The following precedents are a selection of the precedents that have been studied and that have guided my design thinking. These precedents also had an impact on the design development in that they have set objectives and aspirations for the project and its extended facilities through establishing a conceptual context from which the design of structures and spaces can develop.

SCENE
precedent study 4
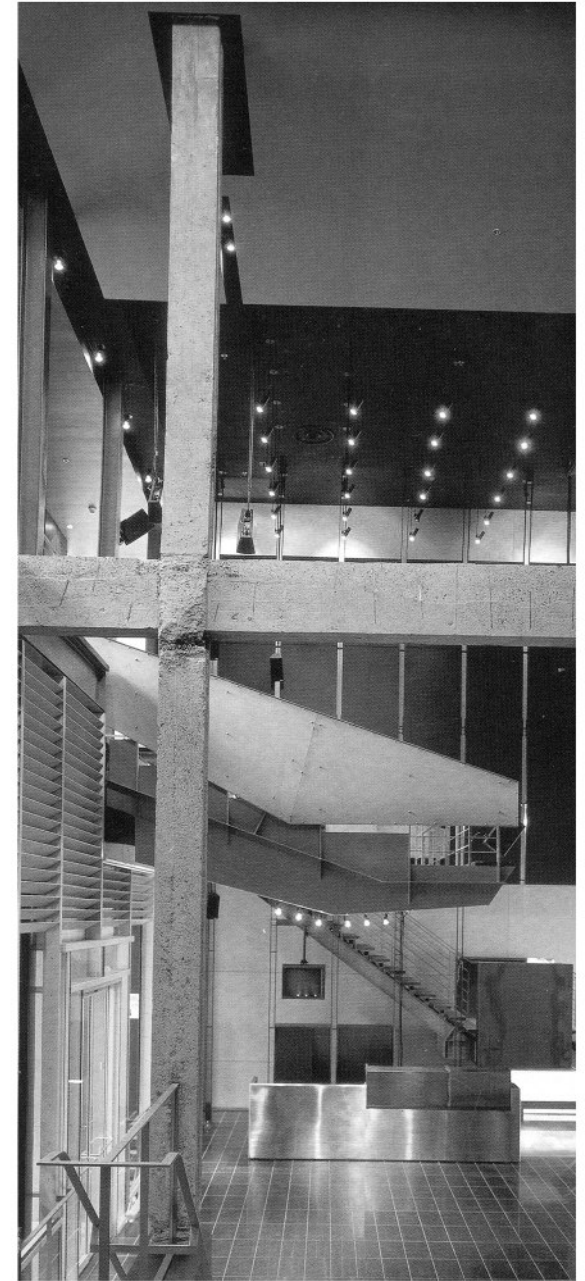
4.1 Building/Interior: <u>The Cine – an experimental film centre</u>

Reference: ANDERSEN, K. 1999. "Hariri & Hariri conjures up the Cine, an experimental film centre for the year 2020", *Architectural Record*, December 1999, vol. 187, no.12: 100 – 103.
HARIRI AND HARIRI. *s.a.* "When the building is a computer". Available on the Internet at http://www.haririandhariri.com. Accessed on 4 April 2005.
CAPOGRUPPO, P. 1999. "The Cine – experimental Film Centre, Brooklyn, NY". Available on the Internet at http://www.europaconcorsi.com/db/pub/scheda.php?id=2119. Accessed on 4 April 2005.

Architect: Hariri And Hariri
Place: Brooklyn, New York, USA
Date: 2020

Hariri and Hariri explored technology in another light at The Cine, an experimental film centre to be constructed on a pier near the base of the Brooklyn Bridge. The complex will not be complete until 2020. "Through form and structure The Cine explores relationships between architecture and film – and the very nature of the 1st century entertainment." (Andersen 1999: 100)

This film centre will feature Texas Instruments' Digital Micromirror Device(DMD) screens that are visible from the surrounding urban context. These digital displays can be programmed to convey information, receive and broadcast films (images) via satellite, or act as movie projection screens. (Andersen 1999: 100)

The complex consists of a concrete frame structure that supports the different parts of its program. At the main entrance of the film school and the entire complex, a digital screen offers movie previews to the public. The school component consists of a rectangular box housing the classrooms, and film studios. A film track gallery extending the whole of the length of the building and penetrating the concrete frames is clad in DMD and linked to the street by a spiral concrete ramp. Filmstrips exhibited on the interior face of this long DMD-clad tube are portrayed outwards onto the urban setting. The three cinema auditoria at the heart of the complex have large scale vertical and horizontal digital displays. These displays challenge the conventional screen format and dimensions – suggesting possibilities for future films. (Andersen 1999: 103) An indoor/outdoor cinema auditorium for film festivals at the pier end features a freestanding DMD screen that faces Manhattan and addresses those reaching the theatre by boat or sailing past.

Gisue Hariri stated that they want to invert the idea of a cinema as a closed space, isolated from the city by opening it and merging it with the urban setting. With new digital technology changing the process of photography and in filtering the entertainment and communications fields one can only imagine how the film industry – and the architecture created to accommodate it – will change in the near future. (Andersen 1999:103)

Design influence:

In this precedent the physical walls of the building become one with the new technology, the DMD screen. The innovative thinking of Hariri and Hariri is what has inspired the design thinking; their whole building has technology embedded in its walls. It has also contributed to my design with regard to other aspects:

- The way they turn their building inside out - what is going on inside is portrayed on the outside, connecting the surrounding urban environment with the interior of the building.
- The way that the building allows inclusive access to the public. The proposal allows for the public to move through the public spaces of the building allowing for a total experience and by doing that the public becomes aware of the more private facilities the building has to offer.

One might say that their approach might seem farfetched but there are still innovative ideas that have great potential on how one looks at the relationship between film, architecture and technology.

Fig 21. Screen at main entrance

Fig 22. Film track gallery penetrating through the concrete frames
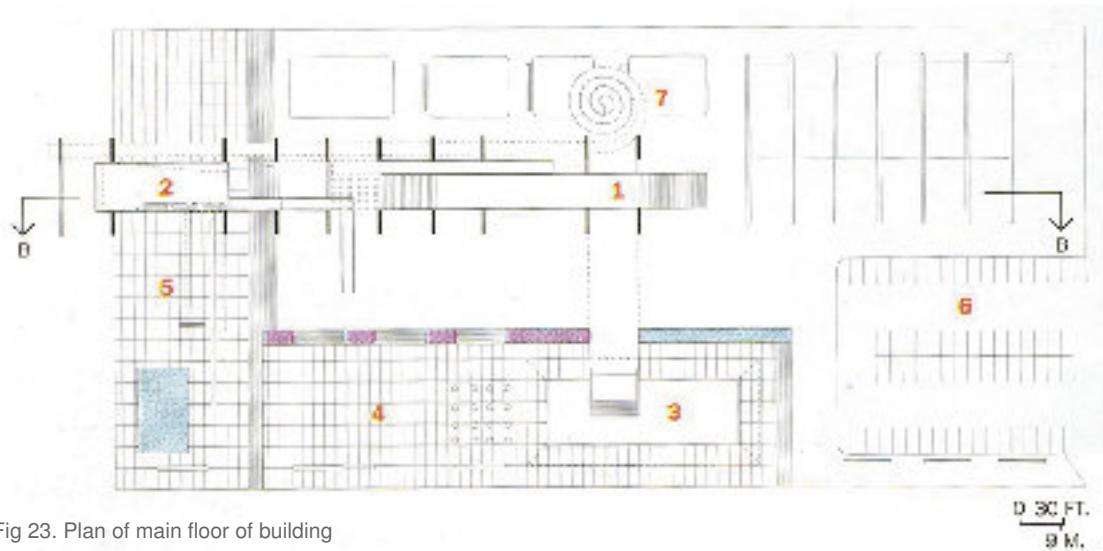
Fig 23. Plan of main floor of building

1. Outdoor lobby/shooting gallery
2. Observation deck
3. Cyber cafe/video arcade
4. Outdoor cafe
5. Promenade
6. Parking
7. Ramp

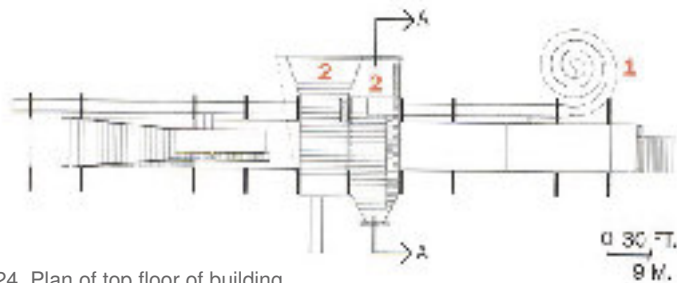Fig 26. Screen of outdoor/indoor cinema

Fig 24. Plan of top floor of building

1. Ramp
2. Indoor cinema
3. Covered outdoor cinema
4. Film school
5. Vertical- screen cinemas

Fig 27. Film track gallery

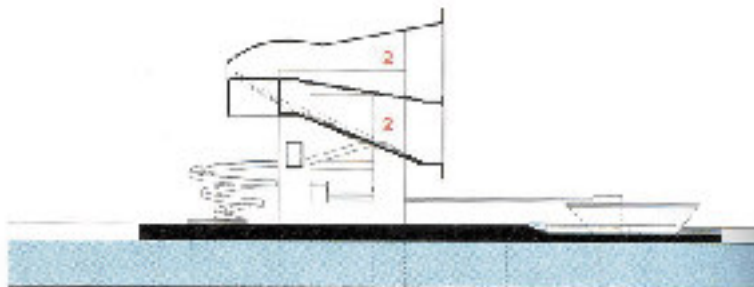Fig 28. Perspective of building from the water
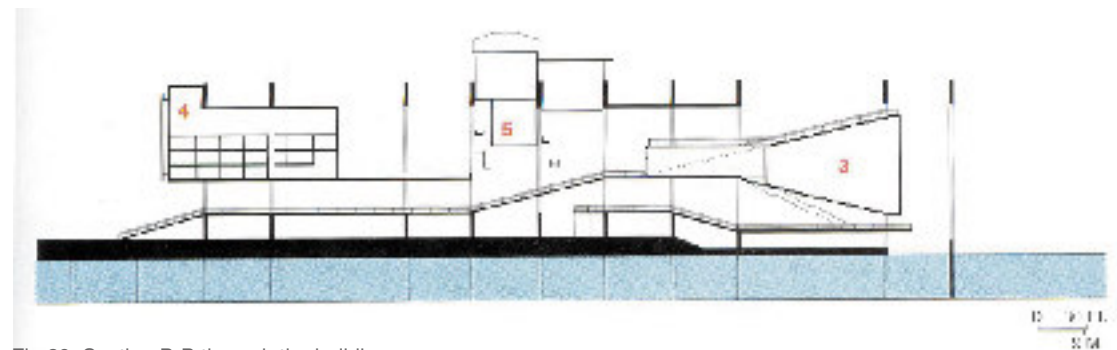

Fig 25. Section A-A through building

Fig 29. Section B-B through the building

021

4.2 Building/Interior: **Moving image centre**

Reference: DAVEY, P. 2003 "Moving image", *Architectural Review*, May 2003, vol. 213, no. 1275: 50 – 54.

Architect: Francis-Jones Morehen Thorp
Place: Sydney, Australia
Date: 2003

The competition-winning proposal by Francis-Jones Morehen Thorp was to transform the stuffy building of the Museum of Contemporary Art, a huge and heavy shipping headquarters built in 1952. The sandstone shell of the building will be retained but a new linear respiratory system is to be installed all along the west side of the original plan. Fins of metal and glass will form horizontal shafts, in which fresh air (cooled by heat exchangers using harbour water) will be drawn in at low level and drawn up through the building by convection to be expelled over the roof. (Davey 2003: 50)

These metal and glass fins will unfurl at the north end to from almost flower-like forms. This part is to be the Sydney Harbour Moving Image Centre. The entrance to the building will be from a stepped sandstone pedestrian piazza on which is a glazed foyer. On the same level as the foyer will be the main museum and escalators up to the cinemas. The curved forms cause each of the main cinemas to face a monument. When the audience enters the cinema, they will face a glass wall that will frame either the Harbour Bridge or The Sydney Opera House. As the show starts, the screens will descend and while the screens are down, images will be projected from the outside from the piazza for advertising. Above each of the cinemas is an open-air theatre, which will enjoy the same views as the cinemas. This building allows interaction with its dynamic surrounding environment. (Davey 2003: 54)

Design Influence:

In this precedent Francis-Jones Morehen Thorp tries to move away from the traditional black box cinema auditorium by introducing glass in the cinema auditorium façade. This is quite a bold and unconventional move and it creates an interaction between the interior of the cinema auditorium and the surrounding urban context. Another aspect that connects the cinema to the environment is the fact that when the screen is lowered it is used from the outside as advertising and this draw people into the building.

It is the inventive way that the architects used unusual materials in the cinema design that has inspired the design thinking.
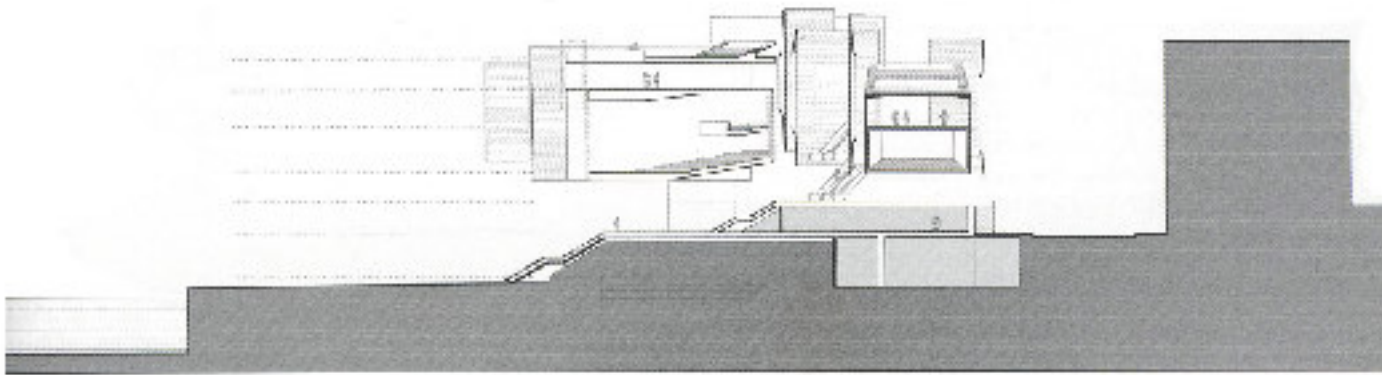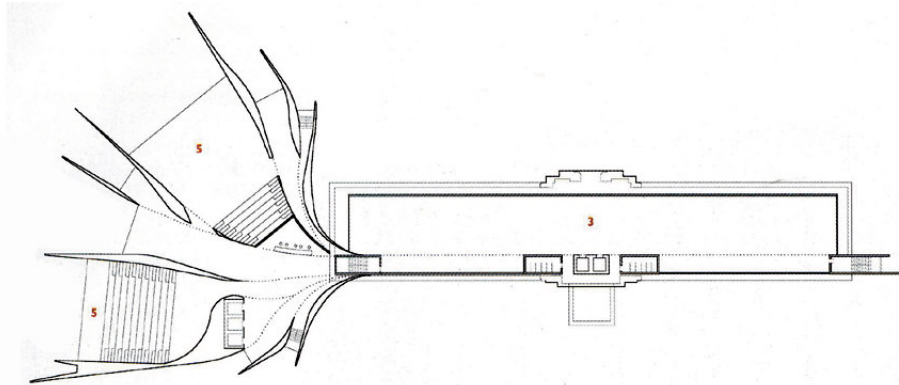

Fig 30. Section through cinema auditoria
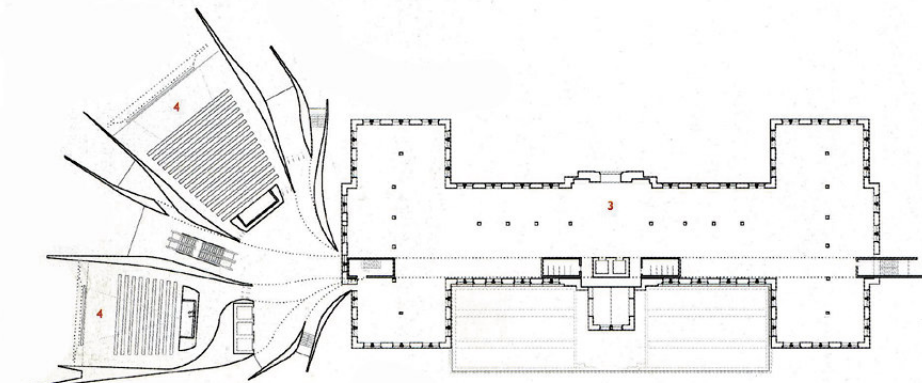
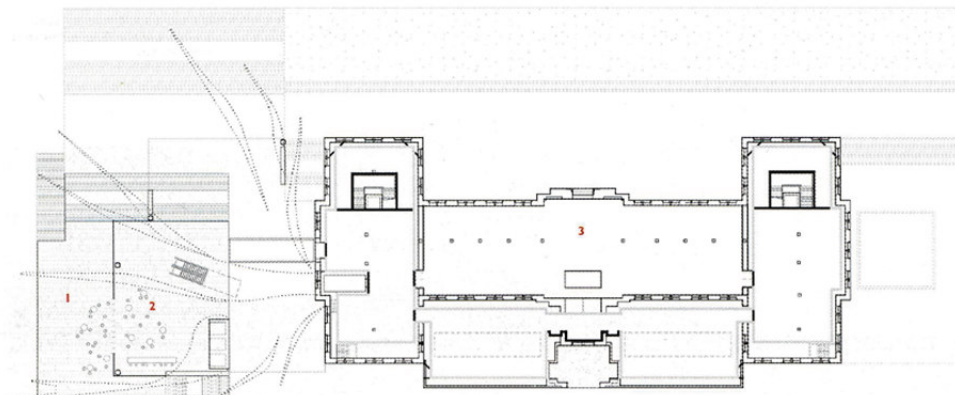Fig 31. Top floor (open-air theatres)

Fig 32. Cinema level

Fig 33. Entrance level

1. Piazza

2. Foyer

3. Existing building

4. Cinema

5. Open- air roof-top threatre

Fig 34. Images projected onto exterior of screens

Fig 35. Views to the Bridge and Opera House

4.3 Building/Interior: **Cinémathèque Québécoise – Magnum Cinema**

Reference: CARTER, B. 1998. " Moving image", *Architectural Review*, August 1998, vol. 204, no 1218: 74-77

                HEATHCOTE, E. 2001. *Cinema builders*. London: Wiley-Academy, 89 - 95

                KAPUSTA, B. 2000. "Cinémathèque Québécoise", *Architectural Record*, November 2000, vol. 188, no. 11: 142-146

Architect: Saucier and Perrotte Architects
Place: Montreal, Canada
Date: 1997

"Saucier and Perrotte's fascinating little Cinémathèque Québécoise in Montreal is an example of a building which goes against the grain of the suburban super-cinema – the megaplex, to provide an exquisite little urban cinema centre contained within a sophisticated series of interlocking spaces and sculptural forms." (Heathcote 2001: 187)

The project is housed in two adjacent buildings, one that was previously a school and the other a vacant two-storey brick building. The school has been planned to house a range of public spaces - foyer, shop and 175-seat cinema - at street level and administrative offices on the floor above. The other building houses classrooms, offices, studios and exhibition areas for the film school. In the slot between these two structures a new extension has been added. It is this extension that establishes the character of the Cinémathèque and houses a café, a small new cinema and exhibition gallery. "As the word light refers to conditions of weight and illumination, so the design of this new light box explores both of those qualities within the context of the moving image."(Carter, 1998: 74) This light box's facade consists of a combination of transparent and translucent panes of glass and a ramped interior bridge on the second floor. (Kapusta 2000: 146) The translucent part of the glazed skin is a screen, which is used to project moving images that can be viewed from the street. The ramp interior bridge is situated between the projectors and this screen, thus the silhouetted images of visitors moving on the bridge appear periodically on the screen.

In the main foyer is a cantilevered seating area above the entrance, which faces a large projection screen. This public cinema was designed to seat approximately 50 people and is available for visitors while they are wandering through the building or waiting for their movie to start. "By placing screen and seating in mid –air, the cinema ceases to be a private, enclosed, darkened space and becomes an activity that is part of the public realm. (Heathcote 2001: 187)

Design influence:

This precedent had the most profound impact on my design thinking. This was primarily because of the way the architects incorporated the ideal of the moving image into their architectural language. The user is constantly aware of the function of the building and is not just a bystander but also an active part of the building and its activities.

By designing a cinema in the foyer of the building, open for the public, the designers moved away from the idea of cinema as an entity in a black space but connected to a public realm.

The materials within these internal spaces are monochromatic and with differences in texture. The designers created a space that comes alive as the user moves through it. Emphasis has been placed on the placement of different functions throughout the building. The light lobby sheathed in glass and metal houses the functions that take advantage of the daylight together with the other functions, like the cinema auditorium and exhibition space housed in the old buildings, where the daylight can be controlled.

In the words of Edwin Heatcote: "Complex, spatially inventive and thoughtful, the Cinémathèque Québécoise succeeds in bringing some of the versatility of film into architecture in one of the finest urban cinemas of recent years." (2001: 188)

Fig 36. Glass facade and translucent screen

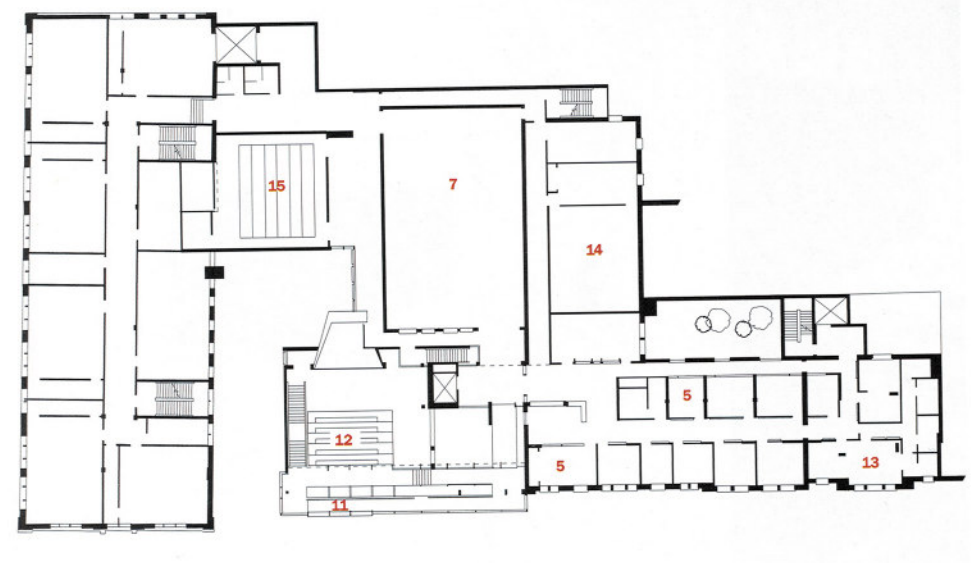Fig 37. Entrance lobby

Fig 38. Ground floor plan

Fig 39. First floor plan

1. Entry
2. Lobby
3. Exhibit gallery

4. Shop
5. Offices
6. Theatre

7. Exhibition
8. Cafe
9. Garden

10. Multimedia showcases
11. Bridge
12. Suspended seating

13. Lounge
14. Photo storage
15. Video projection

Fig 40 - 42. The entance lobby with cantilevered balcony for informal screenings
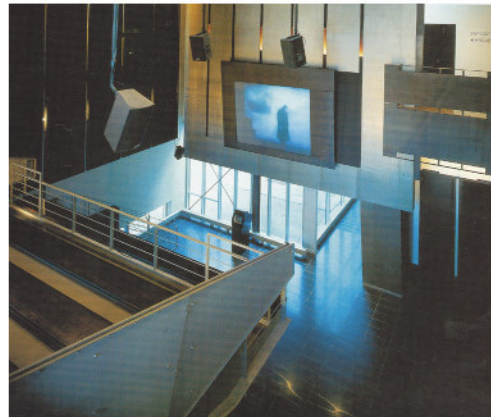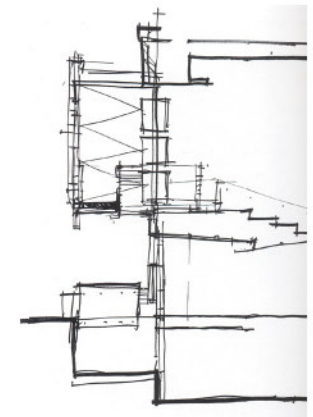

Fig 43. Sloping bridge

Fig 44. Sketch section

4.4 Building/Interior: School of Fashion and Graphic Design

Reference: VAN CLEEF, C. 1998. "Fashion sense". *Architectural Review*. Vol. 203. Issue 1215, p 53 – 57.

Architect: Erick van Egeraat
Place: Utrecht, The Netherlands
Date: 1994-1997

The Dutch practice of Erick van Egeraat Associated Architects was to devise a more acceptable architectural solution to the design of the School of Fashion and Graphic Design after the initial designs of another practice had been rejected. The concrete foundations were already in place and the response of Van Egeraat was to build the school largely as initially proposed, and then cover it in a delicately transparent external skin.

"On a sprawling suburban campus the new building comprises three low-rise horizontal blocks cranked around a courtyard. The largest block contains cellular classrooms for fashion and graphic design, linked to an interstitial wing housing the entrance hall, a canteen, auditorium and facilities for a Montessori School. A third smaller part containing classrooms and a gymnasium meet the ancillary link at an obtuse angle." (Van Cleef 1998: 53)

The transparent external skin is positioned 150mm from the face of the building. This aluminium framed glass wall is a uniform 12m high and comprises a single layer of 8mm thick clear glass. Behind this transparent screen one can see the contrasting textures of the concrete structure, plywood covering and mustard colour insulation on the inside of the building. Horizontal slits between the glass panels help to ventilate the cavity.

Within the entrance hall's atrium is a small auditorium clad in translucent, ribbed fibreglass panels elevated on a random grid of spindly, angular pilotis. This cube-shaped volume of the auditorium is connected to the classrooms and ancillary spaces by glazed bridges. Smooth plywood sheets cover the auditorium's gently sloping underside and light, from fluorescent tubes, diffuses through the auditorium's translucent cladding and infuses the surrounding atrium with a surreal, radio-active glow.

Design influence:

There are quite a lot of similarities in this precedent that correlate with the ideas of the

dissertation. Erick van Egeraat worked with the skeleton of the building and through intervention designed a building that works successfully. In the dissertation there is also a skeleton that forms the base of the design process and these constraints should not be seen as a barrier but as an opportunity for creative invention.

"The only part of the complex where Van Egeraat had a relatively free hand was at the north-east corner, where the orthogonal plan is fractured to create a luminous entrance atrium, which functions as an exhibition space."(Van Cleef 1998: 57) By the intrusion of a cube-shaped auditorium in this space the idea of a building inside a building is created. Creating a building within a building is one of the main conceptual ideas of the dissertation. The cinema area of the building would become an entity on its own thus functioning as a building disconnected from the building that surrounds it and this will be achieved by the difference in floor levels.

Although the light box, the auditorium, is successful and gives the idea of lightness and surrealism, it is still disappointing to notice that the idea of lightness has not been expressed in the interior of the auditorium. The inside of the auditorium still looks very traditional and weighty. This is due to the fact that the auditorium should be acoustically appropriate and after investigation into the subject, it has been found that one can create the illusion of lightness but for acoustic reasons high weight and low stiffness are necessary for good sound insulation.

Fig 45. Transparent glass screen   Fig 46. Plywood covering on the inside   Fig 47. Auditorium seen from outside
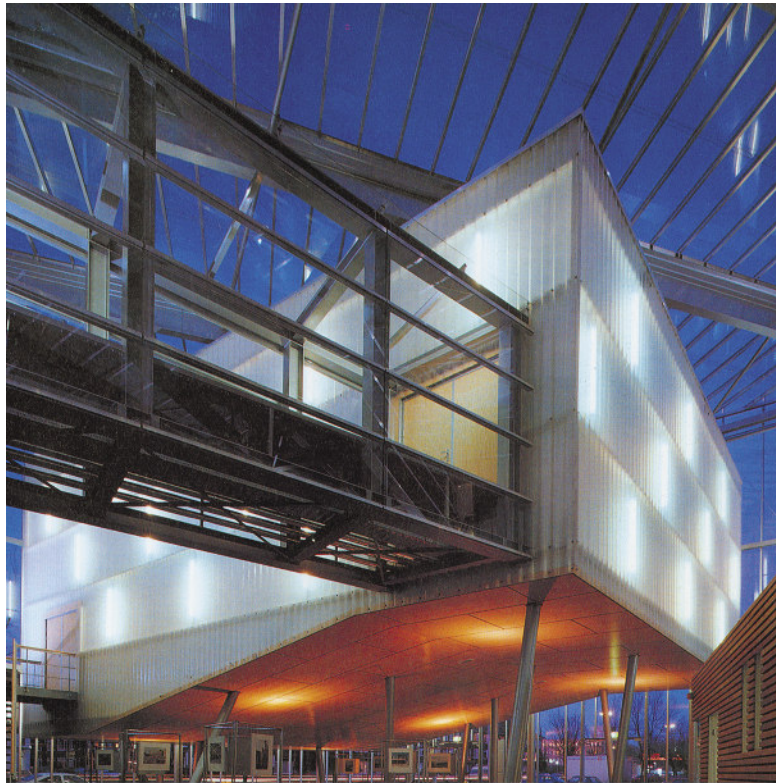
Fig 48. The luminous auditorium in the entrance hall

a. aluminium flash-
ing
b. plywood
c. roof felt
d. concrete screed
e. prefabricated
concrete floor ele-
ments
f. 8mm clear glass
g. fixing
h. aluminium mul-
lion
i. 2 x 10 mm plas-
terboard
j. damp-proof layer
k. 75mm insulation
l. 12mm plywood
m. suspendid ceil-
ing
n. aluminium
widow frame
o. steel grill

Fig 49. Bridge connecting the
auditorium with classrooms
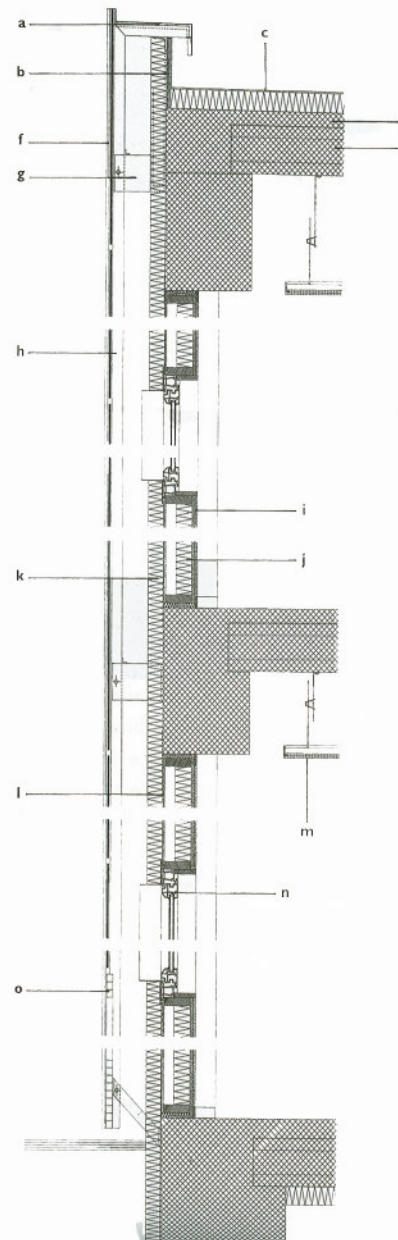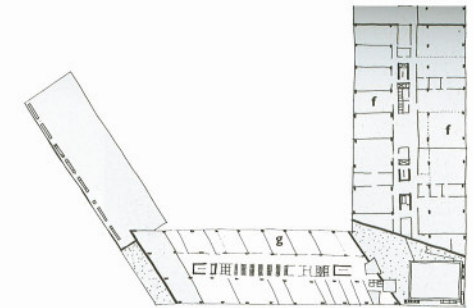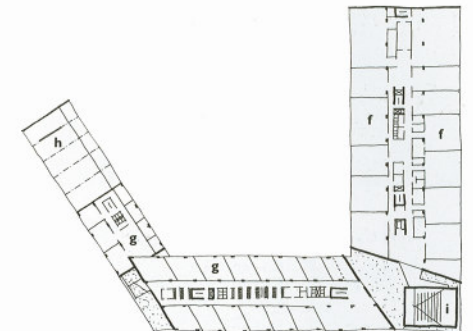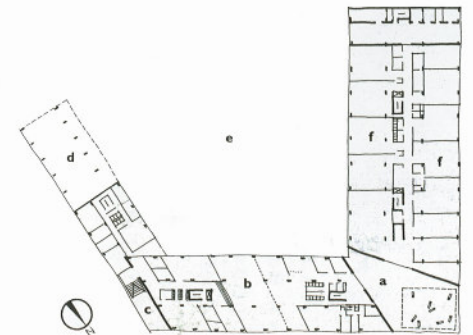

Fig 50. Inside of the auditorium

Fig 51. Detail of the exterior glass wall

second floor plan

first floor plan

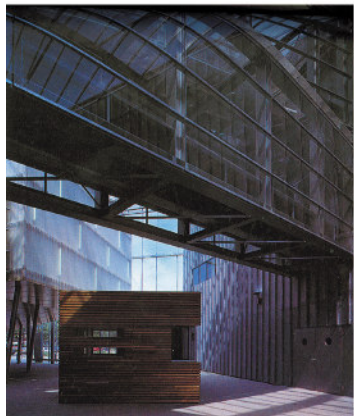ground floor plan (scale approx 1:1250)

Fig 52. Plans of the building

0 2 7

4.5 Building/Interior: <u>UFA Multiplex Cinema Centre</u>

Reference: HEATHCOTE, E. 2001. *Cinema builders*. London: Wiley-Academy, 89 - 95

HEATHCOTE, E. 2000. "The development of modernist cinema – sideshow to art house", *Architectural design: Architecture and film II,* January 2000, vol. 70, no 1: 70 – 73.

KIL & BACHMANN. 1998. "UFA multiplex cinema, Dresden", *Domus*, September 1998, vol. 98, no. 807: 8 – 17.

KUGEL, C. 1998. "Picture palace*", Architectural Review*, July 1998, vol. 203, no. 1217: 54 – 58.

WIDMAN, T. & ROBNIK, D. 1994. "Coop Himmelb(l)au – The UFA cinema centre: splinters of light and layers of skin*", Architectural Design: Architecture and film,* November – December 1994, vol. 64, no 11/12: 49 – 55.

Architect: Coop Himmelb(l)au
Place: Dresden, Germany
Date: 1993 - 98

"Coop Himmelb(l)au is not simply constructing a space containing cinema auditoria but rather designing a mediating in-between zone, in which the entities of cinema and the city communicate with one another." (Widman & Robnik 1994: 49)

The UFA Cinema Centre in Dresden comprises two architectural elements: a basic concrete block, structured only in its outlines, which houses the eight auditoria. Four underground cinemas each seating 200 people and four additional cinemas, two seating 450 people and two seating 500 people. The second component is a clearly dominant metal-and-glass foyer structure in form of an irregular giant crystal spilling out on all sides. (Kil & Bachmann 1998:11) At night this crystalline structure becomes like a lamp displaying a series of complex and fragmented images to the city in a reflection of the vibrancy of the cinema screens within it. (Heathcote 2001: 90)

The foyer is actually a space where things happen and are experienced, almost becoming a cinema itself. Within this soaring interior of the foyer are ramps, stairs and bridges – some glazed, some enclosed by galvanized metal balustrades as well as a 'sky-bar' housed in a double cone suspended over the foyer on a conical cable structure attached to the highest points of the ceiling, like a giant cage. (Kugel 1998: 58) Other structures and facilities also housed in the foyer are an unsteady elevator tower and crooked media chimney containing the projectors as well as

snack bars, cafeterias and an underground discotheque. The foyer's elongated surfaces, that are but slightly defined because of their possible modes of utilization, can be used for concerts, fashion shows and media exhibitions. All these structures and facilities contribute to the vibrancy of the foyer. (Widman & Robnik 1994: 51) There are also five projectors in the foyer that enlarge the cinematic experience both spatially and temporally. The films are not only shown in the interiors of the auditoria but on one of the exterior walls where the solid material is changed with fluid lightness of projected images. The main aim of the foyer was to reclaim a piece of urban space, even for people who do not want to buy anything or watch a movie. (Widman & Robnik 1994: 54)

The cinema auditoria housed in the concrete block are arranged over three storeys. They look as if considerations of economy had forced them to be squeezed in one above the other. "The only space that seems to have been left for corridors and intermediate foyers, indeed for the main box-office hall itself on the ground floor, is the residual room beneath the sloping ceilings of the auditoria. Visitors have the constant feeling of being in danger of bumping their heads." (Kil & Bachmann 1998: 11)

Design influence:

Each cinema's foyer fulfils the basic function of linking city and screen – the foyer acts as the mediating in-between zone. "It leads the way and even often anticipates some of that which will follow." (Widman & Robnik 1994: 50) The foyer acts as a public space. The glass façade lets one see the surrounding urban environment

Fig 53. Crystalline glass structure   Fig 54. Interior of 'sky-bar'   Fig 55. Vibrant interior of foyer

from the inside and the vibrancy created by the visible routes through the building from the outside attracts people and invites them inside.

In this precedent the foyer surpasses its traditional purpose of being a waiting area but rather becomes a space that encourages the visitors to, formally or playfully, walk towards the cinematic experience. All the functions and structures in the foyer act as catalyst for the experience the visitors undergo as well as the use of projections inside the foyer. "The principle behind the UFA Cinema Centre's foyer is the connection between sensory perception of feeling and seeing." (Widman & Robnik 1994: 51) This principle is what leads my design thinking. The idea of stimulating the user's sensory experience through the space, not only when they enter the cinema auditorium but also from the moment they enter the cinema foyer to the moment they leave the building.

The architect's idea of creating a vibrant and interesting interior was successful in the foyer but some of that magic was lost in designing the layout of the auditoria. The auditoria are still dark black boxes and are not connected to the lightness of the foyer. The corridors that are not high enough create a sense of stuffiness for the user. Another critique on the building from the public as well as professionals is that one gets the idea that the building is only half done – it appears as if no time has been spent on detail and finishes.

As interior architect, these types of problems should be addressed and resolved successfully. Emphasis will be placed on the users' experience throughout the building not just in certain parts.
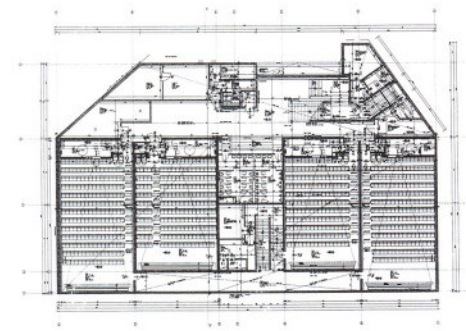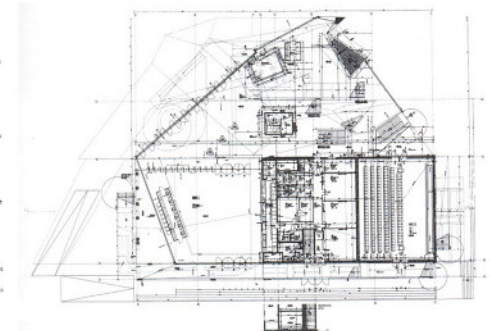

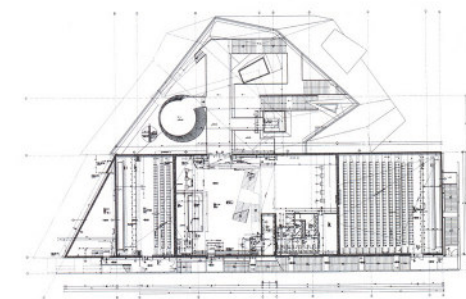Fig 58. Lower ground floor plan

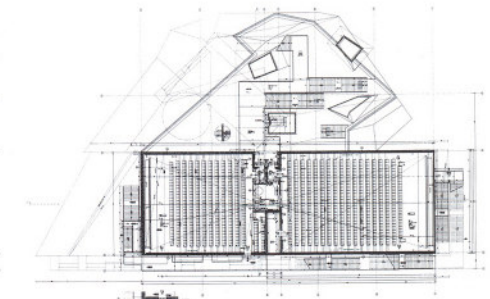Fig 59. Ground floor plan

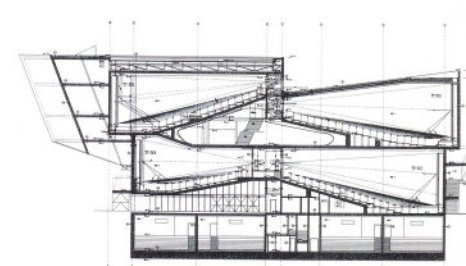Fig 60. First floor plan

Fig 61. Second floor plan

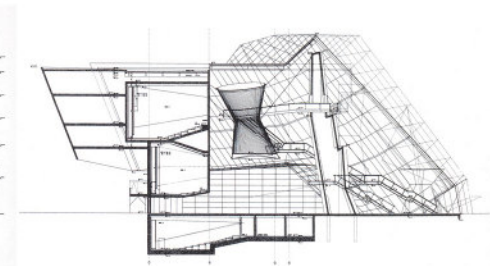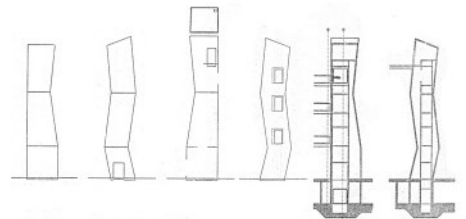Fig 62. Longitudinal section through auditoria

Fig 63. Longitudinal section through foyer
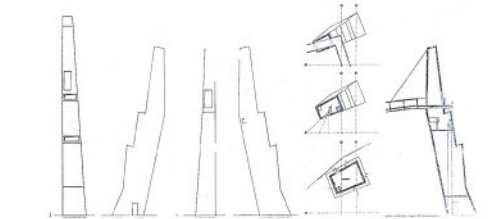

Fig 64. Elevations and sections of lift tower

Fig 65. Elevations, plans and sections of service column containing the projectors

Fig 56. Bridge enclosed by galvanized metal balustrades

Fig 57. Perspective of the structure

4.6 Building/Interior: **Black box, light box – RMJM's Performance Academy**

Reference: EVANS, B. 2005. "Black box, light box". *Architects Journal*. 21 April 2005, vol. 221, no. 15: 28-37.

Architect: RMJM
Place: Newcastle, United Kingdom
Date: March 2003 – November 2004

The building accommodates the Academy for Performance Arts, with a 250-seat theatre, a music venue, 11 recording studios, TV and radio studios, rehearsal and practice rooms, dance studios and two lecture theatres also licensed as cinemas. All the above is housed in the 'black box' area of the building and this helps create the necessary environmental control.

The 'light box' that is in front of the 'black box' is faced in polycarbonate. This polycarbonate front is also intended and extended to act as a screen for projection from the opposite building. On the southeast end of the light box the cladding is set up for back projection of sit-out/drive-in movies. "The interiors are robust, with services exposed on ceilings in corridors. The metal mesh used to retain acoustic absorbance on walls is used decoratively elsewhere."(Evans 2005:21)

Materials used for the light box include: powder-coated extruded aluminium curtain walling; twin-cell polycarbonate cladding with UV coating.

Design influence:

This precedent has been studied to explore the possibility of polycarbonate to act as a screen for projection of movies. In the case of this precedent it has been successfully used for both front and back projection.

Fig 66. South-east end screen with back projection

Fig 67. The south-east end screen

4.7 Component: A retractable timber – clad cinema screen

Reference: DAVIES, C. 2005. "A retractable timber – clad cinema screen". *The Architects' Journal*. 31 March 2005, vol. 221, no. 12: 30-31

Architect: Richard Murphy Architects
Place: Caernarfon, Wales
Date: September 2003 – January 2005

"At the heart of the new Galeri building is an auditorium designed for cinema, theatre or concert use." (Davies 2005:30) To allow this degree of flexibility, the cinema screen is constructed from a rigid steel frame that can be raised out of sight automatically or, alternatively, rotated and used as an acoustic reflector above the stage when the room is used as a theatre or auditorium. (Fig 7) By raising the screen vertically and suspending it at high level, a clear floor space is provided for the stage. A remote hand-held console operates the lift and rising of the screen. The screen weighs 1,500kg. This is due to the convex timber clad reflector surface at the rear end. This rear end also accommodates light fixtures that can be used in theatre mode.

"The screen is fabricated from a series of tubular steel trusses, which are 400 x 400mm at the top, 400 x 350mm at the sides and 400 x 200mm at the base. The propriety projection screen is laced simply into the outer frame and the perimeter edge masked with a traditional cinema-fabric 'valance'." (Davies 2005:30)
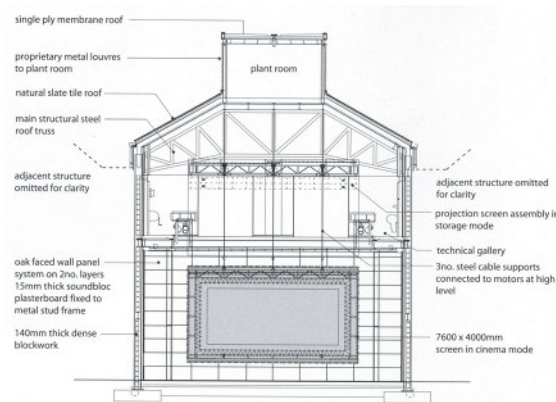
Design influence:

As the primary idea behind the design for the thesis is the multiple use of cinema space, this precedent informed the way in which one looks at the components of the cinema theatre. These components can be used if designed properly to enhance the multiplicity of the space.

This precedent was studied as an example of an innovatively used screen. The specific use of structure did not influence the design but the idea had an impact on the design thinking.
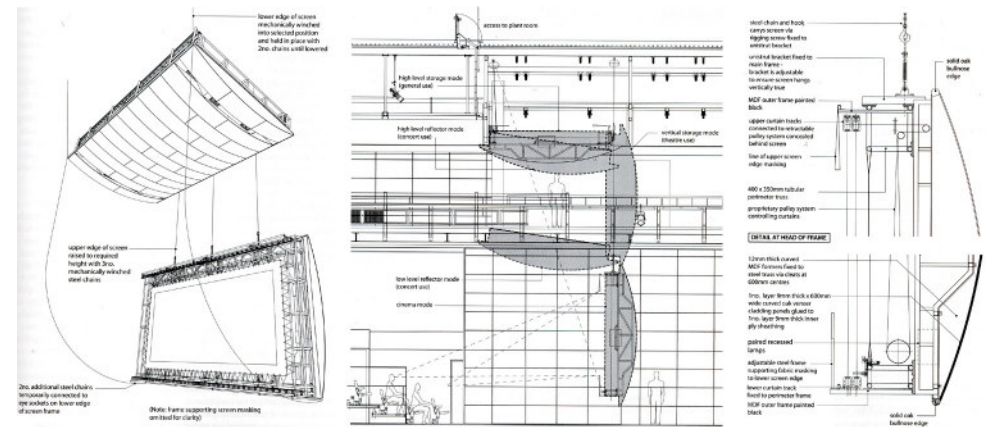

Fig 70. Screen in cinema and storage mode

Fig 71. Section showing screen mode location

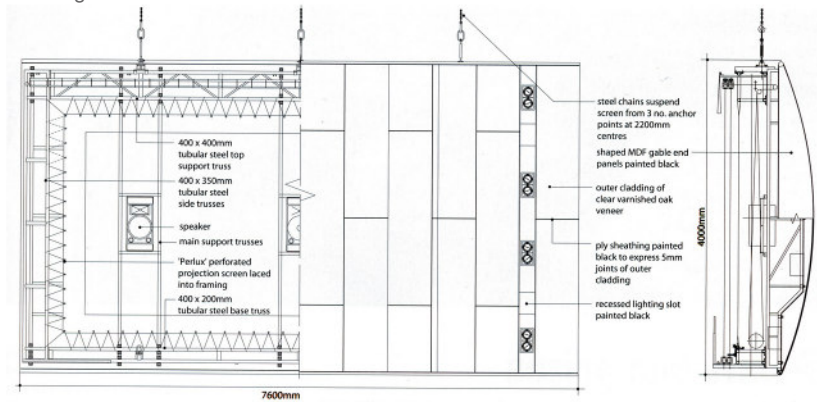Fig 72. Detail at head and base of frame

Fig 68. Back of screen acts as reflector

Fig 69. Elevation of screen in cinema mode

Fig 73. Elevation of screen showing framing and cladding

Fig 74. Section through screen

4.8 Component: **Seating with screens at the Heineken experience (museum and interactive gallery)**

Reference: *Experienced by the author*

Architect: Unknown
Place: Amsterdam, The Netherlands
Date: *Visited on 30 June 2005*

Design influence:

On a trip to Amsterdam in June we visited the Heineken experience – a museum and interactive gallery. In this museum they have used some of the most advanced visual technology like holograms as well as a cinema auditorium where the viewer stands on a moving platform. The platform then moves according to what is showing on the screen. Another interesting aspect of the Heineken experience, which had an influence on my design, was the use of individual seats with their own screen where people can watch Heineken advertisements from all over the world. The seat and the screen adjust with the push of a button.

The images are projected onto a mirror panel and are then reflected onto the glass screen. The speakers are situated on the seat next to a person's head.

As these seats with their screen are only used for short periods of time and not for viewings of longer shows or movies, they are situated right next to each other without a partition between two people sitting next to each other. Although it is used for short periods of time, the seats are comfortable and ergonomic. As the use for these type of screenings in the dissertations is quite different and the viewing period much longer, emphasis should be placed on the users' comfort and privacy.

Fig 80. Screens and seats adjustable.

Fig 75. Heineken experience

Fig 76 - 77. Seating with screens

Fig 78 - 79. Moving image projected on screens

4.9 Technology: **Digital cinema**

Reference: ANONOMOUS. Digital cinema - D-cine premiere DP100 projector. Available on the Internet at http://wwwbarco.com/digitalcinema/en/products/DLPCinemaprojectors.asp. Accessed on 3 May 2005. LAGRANA, F. 2002. Digital cinema. Available on the Internet at http://www.itu.int/itunews/issue/2002/01/digital-cinema.html. Accessed on 24 May 2005.

Digital cinema can be defined as follows: "Digital cinema is a new service which applies the most advanced television technologies to the world of cinematography. It simulates conventional cinema (projection of films on giant screens for large audiences) by using the technologies that brought us high definition digital television. (Lagrana 2002:2,http://www.itu.int/itunews/issue/2002/01/digital-cinema.html)

According to Walt Husak, the cost of delivering a file to a screen is inversely proportional to the number of screens in a complex. Thus, the larger the number of screens at a given location, the cheaper it is to deliver a digital movie to an individual screen. He also stated that digital cinema will allow rapid relocation of theatre assets to meet changing demands and this mechanism will allow flexibility to maximize revenue. (2004: 299–230, http://www.sciencedirect.com) Another advantage of digital cinema is the quality of the image. With films the quality of the image decreases with each reuse of the film reel. This is due to the fading of print dyes, dust and hairs collecting on the film as well as scratches. With digital projection these problems are eliminated. No matter how many times a file is played, the image will be as good as when it was originally delivered.

A typical projector for digital cinema is the D-Cine Premiere DP100 by BARCO. This projector makes use of the Digital Micromirror Device technology and can accommodate screens up to 25 meters wide. Another advantage is the flexible two-piece construction for convenient installation and operation in digital theatres. The dimensions for the whole projector which include the projection head and pedestal are: 1482mm (in height) x 768mm (in width) x 1120mm (in length). (http://wwwbarco.com/digitalcinema/en/products/DLPCinemaprojectors.asp)

"With the advent of digital cinema, existing cinema complexes can be transformed into genuine multimedia centres, where, in addition to digital films, it will be possible to broadcast live high definition television programmes, stage productions, concerts and all manner of sporting and cultural events." (Lagrana 2002:3)

Design influence:

With digital cinema the space required for the storage of large film reels and projection rooms is minimised. Another aspect that also has an influence on the design is that the digital projector's probability to catch fire is less then a normal film reel and thus fire prevention in projection rooms for projectors will be decreased. The use of digital cinema substantiates the idea of a multiple used space by allowing movies as well as alternative content to be shown in the auditoria.

Fig 81. D-Cine Premiere DP100 projector   Fig 82. SLM R12+ projector of alternative content

precedent studies