- Hand rails are necessary where required.
- Always consider floor loadings.
- Always consider allowable loads from hanging points and hanging rails. These are load certified.
- Absolute control must be maintained on the volume of combustible / flammable / non-explosive (material permitted) material allowed in the venue for obvious reasons. Including but not limited to: oil based paint and aerosol cans of paint; solvents such as thinners, turpentine, paraffin, fuel; polystyrene; P.V.C.; bales of hay; gum poles; dried grass decoration; newspapers (used as table cloths); backdrops; hessian; plastic; packing materials and so on.

A Disaster Management Permit is required for all Naked Flames in a Venue
Absolute control needs to be maintained on naked flames and the method / means of supporting same. (Often placed on top-heavy arrangements, which are precariously balanced at the best of times and susceptible to being knocked or bumped over.) E.g. Candles, candles on flower arrangements or stands, candles fitted inside paraffin lamps and paraffin lamps. Flame throwing and fire acts are not permitted.

A SAPS issued permit is requires for all pyrotechnic events. The application for same submitted by a suitably qualified and experienced business / operator needs to include a letter from the venue allowing same to take place at the venue. A suitable venue procedure controlling same needs to be strictly applied.

Confirmation of public liability insurance is essential from all the outsourced services / contracted services etc. Ensure all required indemnity forms are signed, sealed and delivered. (All contractors, exhibitors and other service providers.)
A certificate is required for all draping confirming it has been manufactured from flame retardant material or has been treated to ensure the same flame retardant characteristics as if it had been manufactured from flame retardant material. Considering draping may be washed from time to time and as the sprayed on flame retardant material is washed out, it is prudent to check that draping is actually flame retardant by cutting a sample and trying to light same under controlled conditions. (We are currently in the process of arranging a service, through one of our outsourced partners, to have a fire retardant spray service available on site should the draping not be certified or fail the fire test. The cost of which is for the organisers account. Cleaning of overspray is for the account of the exhibitor / event organiser.)

Pre-empting the Safety at Sports and Recreational Events Sports Bill, and from the experience of need, it is essential to have a fully equipped paramedic on site during large events.

Standards for Double Storey and Flammable Material Exhibits / Stands

1. All plans that need to be approved need to be accompanied by the full layout depicting where the stand is on the overall floor plan. The floor plan

should preferably be on an A3 size page.

2. An Engineering Certificate of Safety must be obtained once a double storey stand, or other than a standard shell scheme, has been erected / completed. (Displayed at the stand)
3. There must be at least one 9kg (nine kilogram) Dry Chemical Powder fire extinguisher in each level of the said stand. (Arranged by the exhibitor / organiser)
4. A security officer is to pass and check the stands at regular intervals after hours. (At least every half an hour)
5. Operational smoke detectors need to be provided under all ceilings.

Fire Safety Requirements for All Events – Emergency Management Services

These include the local Emergency Management Services but also include requirements such as environmental health impact and local Disaster Management planning and requirements. Your local representatives will expect you to have implemented effective planning with concern to preventing through identifying, eliminating and controlling hazards and risks.

The items of major concern are:

1. Adequate entrances and exits for emergency vehicles.
2. Parking areas for private and exhibitor / contractor vehicles. This must be addressed to minimise the risk of fire spread.
3. Adequate means and numbers of escape routes to evacuate premises to a safe area for people present.
4. Escape doors and all exits must be clearly indicated with photo-luminescent signage, and doors to have approved locking devices. (As approved by the Local Authority) Escape routes to be unobstructed at all times. People should be able to walk safely along clearly recognisable routes, by own unaided effort. Doors to open in direction of travel and maintained in satisfactory condition.
5. Fire equipment to be clearly indicated, mounted and serviced annually. A 2m (two metre) clearance to be kept around fire equipment and to be accessible at all times. All fire equipment to conform to SABS standards.
6. Emergency Lighting: In addition to the normal lighting arrangements, emergency lighting must be provided as determined by the fire safety representative. The emergency lighting supply should come from a source of electricity independent of normal lighting to provide lighting to Exit signs located around the venue for directional purposes and located above the final exit doors. Emergency lighting to give sufficient light for at least sixty (60) minutes. All parts of the venue to which people have access should be provided with normal and emergency lighting capable of giving sufficient light for people to leave safely as determined by the risk assessment.
7. Manually activated audible alarm systems to be in accordance with S.A.B.S. 0139.
8. Electrical certificate of all electrical work completed, to be handed to the SCC Event Coordinator for the event, including temporary and permanent installations.
9. Electrical cabling to be covered with an approved ducting method or below ground level. Overhead cabling to be at least 2, 4m (two point four metres) high.
10. Structural engineering to certify all structures including marquees, stages, stands, grandstands, screens and suspended lights or sound equipment.
11. All combustible wood and additional material to be used for decor such as draping, curtains, partitions and floor, wall or roof coverings where required to be treated with a flame retardant. A certificate of proof to be presented to the SCC Events Coordinator.
12. Curtains across exit doors must be arranged so as not to trail on the floor, they should be open from the centre and not obstruct either the doorway or signage.
13. The Local Authority "Fire Safety" regulations may limit the amount of coverings used for decor and prohibit their use in certain locations or insist on additional fire protection measures.
14. Sprinkler Systems: The performance of sprinkler systems may not be impeded in any way. At any event where a temporary roof structure is erected inside the existing building, the roof area may not exceed $2m^2$ (two metres squared). Where the roof exceeds this amount, under-roof protection to be supplied to the structure.
15. Open Flames: Written permission must be obtained from the Fire Safety Department of the Local Authority through the SCC.
16. Vehicles: A maximum of 10l (ten litres) of fuel (¼ tank) is allowed in the fuel tank of a vehicle in a display area. The battery of such vehicle must be disconnected.
17. Shows and Exhibitions: Aisle width to be at least 3m (three metres) and no trading to take place in this aisle space.
18. Braai Areas: These are not permitted.
19. Liquid Petroleum Gas: Indoors a maximum of 1x 19kg (nineteen kilogram) cylinder may be used in the

building at any given time.

If barriers or collapsible fencing are used the Fire Safety Official should be consulted as to the requirements.

Additional Information Pertaining to Inspection and Notifications

JHB EMS is to be notified prior to build-up of an event in case of additional requirements who may conduct inspections prior to and during the event.

Services available:

- Fire Safety Official
- Paramedics
- Medics
- Fire Engine and Crew

JNB EMS must be notified of all J.O.C. meetings. Please contact the Event Coordinator.

Some events are larger and more complex than others. All are covered by legal requirements, but JHB EMS may have additional requirements.

Emergency Procedures / Fire Regulations

Event Organisers / Exhibitors must ensure that their staff and contractors have been adequately briefed on the SCC emergency procedures, as well as on the location of the fire-fighting equipment and emergency exits at the occupied venue. The following steps must be adhered to:

1. Immediately report an incident of concern to the organiser.
2. Exhibitors or contractors must refrain from touching any objects of concern and from removing exhibits from the venue.
3. Do not panic.
4. Evacuation of the venue will be announced over the venue's PA system.
5. Organisers, Contractors, Event Staff and Exhibitors are requested to point out the direction of emergency exits to other staff members and visitors in your immediate vicinity.
6. Fire escapes are situated in intervals throughout the building and are easily accessible.
7. In the event of an emergency at the venue, the following services will be provided:
    - Evacuation Lighting
    - Essential Ventilation
    - Computer Systems for building control
    - Evacuation Security Systems
    - Fully trained evacuation team
    - Pressurisation of fire escape stairwells
    - Specialised Emergency Services

Please note that all the venue lifts will stop on ground floor and escalators will stop operating.

General Fire Safety Aspects

The following aspects regarding fire safety are required to be reported to the Organiser prior to the start of a build-up of an event / exhibition. This must be done in order to allow for liaison with and approval by the Fire & Emergency Services, Metro Police and South African Police Services where applicable. This arrangement is to ensure compliance with all Municipal By-Laws and Regulations regarding fire safety.

- All plans for stage sets and designs, such as heights of over 500 mm staging, multi-storey, wooden structures, bridges, flammable material and inserts of Polly urethane, must be forwarded to the Organiser and venue.
- All flammable and combustible materials and components will be declared for approval and treated with a flame retardant. A certificate must be obtained and a copy of the certificate must be handed to the Organiser and venue.
- Any hazardous chemicals of flammable materials to be used within the confines of the venue must be declared. These materials shall be stored in purpose-made safety containers in minimum quantities i.e. no more than 1l (one litre).
- Any flammable construction, building and/or other materials shall be treated with a fire retardant substance and certified as such prior to commencement of construction.
- All emergency exits will be kept clear and unblocked for the duration of show-days. This task must be designated to the Contracted Security Company. All fire exits are to be clearly indicated on the event floor plan.

(SHOULD NO CERTIFICATE OF APPROVAL BE FORTHCOMING, PLEASE NOTE THAT THE JNB EMERGENCY MANAGEMENT SERVICES HAVE THE RIGHT TO FINE TRANSGRESSORS AND HAVE THE MATERIAL REMOVED.)

The SCC Safety Management and the Fire & Emergency Services will conduct an inspection of the exhibition during and on the last day of build-up to ensure compliance and should full compliance with regulations not be adhered to they have the right to hold back on the doors opening for the event or fine transgressors. A certificate of fitness needs to be issued by the JHB EMS before commencement of an event.

A. The SCC's Safety Management will give prior written approval where it is proposed that apparatus involving special risk is to be operated.
B. No fixing, attachment or penetration of any fabric, structure or floors is permitted.
C. The SCC Safety Management and the JHB EMS must give their written approval where any of the following is proposed:
    1. Any material, exhibit or substance that

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is hazardous, noxious, explosive or of an objectionable nature
2. Items that produce fumes, exhaust or smoke
3. Operating machinery and apparatus
4. Use or display of pyrotechnics and lasers
5. Use or display of radioactive materials, flammable liquids, oils and gasses as well as welding or compressed air
6. The use of balloons and public entertainment including amusement displays, live performances and live animals on display

Fire Retardation

A. The Local Council By-Laws are quite specific on fire retardation: NO COMBUSTIBABLE MATERIAL with a high fire rating is displayed at any event. However, if written permission is granted, it must be treated correctly or a low level of combustibility must be attained.
B. Hessian, thatch and straw are regarded as major fire hazards and exhibitors planning to use theses as part of their display will be required to provide a Fire Retardant Certificate indicating that the product has been treated with a fire retarding compound.
C. When material draping is used as part of a set-up or display, please ensure the draping does not come into contact with electrical wiring, fitting and/or globes and drops no lower than 5cm (five centimetres) above the carpeted floor.
D. Combustible materials include items such as: draping / curtaining and backdrops, hay, hessian and thatch etc. Stage, sound and lighting etc, used by the technical contractors is included in this definition.
1. Combustible materials are to be treated with a fire retardant substance as approved by the Fire & Emergency Services and SABS Standards.
2. Certificates from recognised suppliers confirming retardation must be made available and presented on each stand. Mycon, Pyrothec etc.
3. Carpet fire rating as per SANS 10400.

Gas Regulations

1. Only one 19kg gas cylinder is permitted with written approval of the SCC.
2. Any spare cylinders are restricted to a 19kg cylinder and must be stored outside of the building in a lockable facility which is available.
3. A qualified installer (relevant qualification) with the relevant license must install the gas connection and sign off the installation on a Certificate of Compliance.
4. A copy of the relevant contractor's license and Certificate of Compliance must be made available to the Fire and Emergency representative and a copy must be supplied to the SCC's Contracts Services Manager.
5. A 9kg dry powder fire extinguisher must be installed in close proximity to the gas cylinder.
6. Clear signage must be displayed indicating where the gas cylinder has been installed.
7. Clear signage must be displayed indicating where the fire extinguisher has been installed.
8. The gas cylinder must be easily accessible and not locked or blocked. This is in the event of a leak or emergency.
9. All piping must be in good order and have permanent connections with no leaks.
10. The gas cylinder must be disconnected and removed to storage at night or when the stand is not manned.

Final permission can only be granted on site once the above conditions have been inspected. Should the Fire and Emergency Representative or the SCC's Safety Management find any unsafe conditions, this will need to be rectified before final permission is granted.

Safe Working Practices

A. Organisers and contractors need to ensure they are working according to the guidelines and regulations as prescribed by the Occupational Health & Safety Act (OSH).
B. It is required that all contractors and sub-contractors adhere to the Safe Working Practices as set out in the act. Staff and contractors shall be vigilant towards the health and safety issues regarding themselves and others in the area and shall observe the following practices which will be monitored and enforced by the organisers:

1. The understanding of the SCC Fire and Evacuation plan and procedures.
2. The understanding to ensure that aisles leading to emergency exits are kept clear and unobstructed at all times.
3. The use of hard hats when working in hazardous areas or restricting access to dangerous and hazardous areas.
4. The need to wear suitable protective clothing including eye, ear, foot and hand protection, where relevant.
5. The safe use and storage of flammable liquids and substances and to segregate them from waste and other risk areas.
6. Those after use, chemicals and liquids are re-

moved from the venue for safe and proper disposal.

7. Chemicals and liquids may not be disposed of in general refuse areas.
8. Ensuring portable power equipment is used for the purposes intended, with safety guards correctly fitted and used.
9. Ensuring portable electric tools are used with minimum length of trailing leads and not left unattended with a live power supply.
10. That forklifts, cherry pickers and scissor jacks are not used by anyone other than licensed operators.
11. That work areas are maintained free from general waste material that could be hazardous.
12. That proper scaffolding is used during construction where safety features are provided, in acceptance with SA Building Regulation standards, and that tower scaffolding is properly constructed and secured to venue hanging points.

Personal Safety

Harness:

- All personnel that climb above 2m (two metres) from ground level must wear appropriate harnesses and the necessary Fall Protection accessories, Life Lines, Fall Arresters etc.
- All personnel must be trained in the use of personal safety equipment.
- All personnel carrying out work on catwalks and working platforms must wear harnesses.
- The type of harness used must be designed for the type of work being performed.
- Since 1998 the OHSA rules that Body Belts (not full body harnesses) are no longer part of a fall protection system. The only exception to this matter is where the employer can demonstrate that in a specific situation, a Fully Body Harness would interfere with other ascending or descending rigging equipment i.e. climbing up a rope.

Safety Strops:

- The necessary Energy Absorber should be used for all Fall Arrests.
- Lanyards should only be used with pulleys or when personnel use them for hanging beneath a structure, and should have a load bearing of not less than 22kN.

Carabineers:

- All carabineers must comply with International Standards, either European (CE) or American (ANSI), and should have a load bearing of not less than 22kN vertical and 7kN horizontal.
- All carabineers must be either Screw or Twist Lock.
- It is recommended that all carabineers should be steel due to the high levels of attrition (high wear arte) on Aluminium Alloy carabineers.

Fall Arrest:

- A Fall Arrester must be installed whenever personnel climb up vertical objects.
- Fall Arresters must always be rigged in a safe and secure manner, and must be serviced once a year.
- Horizontal life lines must be rigged in a safe and secure manner, and should be made of a flexible or dynamic material.

Hard Hats:

- Hard hats must be worn by everyone at all times where there is any risk of objects falling from the roof or grid, while nay activities are taking place more than 2m (two metres) above ground or stage level.

Structural Stability

A. The structure of the set or stage shall safely sustain the combined dead and imposed loads without any deflection or deformation, which will impair stability.
B. All materials used in construction shall be:
- Non-combustible material
- Flame resistant timber of any thickness
- Flame resistant plastic and boarding
- Chipboard or block board more than 18mm (eighteen millimetres) thick.

C. All materials used for decorative finishes to the set or stage shall be:
- Able to pass a test of flammability or for surface spread of flame
- Be fixed taut or in tight pleats to a solid backing
- Be secured at floor level
- Shall not ignite when subjected to a flame for 10 (ten) seconds.

D. Stages / sets intended for disabled persons use or with a height equal or greater than 500mm (five hundred millimetres) shall be fitted with hand railings in the entirety.
E. Any paint used shall be water based.
F. Spray-painting at the SCC is not permitted.
G. Cavities and spaces around the venue shall not be used for storage of empty crates, cartons and boxes or packing materials.

Electrical Procedures

Electrical installations must be of a nature that will ensure the safety in the use of electricity and must be carried out in a competent manner. Where a fault becomes apparent, the equipment must not be used until the fault has been rectified. All electrical equipment brought into the SCC must comply with the South African Electrical Regulations

and the Occupational Health and Safety Act (85 of 1983) as amended by the Occupational Health and Safety Act (181 of 1983) and the Labour Relations Act (66 of 1985). Should this not be the case, equipment will be immediately removed from the premises at the organisers, contractors or exhibitors expense and charges for any damage caused by the faulty equipment will apply.

Due to the strict regulations governing Electrical Standards, the following regulations have been introduced:

1. No Twinflex is permitted.
2. No 15 amp double adapters are permitted. Rather use a SABS approves multi-socket outlet.
3. All purpose built stand shell scheme / equipment are to be undertaken by registered Wiremen only and must comply with South African Bureau Standards and Occupational Health and Safety Acts i.e. Certificate of Compliance to be furnished to the Exhibition Services Manager.
4. Only SABS approved multi-socket or multi-extender plugs or cable may be utilised.
5. All wiring systems must be insulated flexible cables with copper conductors that have a minimum cross section area of 2,5mm (two point five millimetres) e.g. 3 core cable.
6. Open Wiring – Insulated single core cables (colour coded differentiating between Live/Neutral/ Earth), will only be accepted at a minimum height of 2,4m (two point four metres) and not be subjected to mechanical damage. Electrical wiring across walkways / passages using insulated flexible cables e.g. 3 core cable will only be accepted at a minimum height of 2,5m (two point five metres). Ant metallic structure with electronics affixed thereto must be earthed to a distribution board.
7. No joints to trailing cable will be accepted.
8. Multiple wiring will not be permitted to terminate to a single plug top 15 amp (SA 3 pin round plug).
9. Lighting is to be looped from fitting to fitting with all terminations being secured and concealed.
10. Should any termination points be necessary on a wire-way, they need to be insulated and of a mechanical nature i.e. strip connector (no twisting of wires).
11. Stands constructed of a conductive material will be required to be double earthed to the venue's earthing system.
12. 15 Amps should be allocated per exhibition stand to cater for most exhibition requirements. However, should it be necessary to in laser printers, heating and refrigeration equipment, additional electricity supply will be necessary. Overload usage may cause the incoming power supply to trip excessively. Severe trips may take hours to rectify, thereby causing inconvenience to all exhibitors.
13. Transformers are to be mounted on the structure, walls and/or systems not placed directly onto the carpeted floor.
14. Each electrical supply provided is intended for one item of equipment or machine on display. Multi-point socket outlets are not permitted as an overload may be caused, leading to a trip in the incoming power supply.
15. No electrical installation and/or fitting may be suspended from the ceiling of nay venue, exhibition hall or fixed to any part of the building structure without the prior approval of the organisers and the SCC.
16. 16 Amp, 32 Am, 62 Amp and 125 Amp 3-phase power including earth and neutral is available on request. Any power requirements in excess of 63 Amps need to be discussed with the Contract Services Manager.
17. Neon Lighting – This lighting may not be installed without prior arrangements and written authorisation from the Contract Services Manager.
18. Fluorescent Fittings – must be earthed.
19. All electrical fittings and equipment must be SABS approved e.g. Transformers, distribution boards, plugs etc.
20. All cables of any nature that run across doorways, fire exits, floors etc. must be suitably covered or fitted into cable tracks so as not to pose any trip hazard. Should such situations exist then the SCC will not permit the opening of doors until the situation is remedied.

Rigging

A well trained person, with the necessary experience, must complete all rigging in a safe and secure manner.

Rigging Gear:

- All rigging gear – steel, spanset, shackles, O-rings, deck chains and motor hoist – must be inspected before use.
- All rigging gear must have the necessary valid test certificate according to the Occupation Health and Safety Act.
- All rigging gear must only be used in the application for which it was designed.
- All lifting gear must clearly display its Safe Working Load. (SWL)
- All rigging must have its own unique serial or ID number.
- All rigging gear must be certified, inspected and load tested by a competent person according to the Manufactures specifications and the OHS Act.

Safe Working Load:

- Safe working load for all rigging gear and hoists must be 6:1.
- Safe working limit for any rigging gear used to lift persons must be 10:1.

Lifting of Persons:

- Every employer shall ensure that lifting equipment for lifting persons –
    1. Is such as to prevent a person using it being crushed / trapped, stuck or falling from the carrier.
    2. Has suitable devices to prevent the risk of the carrier falling.
    3. Is such that, a person trapped in any carrier is not thereby exposed to danger and can be freed.

Please note: Lifting of people on a motor hoist is illegal, unless the person(s) are in an approved cradle.

Load Testing Requirements for Rigging Equipment:

- All lifting machines must be tested according to manufacturers specifications every 12 (twelve) months. The load test should be done with at least 110% (one hundred and ten percent) of the SWL of lifting machines.
- Where lifting machines are used for lifting people, the lifting machine must be load tested every 6 (six) months.
- Rigging gear must be inspected every 3 (three) months according to manufacturers specifications.
- All valid certificates must be kept on-site where they can be inspected by personnel or an inspector.

Secondary Safeties:

- All objects (points) that are rigged from a roof must have the necessary secondary safety bonds attached.
- All secondary safeties must be fire proof. Objects that are rigged from a truss, bar etc. must have a safety bond attached to them.
- Any safety bond used must be sized according to the weight of the equipment it is used to suspend.
- All secondary safeties must be rigged in such a way that the rigged object is secure and will not fall in the event of a fire or the falling of the gear / hoists.

Rigging Strength and Stability

Every rigger or supplier shall ensure:

- Lifting equipment is of adequate strength and stability for each load, having particular regard to the stress induced at its mountings or fixing points.
- Every part of a load and anything attached to it, and used in lifting, is of adequate strength.
- If any doubt of strength or stability may occur, that the responsible person will seek the advice of the relevant structural engineer.

Organising of Lofting Operations

Every employer shall ensure that every lifting operation involving lifting equipment is:

- Properly planned by a competent person.
- Appropriately supervised.
- Carried out in a safe manner.
- All personnel that might be involved in lifting operations must have the necessary training required for the lifting operation.

PLEASE NOTE – in this case "Lifting Operations" means, an operation concerned with the lifting or lowering of a load.

Working Platforms

1. All working platforms must be operated and erected in a skilful and safe manner, according to the manufacturer's specifications and by a well trained person.
2. Any carrier must clearly display the maximum number of persons to be carried and must be clearly marked that it is designed for lifting people.
3. The SWL must be clearly indicated on the carrier.
4. The raising and lowering of people by work equipment that is not specifically designed for this purpose should only be undertaken in exceptional circumstances when it is not practicable to gain access by less hazardous means. Where it is necessary to use such equipment, then you must ensure that all necessary precautions are undertaken to ensure safety, including the appropriate supervision.

Cabling

Where it is necessary to run cabling across open floor spaces, these must in no way pose a trip hazard to any personnel involved in the venue.

- All cables must be adequately covered to pose no trip hazard whatsoever.
- No cables may be run across fire escape doors; instead these must be rigged over the effected door ways.
- No cables may come in direct contact with any type of draping / decor materials.

Liability

Contractors are personally responsible for the control of their equipment at all times and shall be personally liable

for any claims which may be made in respect of injuries which may arise or be caused by the use of this equipment.

The organiser / exhibitor acknowledges that the layout of the exhibit area and the large numbers of people present in the exhibition halls make it impossible for adequate security to be provided to protect the exhibitor's merchandise and other property. Accordingly, the exhibitor assumes all risk of loss for their merchandise, fixtures, displays and any other property of the exhibitor located in the exhibition area, storage or any other area where access has been provided to the exhibitors by the venue, where such loss results from theft, vandalism and/or any other damage caused by any agent, employee of the venue or any other person either authorised or not authorised to be present at the exhibition hall. It is recommended that all exhibitors consult their individual insurance representatives to obtain appropriate insurance cover.

Insurance
It is recommended that insurance cover be taken for the duration of the exhibition to include transport to and from the exhibition venue. The period of liability of the exhibitor shall be deemed to run from time to time the exhibitor or any of their agents or contractors first enter the exhibition hall and to continue until all exhibits and property have been removed. The Organiser carries public liability for visitors, but is not responsible for the insurance of exhibits or display materials on stands. Exhibitors are strongly advised to pack and remove from the exhibition hall all portable, appealing and valuable items at the end of each day when the exhibition closest, as this is the time that there is the greatest risk of loss and theft. Items such as cell phones, laptops, TV's, DVD's and video machines, must not be left unattended at any time. Exhibitors shall be responsible for making good any loss or damage to any items that they have rented or hired from exclusive outsourced contractors. EXSA suggests that exhibitors should carry public liability cover in excess of a minimum of R2 million (Two million rand) for the purposes of exhibiting at an exhibition. Any contractors appointed should carry same values of R2 million (Two million rand) liability cover.

Disclaimer Clause
Neither Sandton Convention Centre nor any of its directors, employees or agents, will be liable to the client fro personal injury to, or the death of any person, or loss, or damage to any property, of whatever nature, on the property or at the venue, however arising or caused. The organiser / exhibitor indemnifies the organiser, the Sandton Convention Centre and its directors, employees or agents against any claim of whatever nature, which may be against any of them arising out of any of the aforementioned, except where the same was due to gross negligence by the organiser or the Sandton Convention Centre.

Disaster Management Act No. 57 of 2002
Every event and event / exhibition organiser is advised to take note of and implement the actions prescribed in the following national and regional statutory laws and regulations that govern safety, risk and disaster management of public events.

While this legislation is primarily aimed at the authorities to develop disaster management risk assessments, plans and structures, it is imperative that event organisers carry out risk assessments for each event in order to minimise possible risks. Disaster Management experts, particularly in the Johannesburg Metropolitan Council, advise on the 12 point disaster plan as below:

1. Undertake hazard and risk analysis, to identify possible types of potential disasters (a) at the event and (b) within the proximity of the venue that could impact on the event.
2. Identify all potential role players that may / would have to be called upon should any of the potential disasters occur.
3. Within those identified in (2) above, determine: (a) what each role player's primary role should be, and (b) what each role player's secondary role(s) could be.
4. Determine what each role player would require in order to be able fulfil his or her primary role, if called upon.
5. If the support / input from external role players is required (e.g. traffic officials to ensure that access roads are open for emergency vehicles), the event organiser should arrange session(s) either through the venue or directly to finalise such requirements, as part of the planning process.
6. Ensure that all role players take (written) ownership of their agreed upon primary roles and that other role players understand and accept this.
7. Draw up joint plans for those identified scenarios in (1) above.
8. Identify realistic and possible mitigation / prevention projects / strategies that could minimise or prevent adverse consequences from occurring.
9. Identify the various role players for those projects / strategies that are to be implemented in terms of (8) above.
10. Implement and monitor (7) and (8) above.
11. Identify possible command post / coordination facility and the role player(s) to take charge / coordinate the implementation of (7) and (8) above.
12. Revise (at predetermined intervals) all plans and projects / strategies.

As organiser of the event it is imperative that all as-

pects regarding safety, risk and disaster management are evaluated and that the roles and responsibilities be detailed and a document be developed in managing the safety at an event.

Occupational Health and Safety Act 1993 (OHSACT)
This act has been promulgated to ensure working environments, premises and venues to which the public has access are kept safe and healthy. The OHSACT has several focuses and can be summarised as:

1. To enforce the implementation of the Act and its regulations so as to safeguard workers, contractors, employees and public who may be adversely affected by working activities. This is done through prosecuting transgressors and imposing personal and financial penalties.
2. To put in place legislative structures that will prevent injuries and illness, including reducing incidents of machinery breakdown, fire, etc.
3. To prevent a working environment that could damage or harm surrounding properties and people.

Section 8 of the Act provides that the business owner (in this case the organiser of the event) shall identify and evaluate the hazards to health and safety in the place of work (in this case the SCC) that you hire and take "ownership" of, during your contractual period.

What is important to understand and bear in mind is that Section 37 of the Act does not provide that all steps must be taken but rather the business owner or organiser is expected to take reasonable steps to prevent those risks materialising into harm. Furthermore, in this section the Company Owner or Chief Executive Officer will be liable for all the transgressions of employees and contractors unless all reasonable steps have been taken to try to prevent the foreseeable risks becoming a reality.

Included in Section 37 (1) the OHSACT provides that the Business or Organiser may be vicariously (indirectly) liable for the transgressions of their employees and contractors. In order to limit the Organiser's liability all contractors employed by the company should sign a Section 37 (2) agreement, and as such in terms of the agreement, Contractor's will then have the status of employers, which means that they have the responsibility for ensuring that they and their employees comply with the OHSACT and its regulations.

SABS 0400 – National Building Regulations
This code of practice cover provisions for building site operations and building design and construction, both permanent and temporary that is deemed to satisfy the provisions of the National Building Regulations.

Temporary buildings are defined as any building that is so declared by the owner or structural builder and that is being used or is to be used for a specified purpose for a specified period of time. This includes staging, set building, set designers and scaffolding structures. Before a temporary structure can be authorised by the Local Authorities or by the property owner, the following submissions may be sought:

1. Statement of the period of which the temporary building will be operational;
2. A site plan;
3. Layout drawings in sufficient detail, to determine the general size, form, materials of construction and the use of the proposed building;
4. Any structural detail required determining the structural safety of the temporary building.

By virtue of the temporary nature of events, it is important to be aware that when temporary structures are being built – stage, special designer stands, double storey or otherwise – they are deemed a potential hazard and organisers must request a detailed layout plan with all the relevant details. Furthermore, the submission of this plan should be made to the SCC, which will assist in analysing and determining the risk. If a recognised stage builder builds the structure, the venue, risk assessor and local Emergency Management Services will inspect the structure for safety purposes and request the authorised builder to provide a Structural Certificate.

Note that if it is determined that there is possible risk attached to the temporary structure, and to people and items around the structure, the SCC or the local Emergency Management Services may order you to take steps to negate the risk which may have a detrimental effect on the opening of your event. Be aware that the local Emergency Management Services have a right to issue summons or fines if they are not satisfied with the construction of the temporary structure.

This Code of Practice covers provisions for building site operations and building design and construction both permanently and temporarily that are deemed to satisfy the provisions of the National Building Regulations. Temporary buildings are defined as any building that is so declared by the owner or structural builder and that is being used or is to be used for a specified purpose for a specified period of time. This includes staging and scaffolding as temporary structures. Before a temporary structure can be authorised by the local authorities or by the SCC, the following submissions will be sought:

1. Statement of the period of which the temporary building will be operational;
2. A site plan;

3. Layout drawings in sufficient detail, to determine the general size, form, materials of construction and the use of the proposed building;
4. Any structural detail required determining the structural safety of the temporary building.

For the purposes of the event / exhibition, it has been determined that any built structure, stage or otherwise is deemed a potential hazard, and, as such, a layout plan with the relevant details is required.

The plan submitted to the SCC will be analysed and the risk determined. If a recognised stage or stand builder builds the structure, the SCC, risk assessor and Emergency Management Services will inspect the structure for safety purposes and request the authorised builder provide a Structural Certificate.

If it is determined that there is a possible risk to the temporary structure and to the people and items around the structure, the SCC and Emergency Management Services then have the right not to allow person(s) on the structure.

The Emergency Management Services have a right to issue summons or fines of they are not satisfied with the construction of the temporary structure. The items that fall within these regulations will be monitored buy the Safety Consultant and the SCC, and these parties will, in turn, brings concerns to the attention of the organiser or managing agent.