10.The influence of contexts, responsive design:

10.1.Specific Design measures:

The sketches of the design measures to follow are to illustrate which are the measures that will aid people with sight and physical disability respectively to use the building without much difficulty. These are very basic measures that are also easy to impliment in an existing building. This fact, along with the low cost of these measures are in line with the overall iam of the details in the building which is to be as basic and cost effective as possible.

All of these details were designed in consultation with a third party (disabled person). The resulting details are therefor more representative of the personal needs of the user. Designing details in consultation with the prospective users of a facility will therefor result in a more satisfied user.

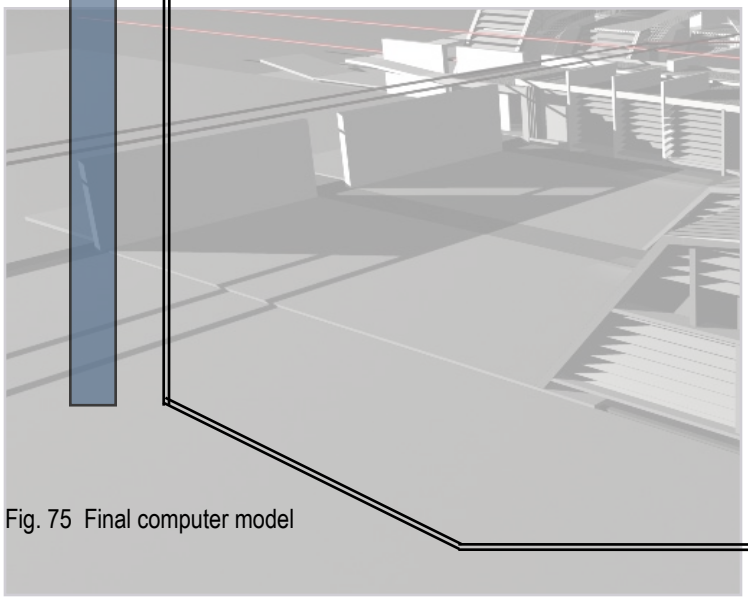


Fig. 75 Final computer model

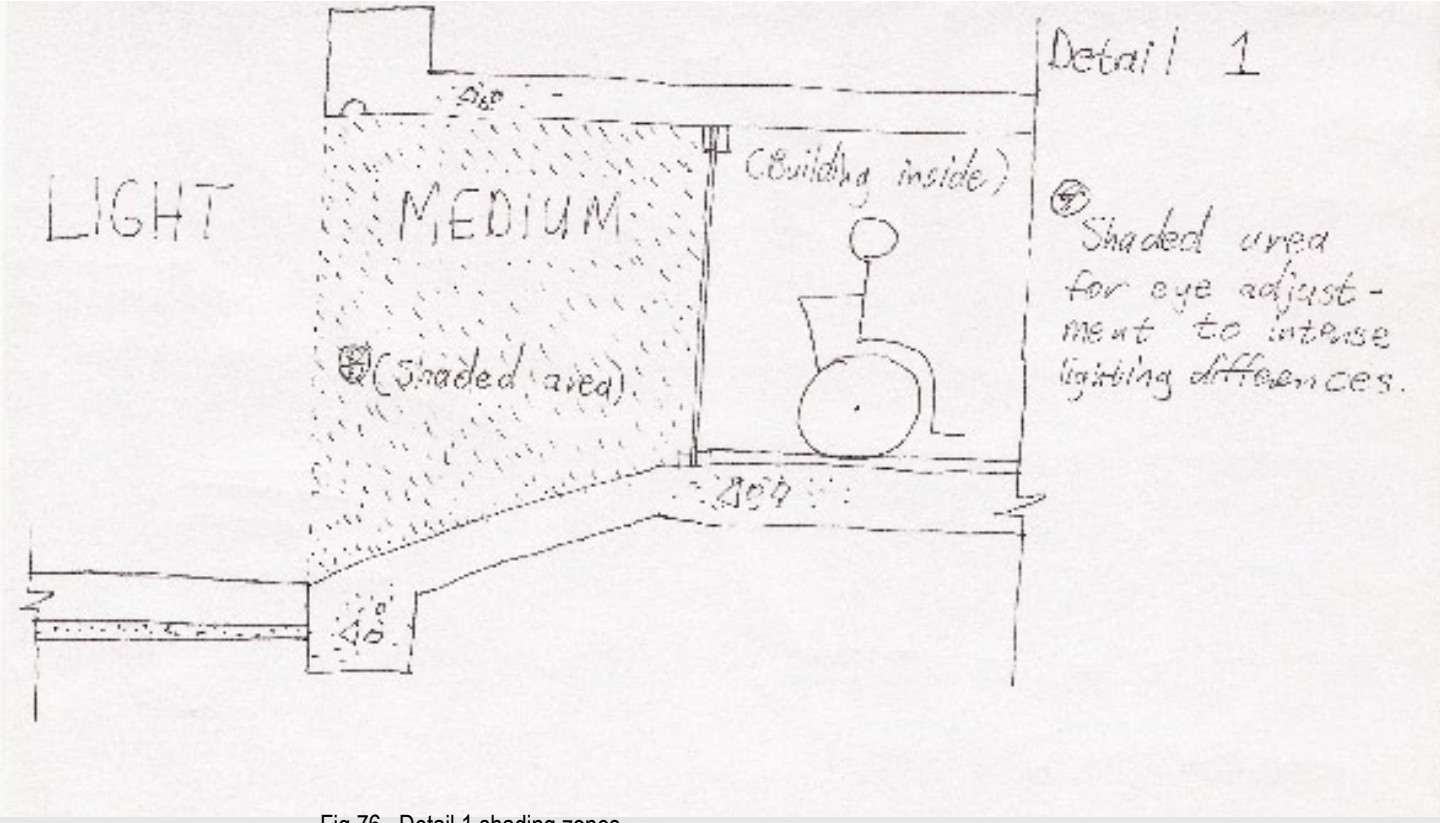


Fig.76 Detail 1 shading zones

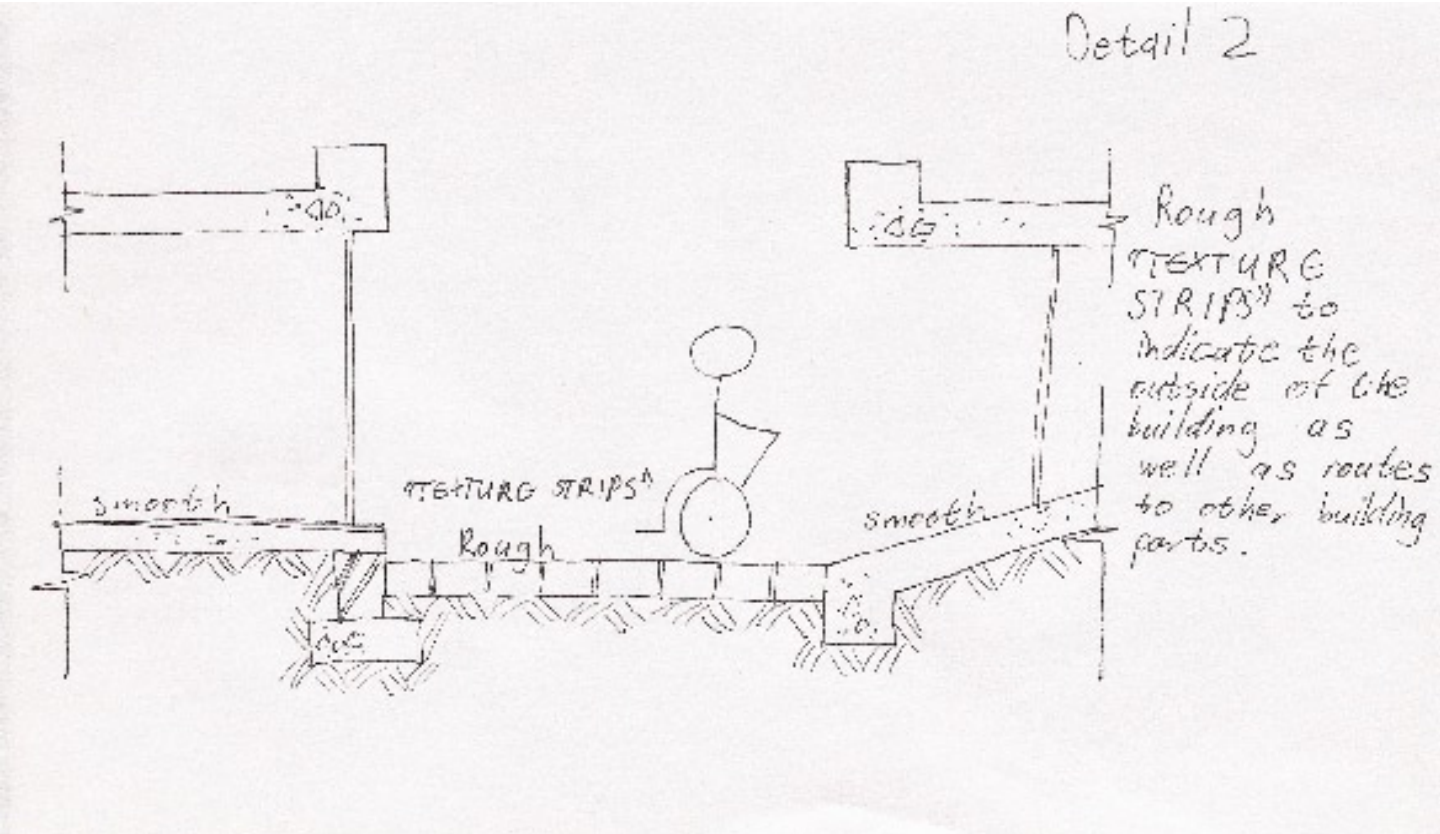


Fig. 77 Detail 2 movement texture

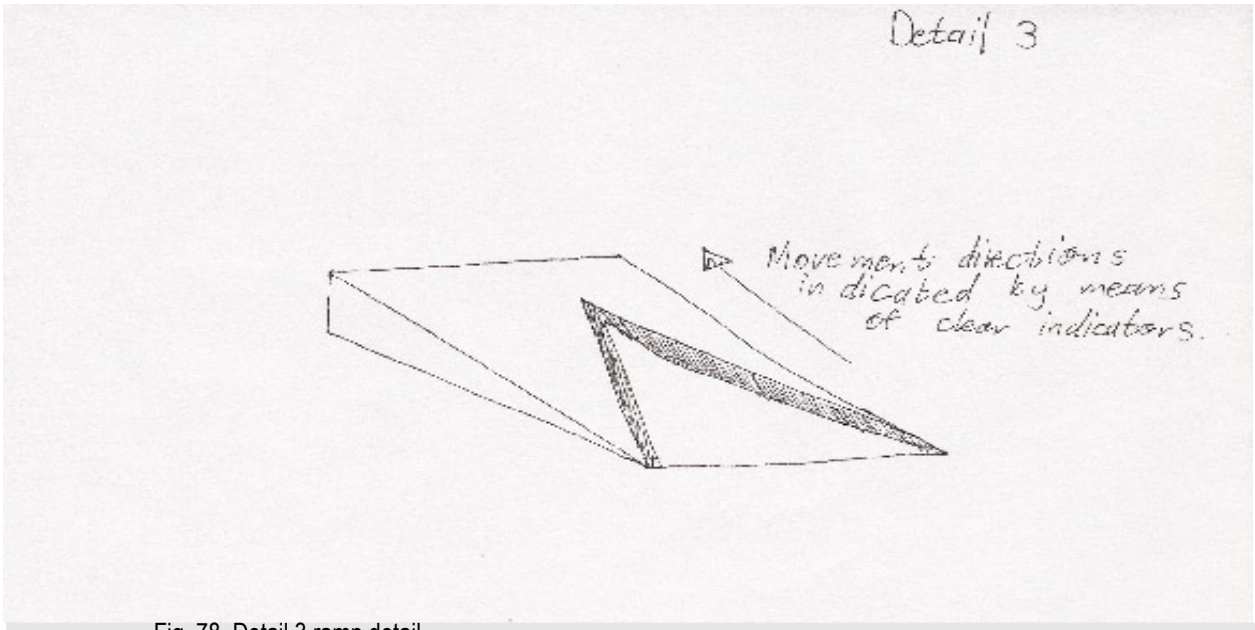


Fig. 78 Detail 3 ramp detail

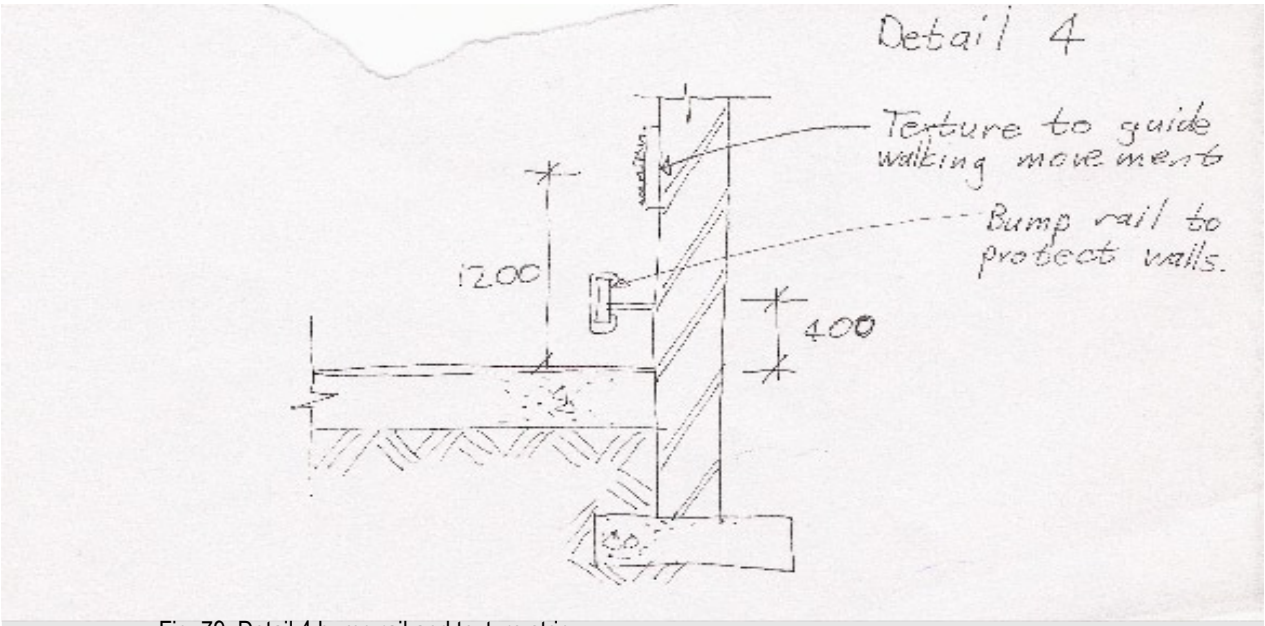
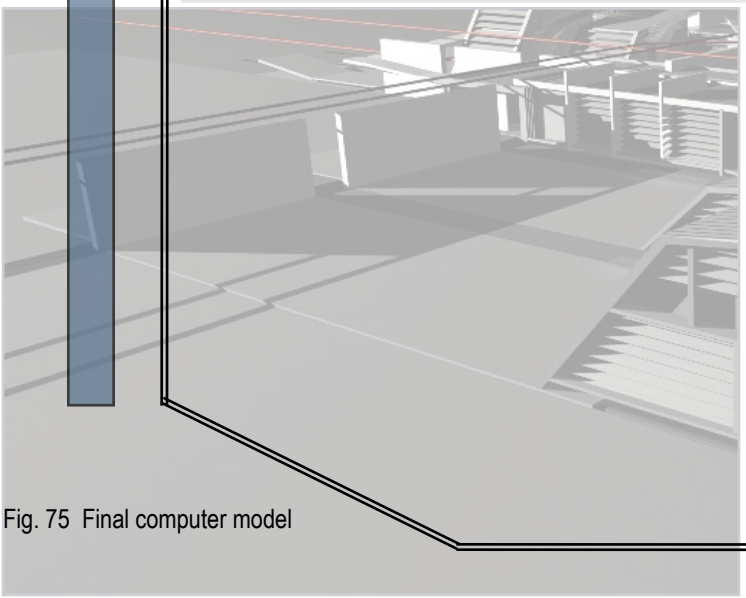


Fig. 79 Detail 4 bump rail and texture strip



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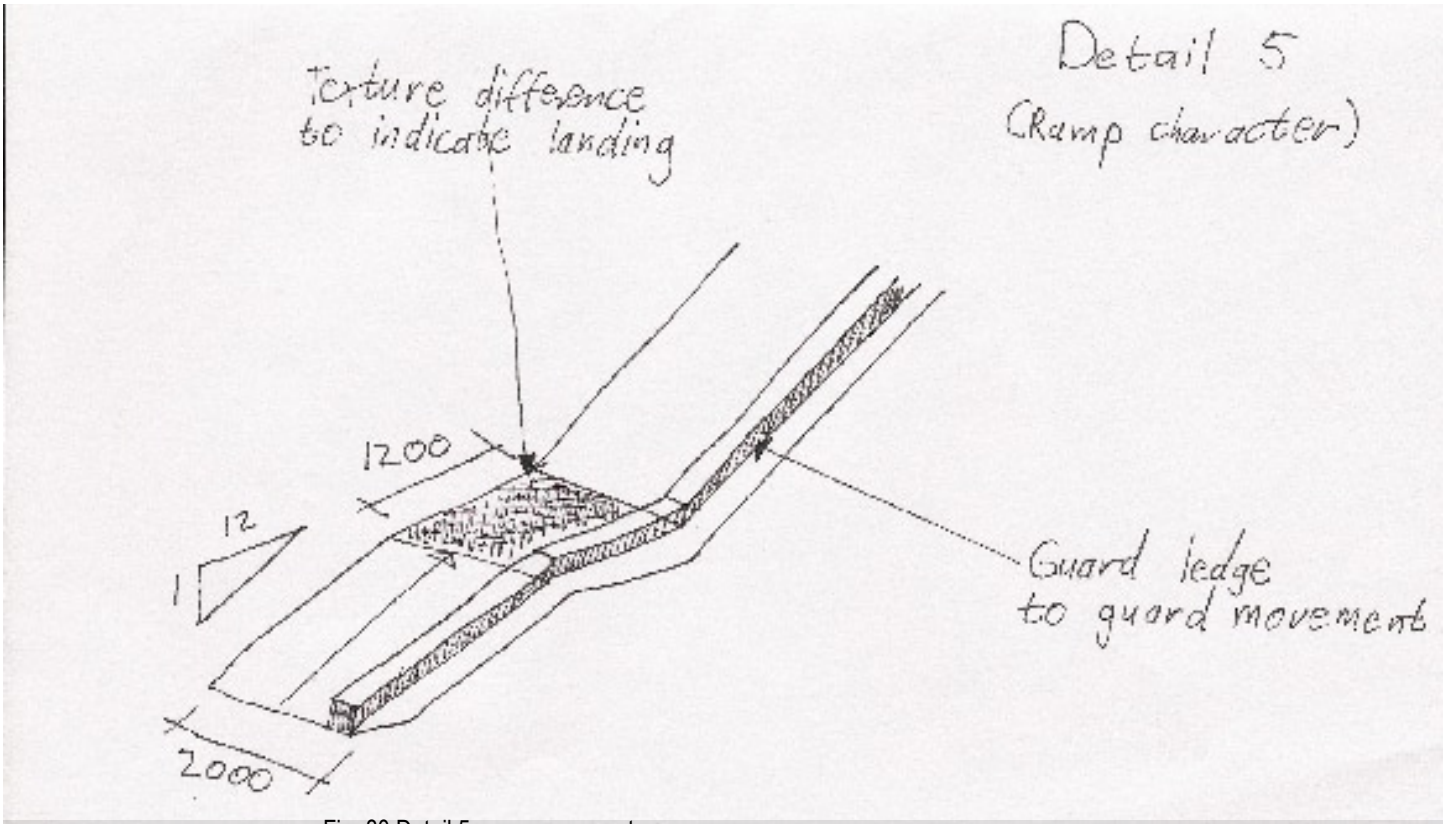


Fig. 80 Detail 5 ramp movement

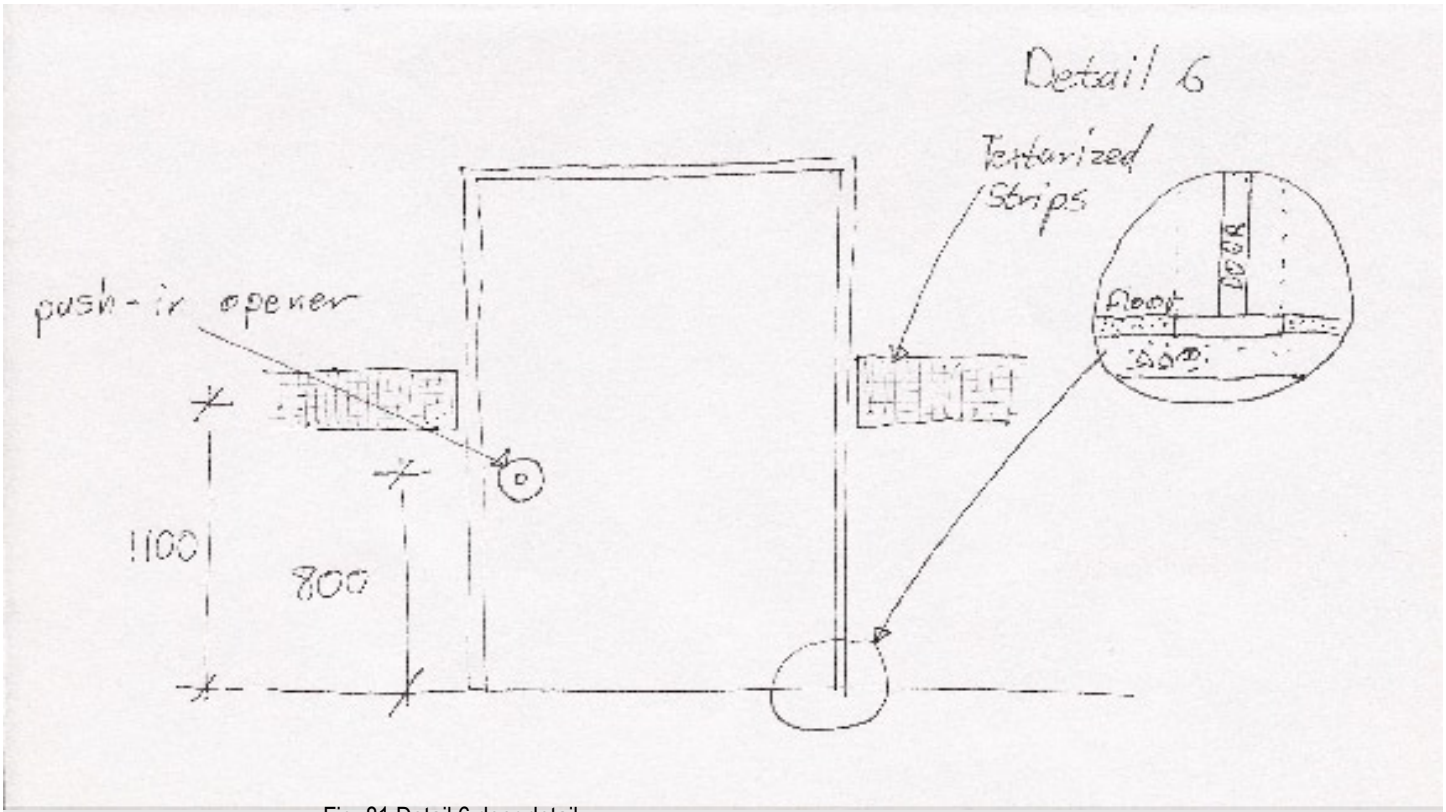


Fig. 81 Detail 6 door detail

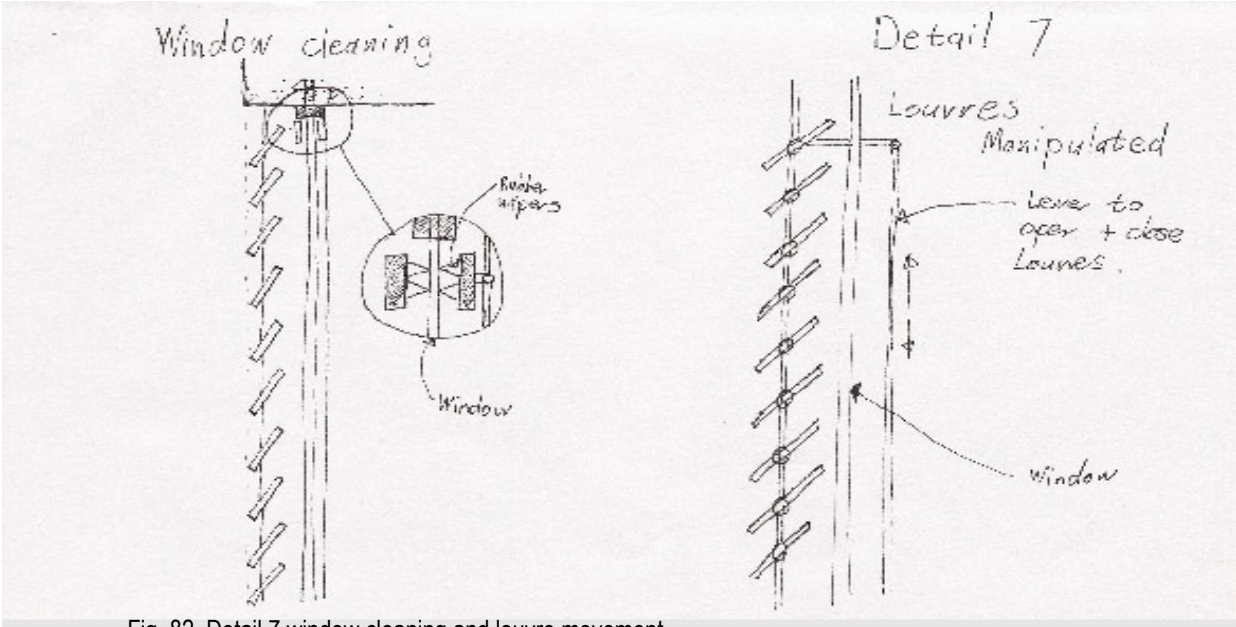


Fig. 82 Detail 7 window cleaning and louvre movement

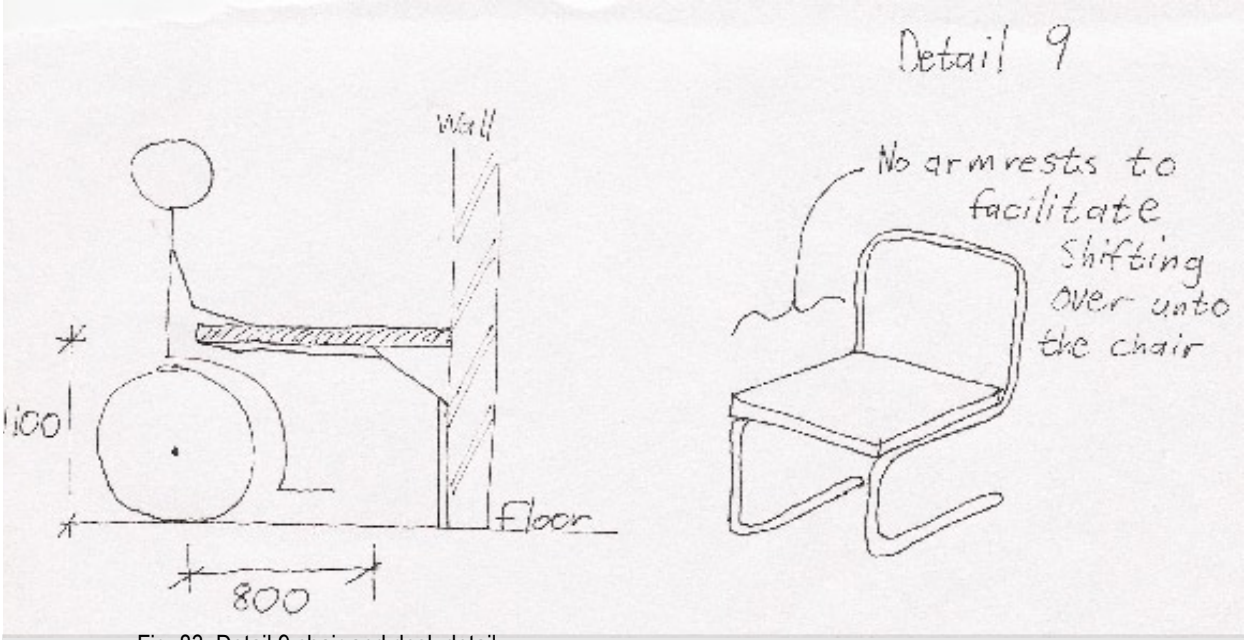


Fig. 83 Detail 9 chair and desk detail

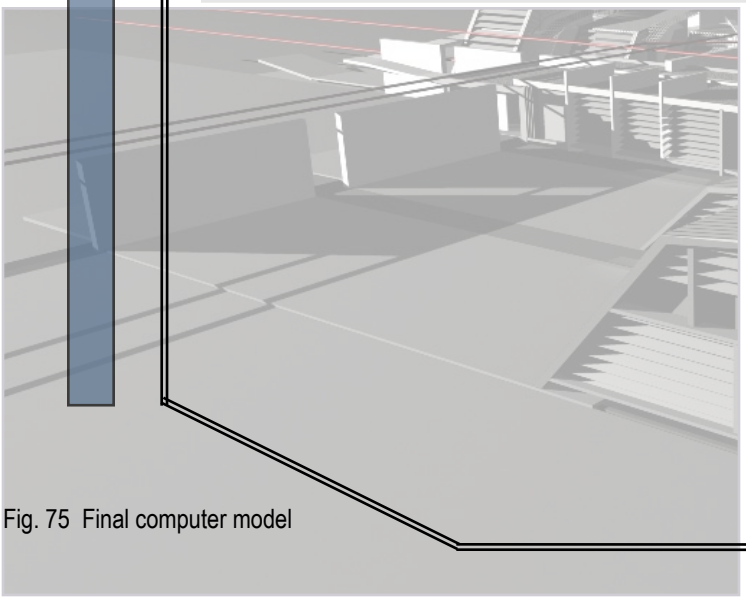


Fig. 75 Final computer model

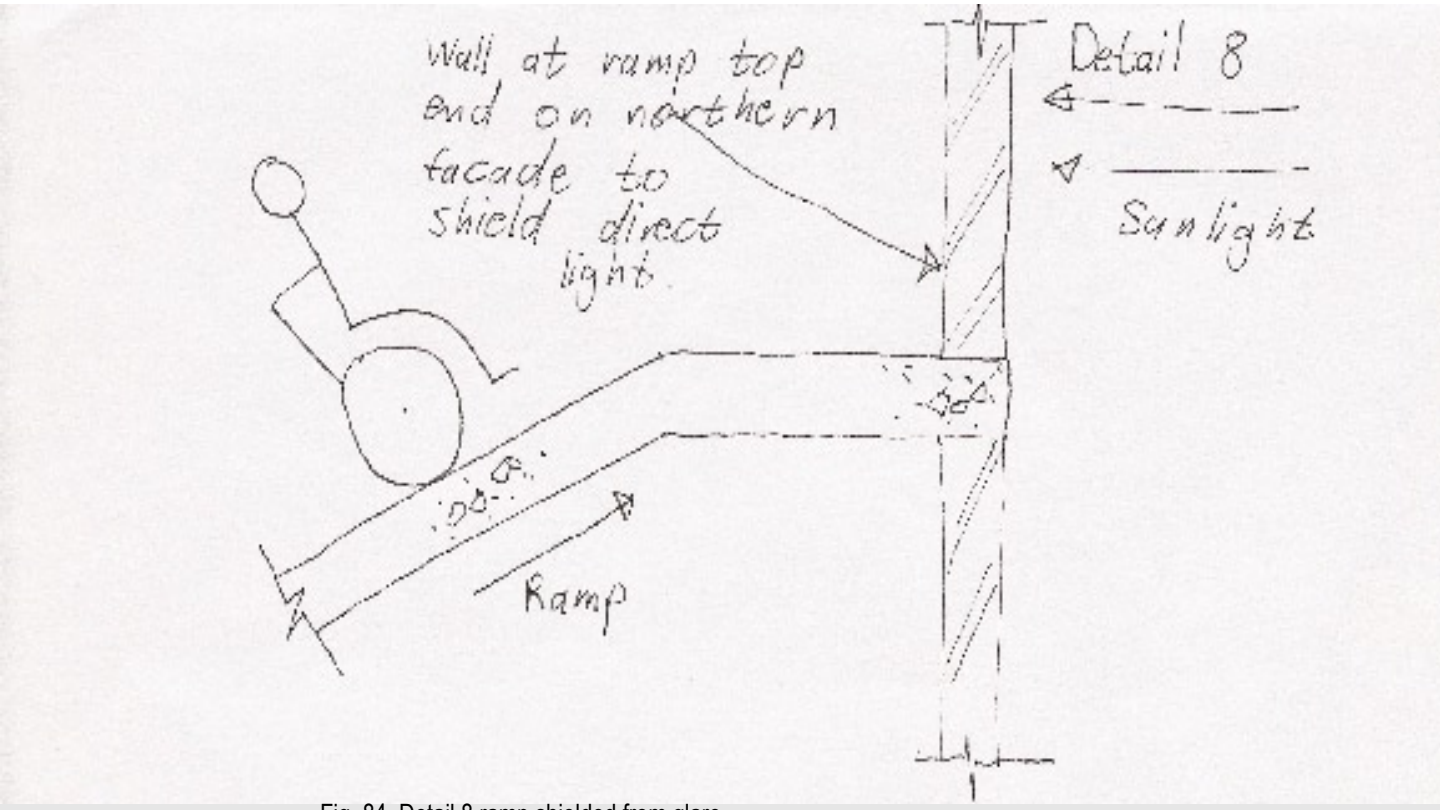


Fig. 84 Detail 8 ramp shielded from glare

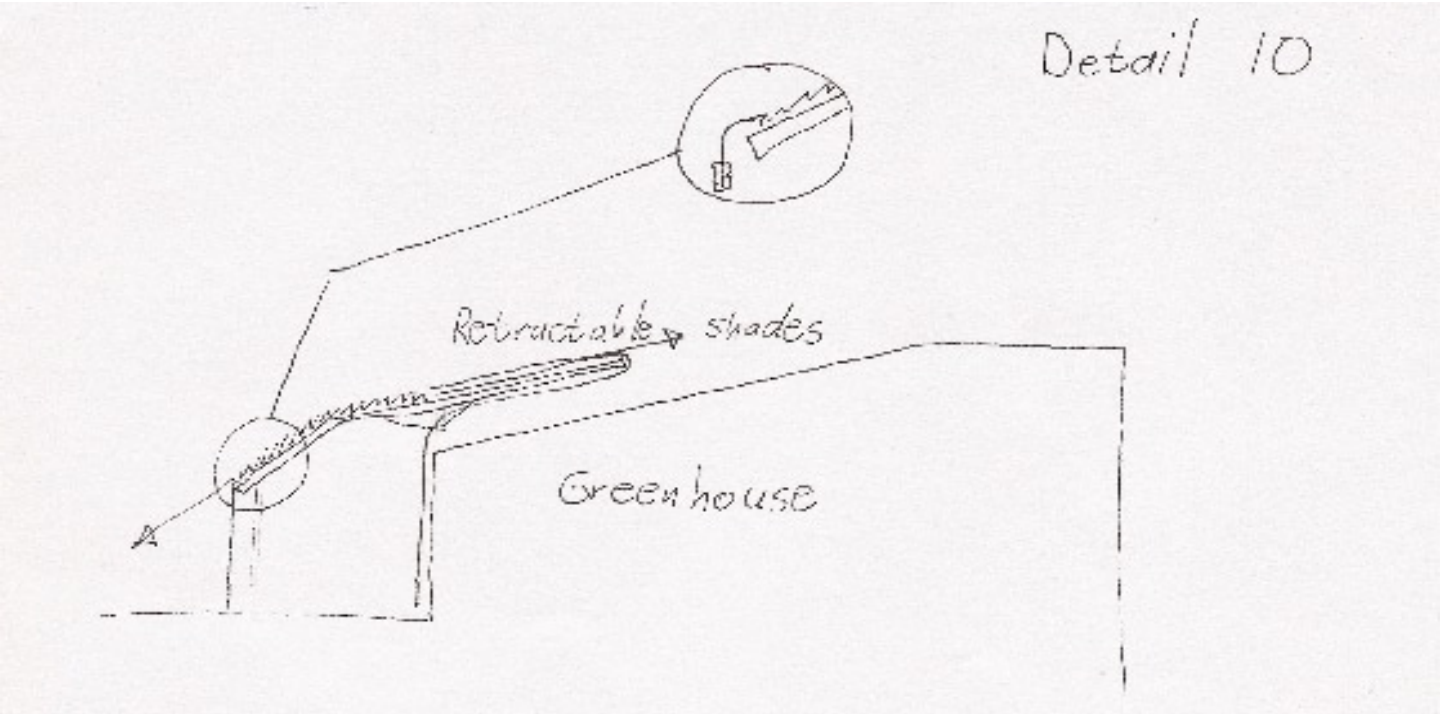


Fig.85 Detail 10 retractable shading

10.2 Physical context:

The physical context to which the centre responds had been divided into various response segments.These segments are: Views, Movement routes, Site scale and hierarchy, Climatic context and Physical connections.

10.2.1 Views to influence design:

The site is surrounded by a number of very sygnificant views that adds to the centre's connection with physical context. These views are of sygnificant building and landscape features like the Reserve Bank, the Nursing College as well as the Apies River Culvert.

These important views guided the design to include glass facades and viewpoints that enables a visual connection. The user must afterall be able to place himself within his/her greater context. This fact is especially true to disabled people in wheelchairs seeing as they have to adapt to a new way of perceiving the world.

Views often evoke contemplation, a fact that were taken into account in providing restricted roof access. The roofs provides a means for people to escape to a quite place without having to leave the centre. This quite place then aids in contemplation, amuch needed activity for every person struggling with emotional torment.

The added bonus provided by incorporating views into the design is that the general security of the site is enhanced. Passive surveilance will be very effective on a site where there are people moving over and pass the site throughout the day.

The use of passive surveilance in combination with CCTV surveilance provides a further means by which the users of the centre can take control of the running of the centre.

The provided access to the rest of the city will also be pretty useless if a means is not provided by which centre users can be oriented or orient themselves. The accentuated views provides such a means. A centre user can easilty be pointed in the direction to move in order to reach a specific reference point in the city. These reference points need however be points that are visible from a wheelchair at every stage of movement towards it. The Reserve Bank is a good example of this.

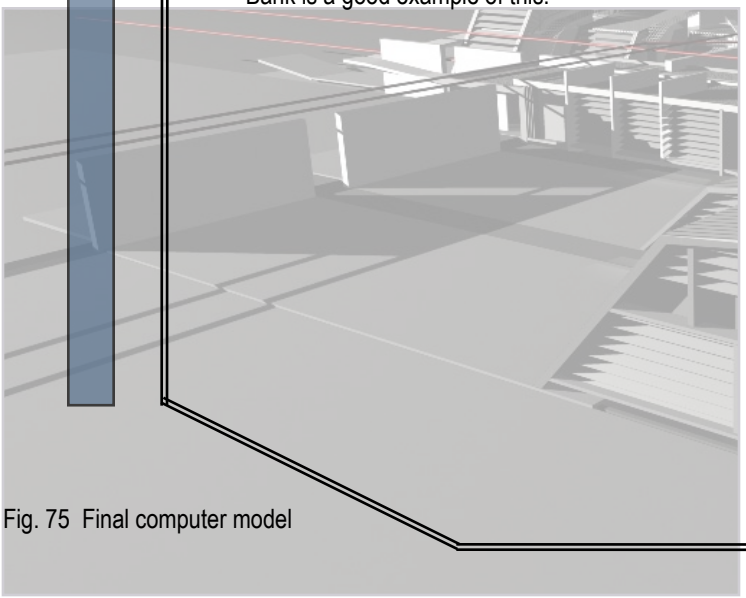


Fig. 75 Final computer model

Fig. 86 Viewconnection to Nursing College

Fig. 87 Viewconnection to bypass

Fig. 88 Viewconnection to PTA central

Fig.89 Viewconnection to Apies River

10.2.2 Movement routes:

movement is a very important issue to disabled people due to the fact that it presents them with a sygnificant amount of stumbling block,be they physical or psychological. Movement also tend to be that aspect of being disabled that tend to seperate disabled people from society, since they cannot join them in places that are not entirely accessible. This problem was adressed by making movement patterns over and around the site the primary generator of design.

The movement patterns over the site were divided into two categories namely primary (pedestrian) and secondary (vehicular)movement. Pedestrian movement was seen as most important since it closely resembles wheelchair movement and the possibilities for wheelchair movement.

The illustrated movement patterns formed naturally over the site, which means that they are the most comfortable in terms of movement.

The Spychosocial Adjustment centre was formed on the basis of these patterns. Building elements were placed on the routes to be followed across the site, thus forming destinations. The building elements and infrastructure accentuates the movement paths by bordering and defining them.

Social areas like squares are also situated along the movement path in order to facilitate the much needed social interaction between centre users and passers by.

Movement through the centre have been derived from the primary movement over the site.

A central node have also been derived from the movement pattern over the site. This central node serves as dispersion and orientation node to the centre users as well as passers-by. The disperion node has the same function as a landing would have in a ramp system. This function would be to provide a place where people moving up the ramp can rest, orient themselves as to the rest of the ramp and communicate with others moving on it.

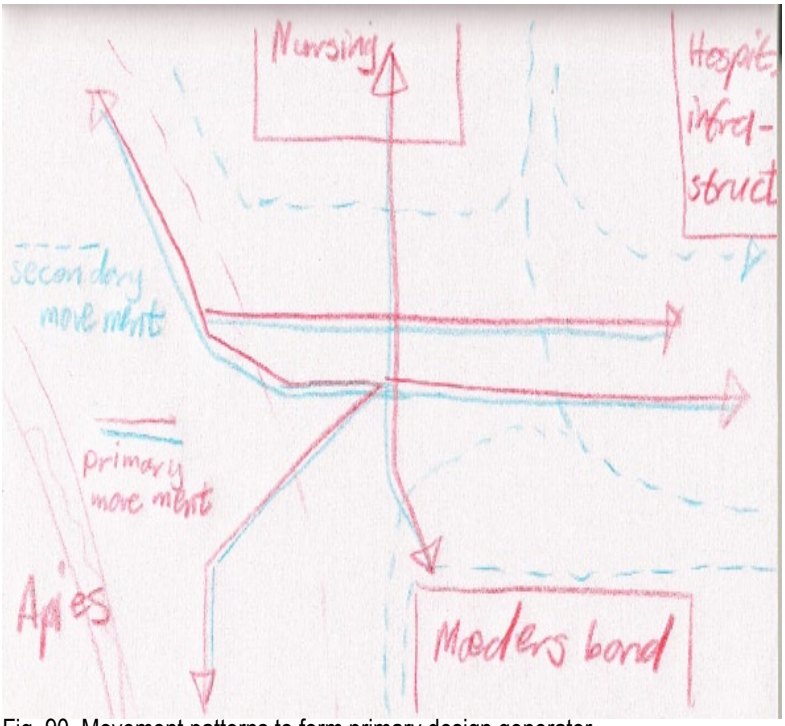


Fig. 90 Movement patterns to form primary design generator

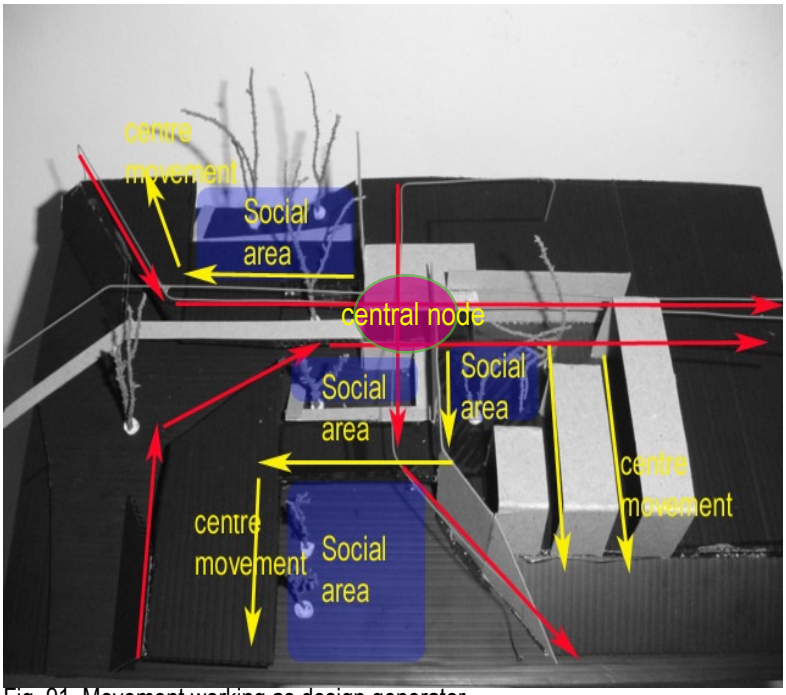


Fig. 91 Movement working as design generator

10.2.3 Site scale and hierarchy:

The scale of the site and the emmediate surroundings can be based upon a series of levels of which the lowest form the river bank and the highest form the roof of the Nursing College at 11 Stories above ground. These levels of scale definition are carried over into the building by providing different levels on which movement through the centre can be observed. A passer-by can for instance ,from one vantage point, see a wheelchair-bound person on groundlevel, firstfloor level and roof level, all at once. This manner of perception places disabled people in a light of movement capability.

People moving through the building will notice a percepotion change as different building elements are placed into different contexts while moving in a certain direction.

The neccesity of access limits the height of the building to one level above and one level below ground. The centre has a low occupation which aids the reasoning behind a smaller facility. The small size of the centre (2 stories or 6m) gives it a lower hierarchy ranking seeing as the average building height of the context is 5 stories or 15m. The aim of the centre is however not to even out the skyline but rather to react to the contextual qualities of the site. The centre does this by means of height increases at strategic places. These strategic places are the building segments that front the Moedersbond and the Nursing College. These building segments have the maximum height of 2 stories above groundlevel while the central node consists of one story.

The recognition of a larger scale was not the only deciding factor that guided the heights of the various building segments. One other deciding factor was the views to which the building responds in the larger context. The views to Pretoria central as well as to the hospital precinct and the Unoin Buildings are very important to the centre and its orientation in terms of the larger context. Connection to these points or views within the city neccesitates a higher elevation in order to facilitate a proper link to them. This fact is the other reason for having 2 stories at the counseling block and the physical therapy block.

Hierarchy:

The hierarchy applicable to the centre can be based on movement hierarchy, scalar hierarchy and visual hierarchy.

The centre plays a very important role in providing and accentuating access over and unto the site and therefor the centre is highest on the hierarchy in terms of movement. The Nursing College and the trial housing units plays a secondary role in this ragard for these are the places to which and from which movement are dispersed.

The centre is very small in proportion to the surrounding buildings. This fact places the centre low on the scalar hierarchy of the context. The connective role fulfilled by the centre increases the importance of the building since it enhances the overall feeling present in the specific context.

The centre was designed to be different to the surrounding buildings ,but not out-of-place. The centre shares various forms of connectedness with the surrounding buildings.The materials used is one such link. The centre does not create the same feeling as the institutions next to it, a fact that aids in its outstanding nature. The centre is very important in terms of the visual qualities it gives to the overall context. The centre was designed in a way that will draw attention to itself and the users thereof for this will enhance the social interaction of the centre users.

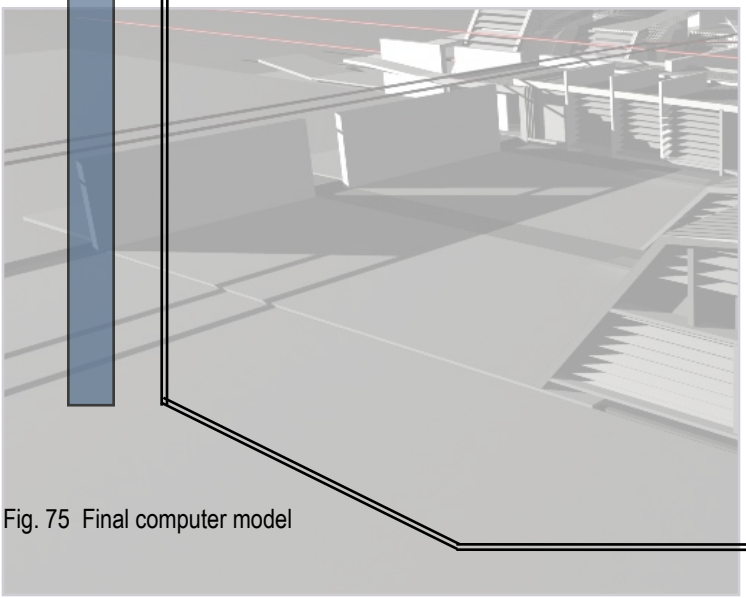
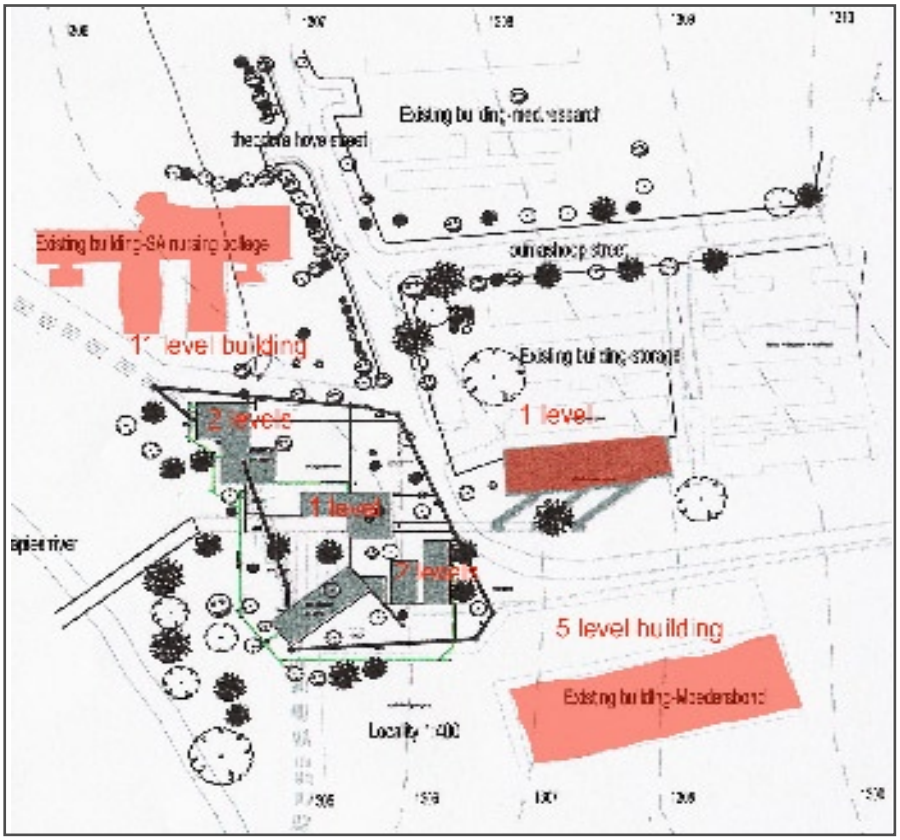


Fig. 75 Final computer model



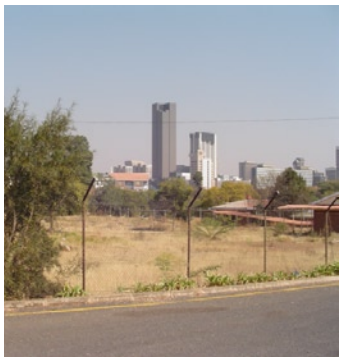


Fig.92 View and scale connection to PTA central

Fig. 93 Important buildings in terms of scale

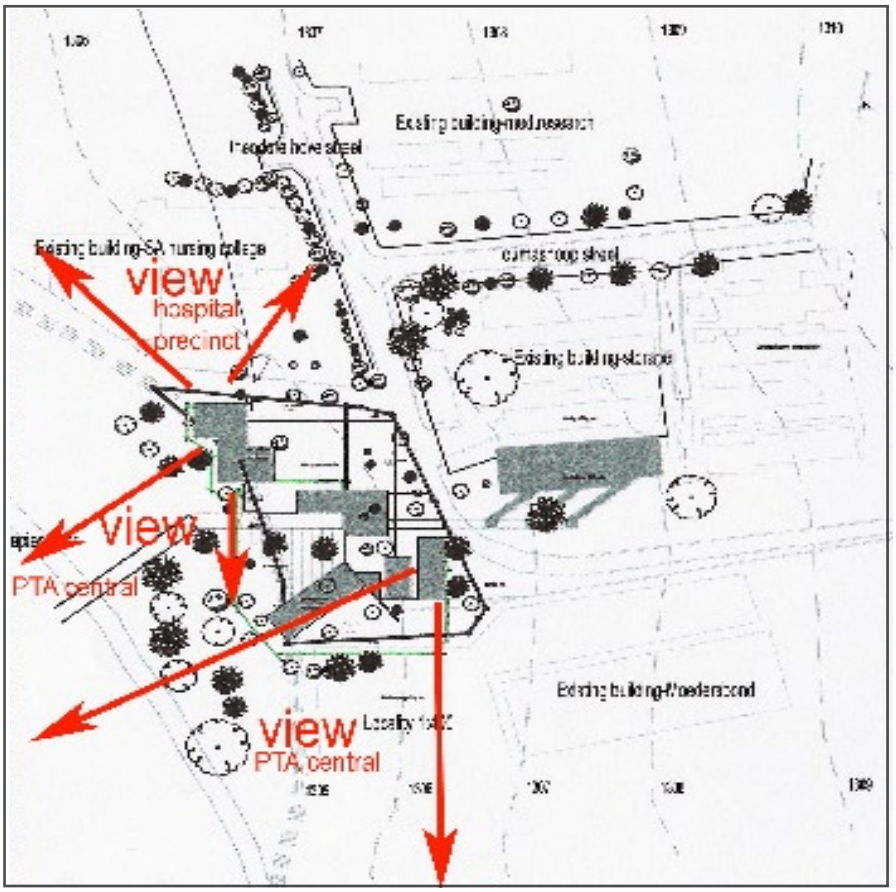


Fig. 94 Views from the Psychosocial Adjustment Centre

Fig. 95 Moedersbond scale

Fig. 96 Trial housing scale

10.2.4 Climatic context:

The climat of Pretoria is generally not one of extremes but the basic principles of northern orientation, thermal mass, cross ventilation and shading as well as stack ventilation still applies. These principles might have been enough in a building,designed for non-disabled people, but in a centre designed for disabled people who struggle with controlling body temperature, it becomes essential to incorporate HVAC systems into the building.

Northern orientation:

The northern elevations of the were tilted backwards in order to create a larger surface area for absorbing as much heat and light as possible. This action was neccesary due to the fact that the site has quite a number of trees on it which might, along with the Nursing College in the north,hamper light and heat absorption on certain days. The extensive use of louvres also flowed from the need to control light and heat absoption. Shading structures have also been placed over the northern entrances of the centre in order to provide an adaptation zone in which people can adjust from stark light outside to dim light inside the building.

Thermal mass:

The floors of the northern oriented rooms serves as thermal mass since they are all constructed of concrete. The placement of the concrete floors behind and under the louvre structures provides a further means to control heatflow into the floors. Controlling the heatflow indirectly controls the heat release during the night.

Cross ventilation and shading:

The use of cross-ventialtion as a means to cool down certain segments of the building, limited the width of these segments to a maximum of 6m. The use of cross-ventilation provided centre users another means by which they could take control of their own environment. Door and window openings have been placed in positions that will aid in creating proper cross-ventilation.

Cross-ventilation serves a dual purpose which is to vent out stale and warm air from a room and to vent in cooll air from cooler areas. These cooler areas can be found on the outside of the windows and doors that facilitate the cross-ventilation. The areas have been created by providing ample shade for the window or door to provide cross-ventilation.

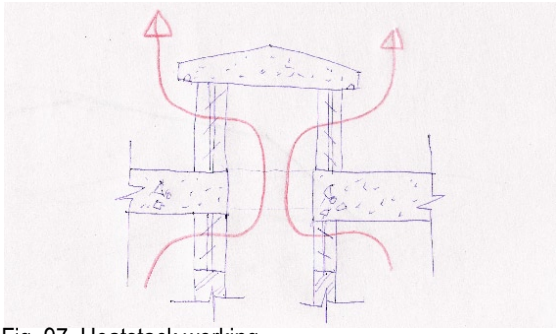


Fig. 97 Heatstack working

Stack ventilation:

The use of thermal mass and cross ventilation will be complemented by the use of stack ventilation to remove excess heat from those areas that are considered to be too warm for comfort. The most important aspect, as with every other passive system at work in the building, is that total control rests with the user of the centre. The situation is no different for stack ventilation since the user can decide when to open the stack ventilation hacth and when to shut it.

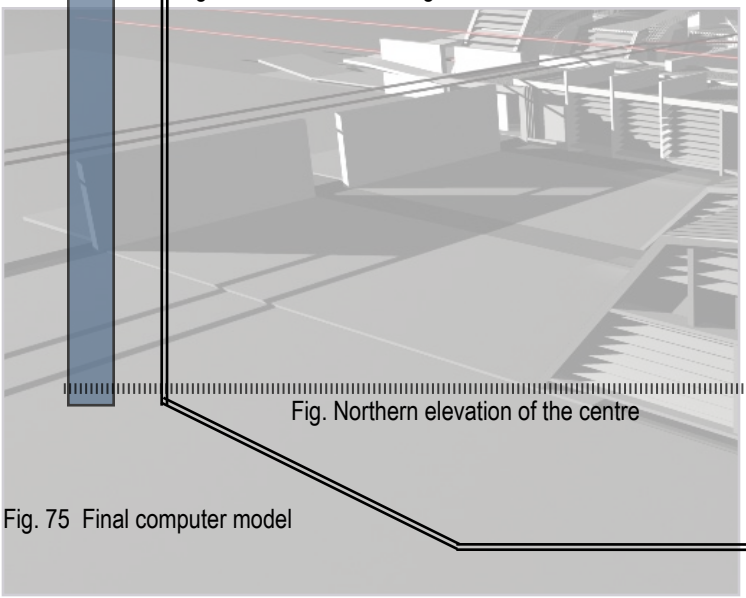


Fig. 75 Final computer model

Fig. 98 Trees on site

Fig.99 Trees on site

Fig. Northern elevation of the centre

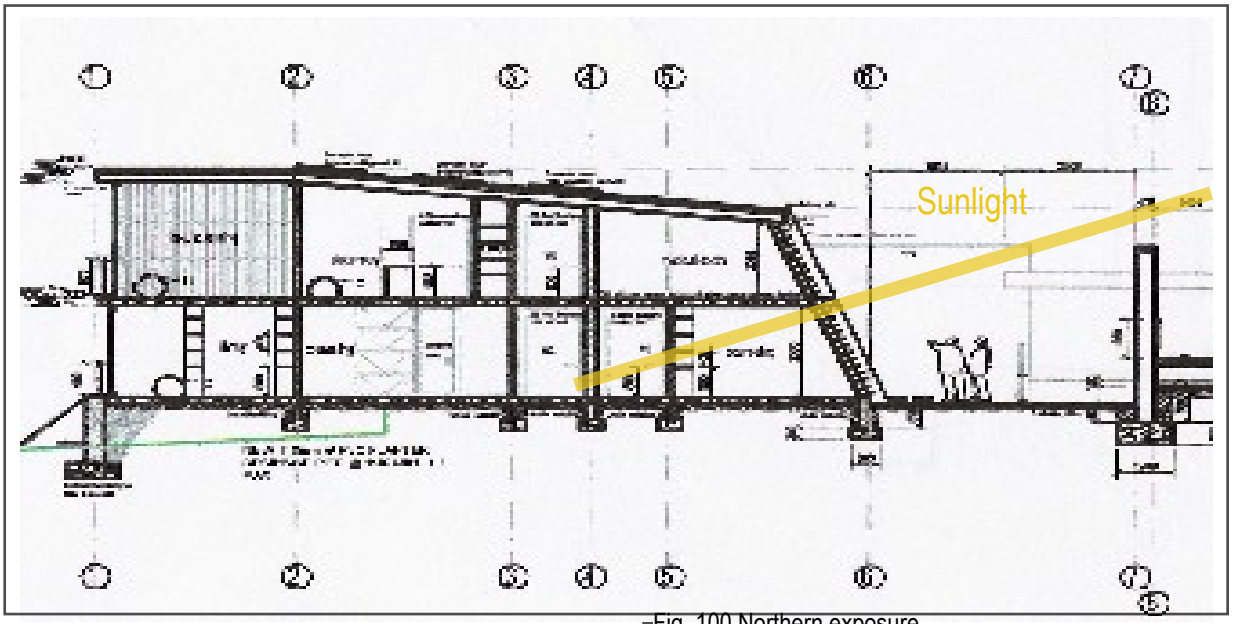


Fig. 100 Northern exposure

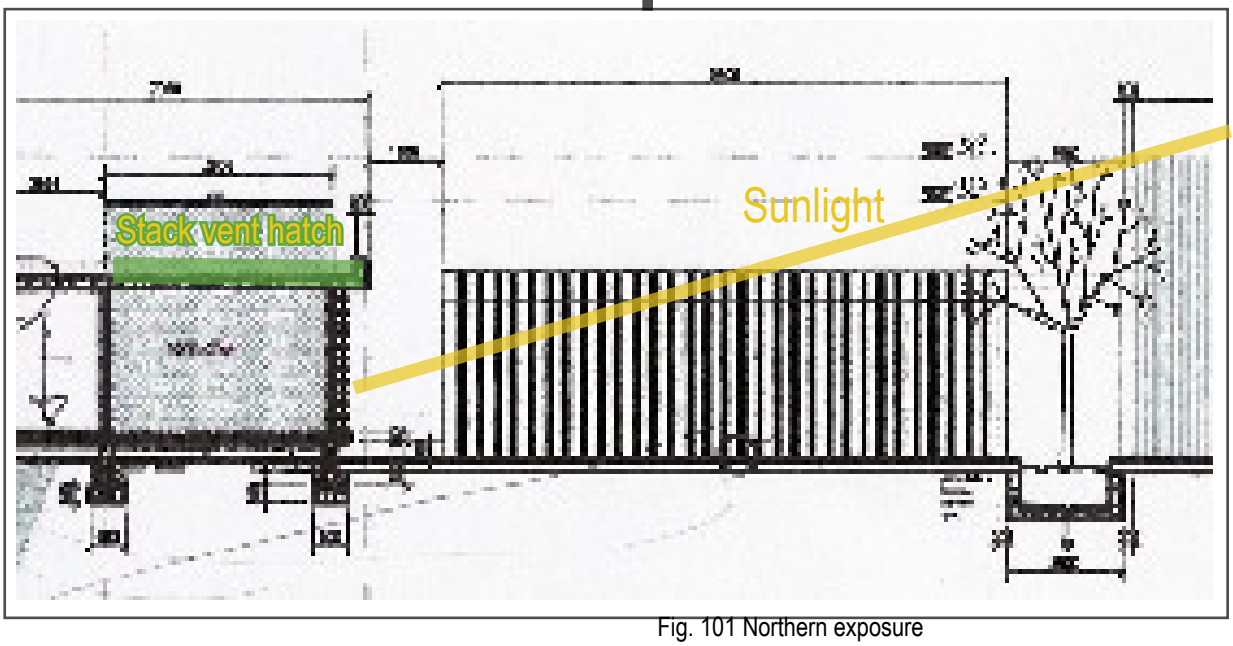


Fig. 101 Northern exposure

Fig. 102 Trees on site

Fig. 103 Trees on site

Fig. 104 Trees on site

Fig. 105 TUKS occupational therapy dept. north of site

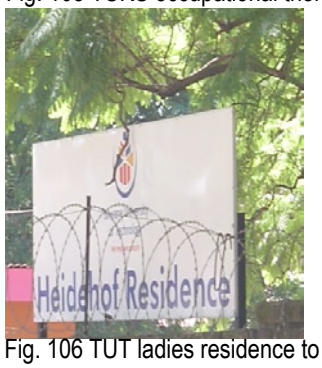


Fig. 106 TUT ladies residence to south-west of site

Fig. 107 SA Womens Organisation to south-east

Fig. 108 Tissue Bank and Bone Biology to east of site

10.2.5. Inter-site connectedness:

The centre is connected with the surrounding sites by means of tangible connection, interactive connection and function flow.

Tangible connection:

The centre's tangible connection with the surrounding contexts are by means of the steam pipes that run along the most of the boundaries of the hospital precinct. These pipes form a visual and physical connection between all the various segments of the hospital precinct.

The steam pipes are suspended from support structures which adds to the prominence of the pipe structures. The prominence of the pipe structures was used to the centre's advantage. The pipe structeures were lengthened to follow the main movement routes created by the centre layout. The lengthened segments have the new dual function of suppoorting shade structures over and housing lighting for the movement paths of the centre.

The main movement axis through the centre (east-west) links up to a derelict pathway that goes past the prospective trial housing unit, past the parking area and up to the Union Buildings Precinct. The same axis also goes over the Apies River to the Tswane University of Technology Campus and beyond to the Zoo precinct. The east-west axis thus form a movement and visual link between the centre and two very important precincts.

The north-south axis links the centre with the Nursing College and the hospital precinct beyond. The importance of the connection with the hospital precinct lies in services needed from the facilities provided in the hospital precinct. The Psychosocial Adjustment Centre primarily provides for the adaptive needs of the disabled person,thus regarding the physical treatment to be done at the hospital and surrounding facilities. It can be gathered out of this that the location of the centre as well as the connectedness form integral parts of the design.

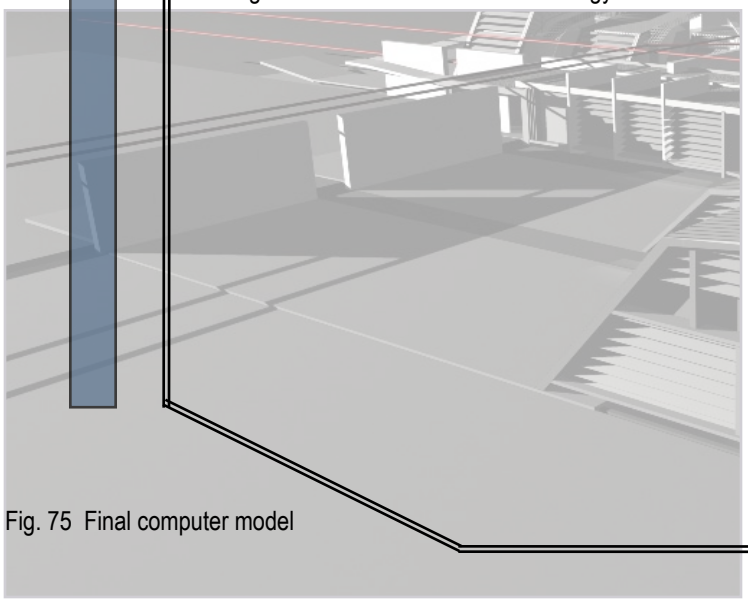


Fig. 75 Final computer model

Fig. 109 derelict pathway to union bldgs.

Interactive connection:

The intaractive connection between the Psychosocial Adjustment Centre and the surrounding contexts is by means of the movement of people from the surrounding precincts to the centre and visa versa. These people provide a service to the centre users and then go back to their particular precinct,be it hospital or educational etc. The services rendered unto the centre users is in aid of their adjustment to their new physical and psychological state.

The centre users will also move out of the centre towards the surrounding precincts,depending on their state of mobility. This movement might be to receive treatment or to provide a service to the facilities housed in the vacinity of the centre.

Function flow:

What is meant by function flow is that the services provided by the centre is housed in buildings or open spaces in the nearby precincts. This fact will passively force the centre users to move through the centre as well as the nearby precincts like the hospital precinct and the educational precinct.

These outside functions are the trial housing which is housed in a building across theodore hove street, the main basketball and tennis courts which is housed at the Nursing College and the Tertiaty education facilities which is housed at the Tshwane University of Technology campus.

10.2.6. Conclusion:

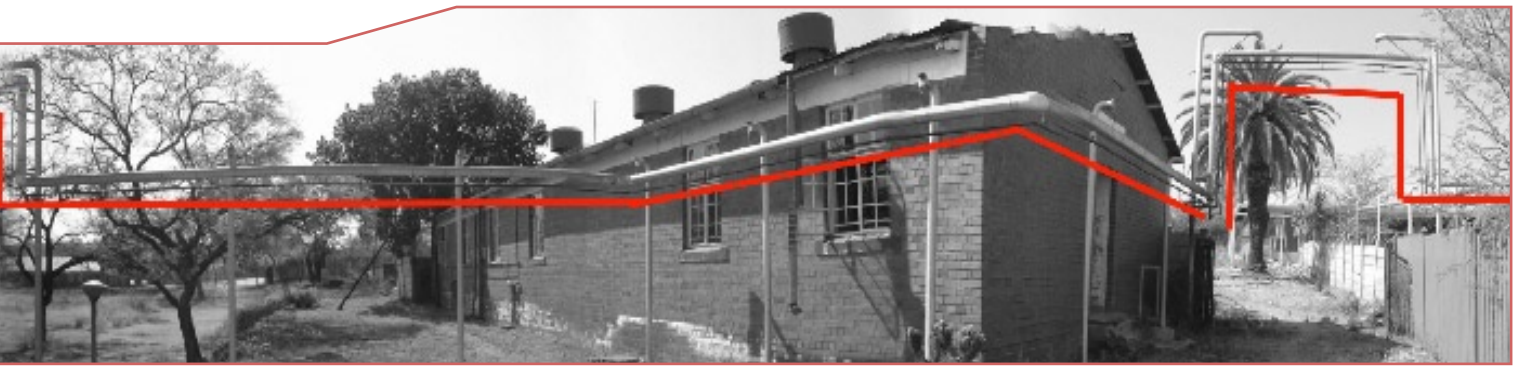
The physical context played a commanding role in the design of the Psychosocial Adjustment Centre due to the fact that the physical environment of the disabled person often present him/her with a very wide range of obstacles. The physical environment and the rules governing it should therefor be the number one consideration in predicting potential problems as well as solutions to them.

Fig. 110 Connection to prospective trial housing block

Fig. 111 Connection over Theodore Hove Street

Fig.112 north-south connection woth hospital precinct

Fig. 113 north-south connection woth hospital precinct



10.3. Handi-capable factors:

The psychosocial adjustment of a newly disabled person goes hand-in-hand with physical well being.

There are a number of activities a disabled person can do in order to better understand his/her physical state. The activities housed in the Psychosocial Adjustment Centre are:

*the workshops where a wide variety of objects will be built and maintained.A disabled person making use of the workshop

Fig. 114 Social acceptance
Werner, D., 1998:1

Fig. P1

facilities will be taught the necessary skills needed to take control over the environment in which the particular user lives. There are afterall a great number of changes that must be made to an existing residence in order to accomodate a newly disabled person.

*The scaled down sports facilities will provide the users of the centre a bridge by which they can become use to their new physical state. It would then be possible to move on to full scale facilities once they gap between old and new physical state have been bridged.

*The recreational facilities will provide for further skills development.Skills development is very essential since most newly disabled people find it difficult to continue the activities they were used to, like painting for instance. The recreational facilities will also provide the much needed social interaction between the users of the centre.

*Public areas play a demanding role in providing they other side of the social needs of a disabled person, which is interaction with able bodied people.

*The trial housing facilities will play a further adaptive role by providing a home environment that can be used for a limited time in order to better understand what is needed in one's own home.

A person will feel in control of his environment if he/she can take control over the manner in which it is used. A good example of this is the provision of pressure meters by which a wheelchairbound person can measure hi/her seat pressure. This activity will aid in combatting pressure sores.A nother example of control mechanisms are the provisions like window levers that enables a user to control his environment within the building.

The remaining facilities like the counseling and physical therapy facilities for instance, will provide a base for disabled people on which they can build the other aspects of their lives. These faclities will also be valuable in providing support during the adaption process.

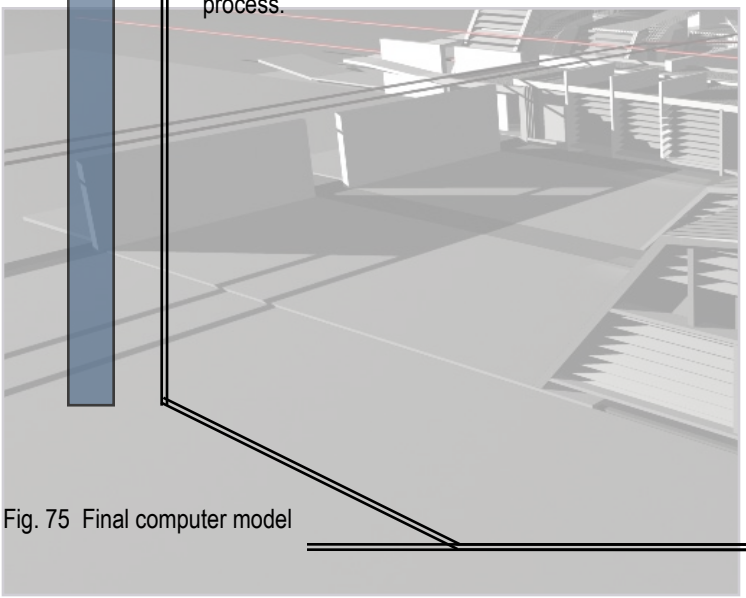


Fig. 75 Final computer model

Conclusion:

The keyword in the Psychosocial adjustment of a disabled person is undoubtedly CONTROL. A newly disabled person feels as though he/ she does'nt have any control over his/her own body or the physical and social environment in which they are. Adapting is a process that shoudl have as final objective the self-satisfaction of the person envolved.

The users of the centre must however also realise that their families and friends are very much part of the adaption process. It is therefor essential that the all the facilities provided in the centre be accessible to families and frineds as well.

Fig. 115 Building chairs
Werner, D., 1998:195

Fig. 116 Adapting a chair
Werner, D., 1998:205

Fig. 117 Social interaction
Werner, D., 1998:283

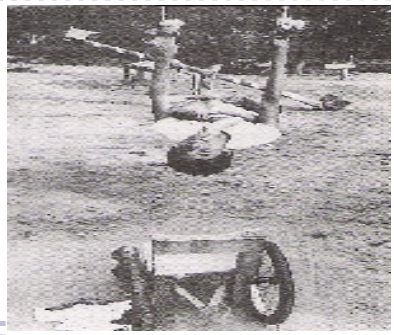


Fig. 118 Accepting yourself
Werner, D., 1998:306

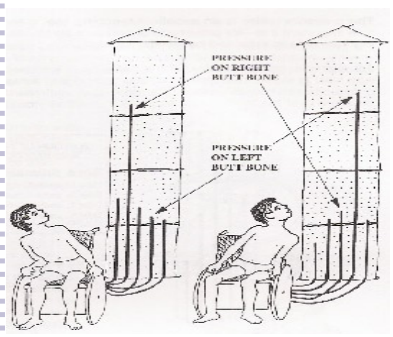


Fig. 119 Measuring pressure
Werner, D., 1998:161

Fig. 120 Accepting yourself
Werner, D., 1998:26

Fig. 121 Painting
Werner, D., 1998:314

Fig.122 Accepting yourself
Werner, D., 1998:236

Fig. 123 Karate
Werner, D., 1998:262

11 Precedents

Precedent studies:

The study of precedents that has bearing on a psychosocial adjustment center will be divided into two parts. These two parts are the physical precedents like appropriate buildings and the non-physical precedents like various other measures taken in the quest for an egalitarian society as well as psychological precedents that will aid in determining responses to different environments.

The main approach taken in precedent investigation was to look at precedents that do not necessarily have any bearing upon direct inclusive design. Designing a basic inclusive building is rather pragmatic in nature and can be resolved to a certain extent by just having similar buildings as precedent. The quest for designing an inclusive building with a difference can only be completed by looking at precedents that can add to the design and essence of the building rather than only to it's pragmatic resolution.

11.1 Physical precedents:

-Buildings that can serve as a precedent as to a new way of designing inclusive buildings
-Psychological requirements
-Precedents concerning the Third vernacular
-Buildings and places that adds to the design quality of the center as a whole.

11.2 Non-physical precedents:

1.2.1 Difficulties during everyday life

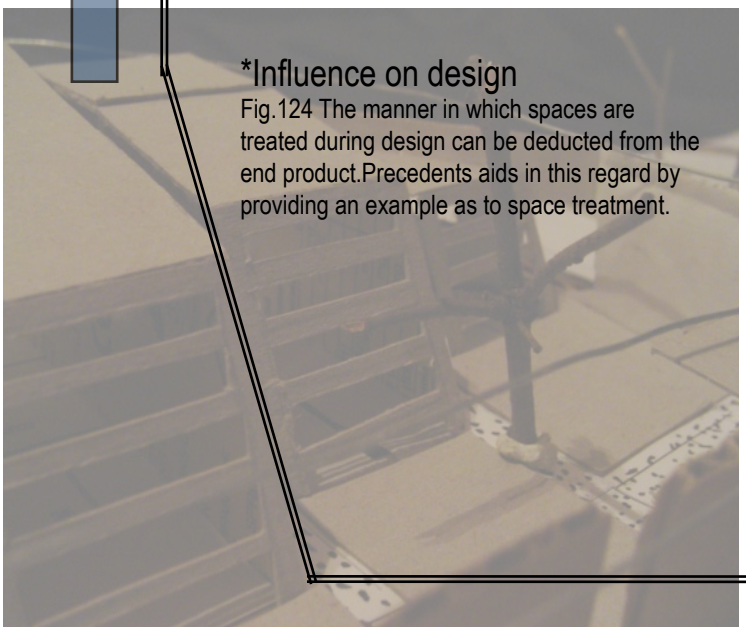
One way to determine what the specific difficulties are that a disabled person experience is to place yourself in the shoes of such a person. The wheelchair experiment was done for this reason. Another way of determining difficulties would be to consult people in the know like therapists and disabled people for instance.

The results gathered from such experiments could guide a designer to the design of an inclusive environment that takes personal experience into account. It is often this personal experiences that are lacking in guidelines for inclusive and universal design.

A centre such as this one needs a client that can aid in the design process.The people consulted during the experiments could therefor be seen as the clients for whom the centre is designed.

11.2.2 Psychological

Seeing that psychology plays such an important role in a psychosocial adjustment center, it would be essential to look at precedents done with the purpose of evoking certain psychological responses. These precedents will also have a lot to do with proportion and the perception thereof since proportion differs from able to disabled people.



*Influence on design

Fig.124 The manner in which spaces are treated during design can be deducted from the end product.Precedents aids in this regard by providing an example as to space treatment.

The works done by le Corbusier and Fibonachi as well as works done and essays written on the responses of disabled people to proportion will be looked at. One way of striving towards an egalitarian society is to create proportions in a building that puts able and disabled people on the same physical level.

Fig. 125 Work context -being able to perform everyday tasks
Werner, D., 1998:274

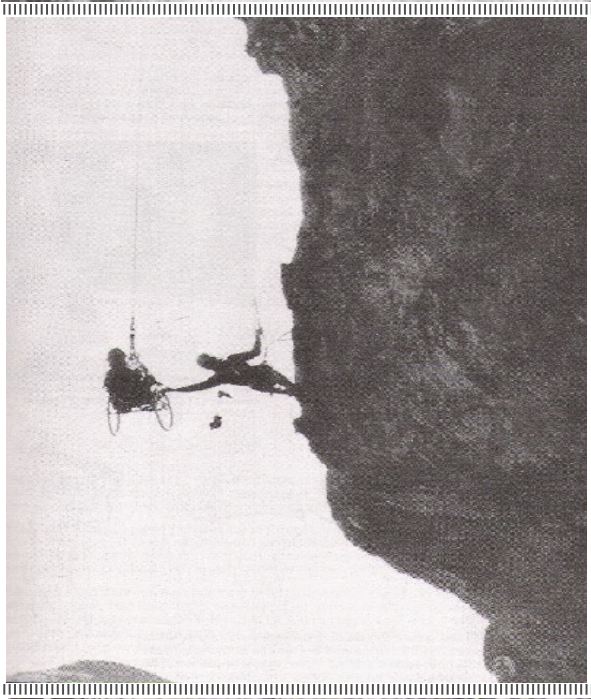


Fig. 126 Outdoor context-being able to perform extraordinary tasks
Werner, D., 1998:145

Fig..127 Home context-basic difficulties removed
Werner, D., 1998:151

Fig.128 Toronto Community Centre section
Diamond, Schmitt (1996:67)
Building designed by
A.J.Diamond,D.Schmitt
and company 1968-1995

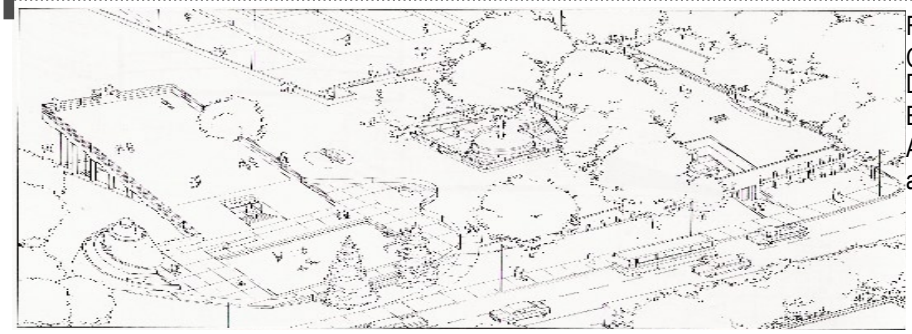


Fig.129 Toronto Community Centre aerial view
Diamond, Schmitt (1996:64)
Building designed by
A.J.Diamond,D.Schmitt
and company 1968-1995

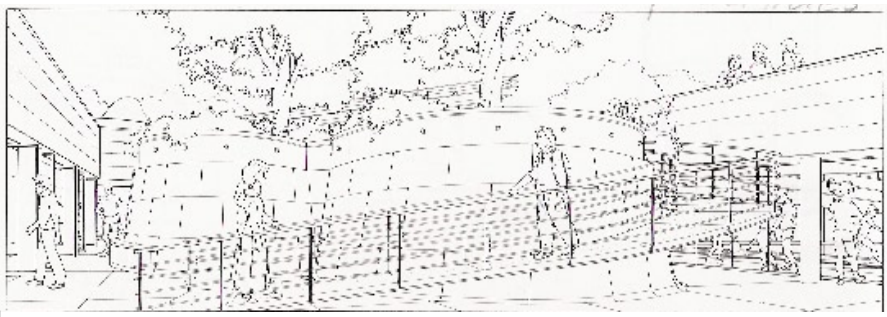


Fig.130 Toronto Community Centre ramp
Diamond, Schmitt (1996:64)

Fig.131 Newcastle Town Hall entry
Diamond, Schmitt (1996:61)

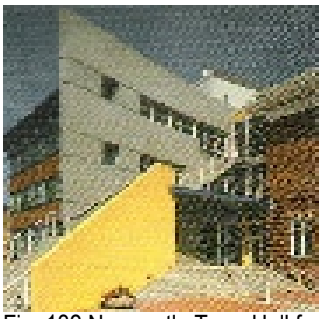


Fig. 132 Newcastle Town Hall facade
Diamond, Schmitt (1996:61)Building designed by
A.J.Diamond,D.Schmitt
and company 1968-1995

*Influence on design

Fig.124 The manner in which spaces are treated during design can be deducted from the end product.Precedents aids in this regard by providing an example as to space treatment.

11.3 The A.J Diamond, Donald Schmitt and Company competition entry for the North Toronto Community Centre (Toronto, Ontario, 1987) :

Loss of parkland:

The site chosen for the psychosocial adjustment centre is one rich in trees and natural features. The loss of natural features within any city (like Pretoria)is inexcusable. This fact might then necessitate an approach that has as its aim the preservation of as many natural features as possible.

The A.J Diamond, Donald Schmitt and Company competition entry for the North Toronto Community Centre took a mainly sub-terrainian approach with the central aim of retaining all the natural features provided by the site. The building thus became a park-like development. The Psychosocial Adjustment Centre(hereafter called PAC) will also benefit from retaining the natural character of the the site.The positive effect a natural environment has upon both social interaction and psychological well-being must be realised end utilised.The east-west sloping nature of the site of the community centre helped to limit the underground feeling created by the building by exposing the eastern façade to sunlight as well as unhindered access.The PAC is also situated on a east to west sloping site and will embrace it in much the same way,thus benefiting from the site in the same way.

The further advantage provided by this approach to the PAC is the possibility of enhancing security since more of the building can be seen at any one time, improved disability access due to the prominent use of ramps and lastly the possibility of better climate control due to the sub-terrainian nature of the building.

11.4 The Newcastle Town Hall, Bowmanville, Ontario, 1986:

Consolidating facilities(context response):

The Newcastle Town Hall consolidates government facilities in a building that is made up of the original town hall and a new structure. The retention of the old building provided an opportunity to achieve historic continuity.

The project is organised around a main organising element, which is a curved wall, which serves as a signpost for the whole project as well as a backdrop to the historic building. The wall can also be seen as a multi-linking element for it also links up (by means of extension) with an adjacent square, which is integrated with the civic centre. The PAC has at its centre the main access and Admin block which will serve to orient visitors and users. The admin block links up with adjacent sites and buildings by means of the dividing walls originating from it.

The new building (an office building) also links up with the existing building by echoing the cornices, window proportions and materials of it. The proper use of, and the play with proportions is very important in designing for disabled people for it not only links buildings and elements but also the user to the building. The presence of Third Vernacular buildings in the vacinity of the PAC Provides opportunity for the echoeing of some of the principles used in the design of these buildings,thus responding to context .

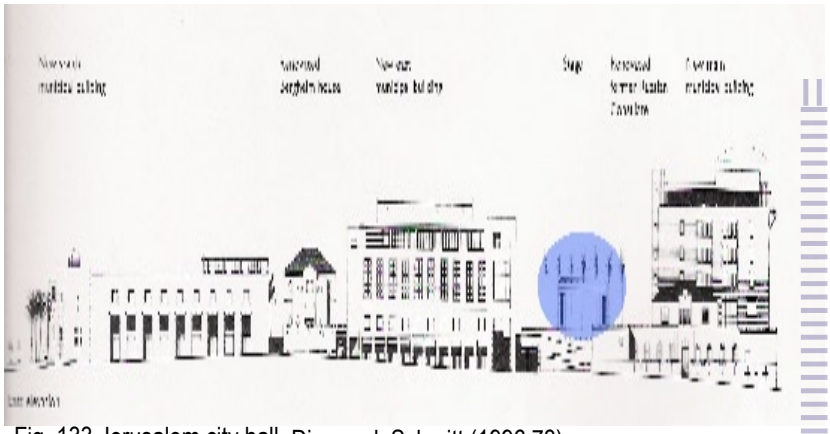


Fig. 133 Jerusalem city hall Diamond, Schmitt (1996:73)

Fig.134 Jerusalem City Hall portico
Diamond, Schmitt (1996:78)

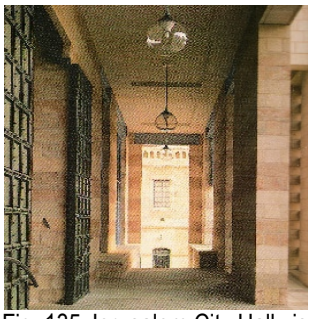


Fig. 135 Jerusalem City Hall visual link
Diamond, Schmitt (1996:78)

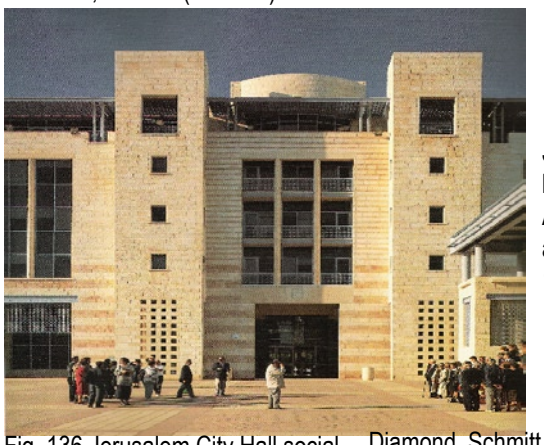


Fig. 136 Jerusalem City Hall social Diamond, Schmitt (1996:68)

Jerusalem City Hall building designed by A.J.Diamond,D.Schmitt and company 1968-1995

Newcastle Town Hall designed by A.J.Diamond,D.Schmitt and company 1968-1995

York University student centre designed by A.J.Diamond,D.Schmitt and company 1968-1995

Fig. 137 York Univ. section
Diamond, Schmitt (1996:82)

Fig. 138 Newcastle Town Hall
Diamond, Schmitt (1996:58)

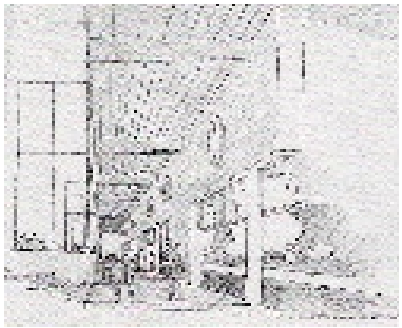


Fig. 139 York Univ.linking colonnades
Diamond, Schmitt (1996:82)

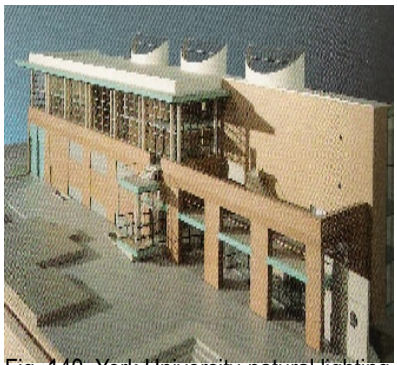


Fig. 140 York University-natural lighting
Diamond, Schmitt (1996:82)

*Influence on design

Fig.124 The manner in which spaces are treated during design can be deducted from the end product.Precedents aids in this regard by providing an example as to space treatment.

11.5 The Jerusalem City Hall, Jerusalem, Israel, 1988:

Links:

The site for the Jerusalem City Hall straddles a ridge that divides the city into east and west. To the west is the Jaffa road and Jewish Jerusalem and to the east is the Damascus gate as well as Arab Jerusalem. The building thus has to serve a linking or bridging function in terms of regional relations. This is very relevant to the site for the psychosocial adjustment centre, which will play a linking role within the local district, created for it.

The three main challenges addressed by the Jerusalem City Hall was the use of the diverse and oddly positioned buildings to the best urban design advantage, the creation of an accessible yet contained urban square and lastly the designing of a building that would be prominent within the Jerusalem fabric without disrupting it. The PAC will also function as an urban square but to a smaller scale. This square will enable social interaction between centre users and the public.The PAC is a prominent building that takes the overall scale of the precinct into account and by this it does not disrupt the fabric of the precinct.The role of the PAC within the urban setting had been analised in order to determine the proper response to the urban needs applicable to the site and the precinct.

The north-south axis, which is anchored at the old Jerusalem City Wall, threads through a series of renovated buildings, a small square, a garden and the main lobby of the city hall building. These, and other paths and connections provide coherence to the various pathways and spaces that dot the regions around the City Hall complex. The PAC needs to be properly connected with the city in order to facilitate the social interaction needed by the users of the centre. Due to the importance of the ramp and the path in the movement of a disabled person, it would be very appropriate to make use of pathways to connect the centre to the city.

The Jerusalem City Hall complex further play a significant role in relating to the pedestrian by providing details at eye level. This was achieved by using banded stonework on the lower levels of the building, where it would be most obvious. The emphasis of the pedestrian realm is very important to any building, the difference in the psychosocial adjustment centre will however lie in the extension of this realm to that of the wheelchair user. The user of the PAC will find connectign with the centre on a physical and psychological level much easier if there are detail provided with which he/she can relate. These details can take the form of textures ,drawings by disabled people, vistas etc.

11.6 The York University Student Centre, North York, Ontario, 1988:

interior perception:

The student centre plays an important role in the implementation of the campus master plan for it helps create a close relation between buildings, provides for climate-controlled linkages and also helps to define the entry green. The role of the centre within the larger context is very important. This needs to be remembered with the psychosocial adjustment centre as well for it falls within several urban design frameworks.

There are three elliptical light wells that penetrates the upper levels of the building in order to provide light to the rooms clustered deep within the building, provide visual access to the clubs housed in the building, thus increasing membership and safety. Areas that promote interaction and visibility can be very therapeutic to patients with spinal cord injuries for they become aware of each other as well as the new surroundings and people and visa versa.The use of passive design principles in conjunction with other,more basic, design principles in the design of the PAC will also create a degree of freedom which centre users can use to manipulate their own environment.

A variation of ceiling height according to the rooms can be found in the student centre. This aids in placing functions in the proper surroundings as well as to focus attention on what is needed in a room. The use of appropriate proportions is vital in the treatment of physically disabled patients for they have a different view of proportions. It should be noted here is that the use of appropriate proportions applies to the exterior as well as the interior.

11.7 The Solomon R. Guggenheim Museum, New York by Frank Lloyd Wright and the Pompidou Centre for Arts and Culture by Renzo Piano and Richard Rogers:

The manner in which the ramps of the museum has been designed is very relevant as a precedent since it has been done in an un-orthodox manner what ramps is concerned.
The ramp governs the largest part of the building, which is in fact the actual museum area.
The ramp is treated as a special design generator that influences the rest of the building.

Ramps should not be regarded as a burden or restriction to the designer, as it often is. Using the ramps (which is the main access providers of the centre) as primary generator provides a way to incorporate them into the early stages of design. This will in turn eliminate the hassles to be had with late insertion, at which stage there is little time left for lengthy considerations.

The inside-out approach taken in the design of the Pompidou centre is of particular relevance to the psychosocial adjustment centre. The prominence of access is a consequence of this type of approach. The prominence of access aids the user in understanding the way in which the building functions.

The Psychosocial Adjustment Centre will have the same approach to access and function definition. The nature and form of the modes of access will give an idea as to the internal working of spaces. A building with well-defined access also reads very well to new users, of which there will be quite a number throughout the lifespan of the centre.

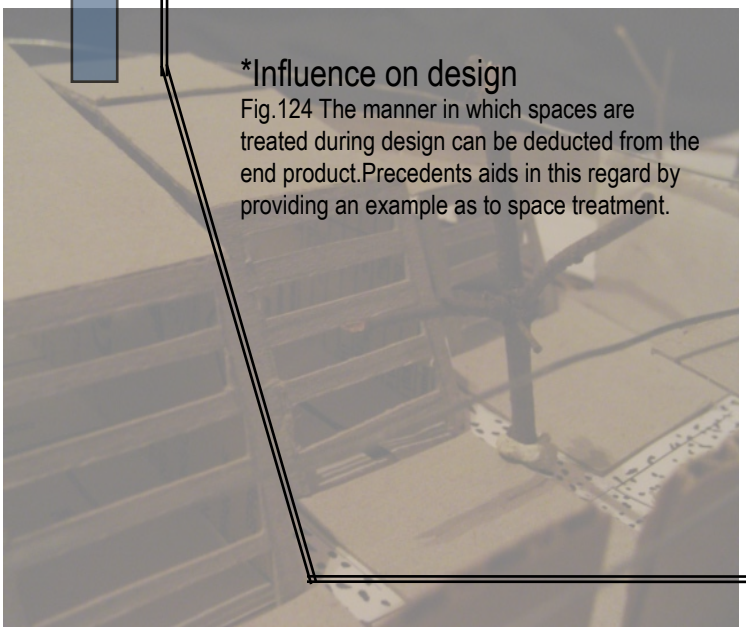
11.8 The proportional system (Modular) used by le Corbusier:

Notre-Dame-du-Haut, Ronchamp, France is only one example where le Corbusier used this famed system of his. The system is based upon 2.2m which is the height attainable by an average height man standing with his arms raised.

The Psychosocial Adjustment Centre will also make use of a proportional system, seeing as it provides a way in which the user or occupant can relate to the spaces around him. The system used in the centre will however differ from the one used by le Corbusier since it will be based upon a man seated in a wheelchair. This proportional system will influence ceiling heights, door lever position, table heights, passage widths etc.

11.9 Symbolistic art:

The symbolist artists order, connection as well as the form of their verbal still lifes to the scrutiny of the observer. They also experimented with the multi-sensory experiencing of paintings by considering smell, sound and even taste. The baseline was to experience an entity by means of that sense not usually associated with it. This manner of experiencing something is known to psychology as Synesthesia.



*Influence on design

Fig.124 The manner in which spaces are treated during design can be deducted from the end product.Precedents aids in this regard by providing an example as to space treatment.

The use of various senses to experience and understand the PAC will be very important seeing as users with differing physical disabilities will use the centre. Each user and type of user will have a different grasp of the building, depending on the senses he/she will rely on to orient him/herself.The visual resources like vistas will for instance have great meaning for those able to see. The sensation of touch will on the other hand be a much more relevant sense to blind people. Touch will aid them in knowing how they are moving and when they are changing zones for example.Centre users must also learn to make use of alternate sense for guidance especially if they are suffereng of sight impairments. An adequate range of sensory resources will aid this adjustment to the use of alternate senses.

Fig. 141 Guggenheim Museum New York-York movement central.Fleming,W (2001:655) Building by Frank LLoyd Wright

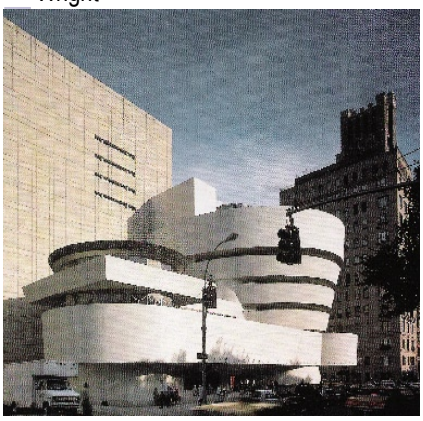


Fig. 142 Guggenheim Museum New York-movement central. Fleming,W (2001:656) Building by Frank LLoyd Wright

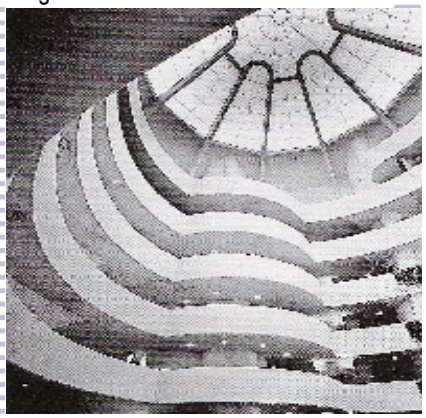
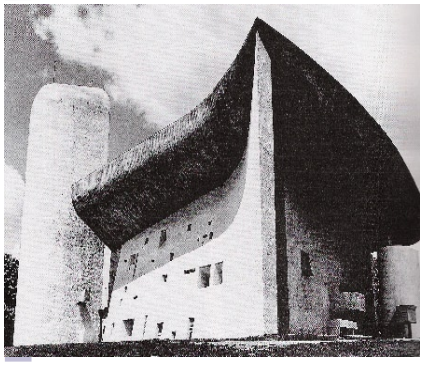


Fig.143 Notre-Dame-du-Haut,Ronchamp,France. Modular used. Fleming,W (2001:656)
Building by le Corbusier



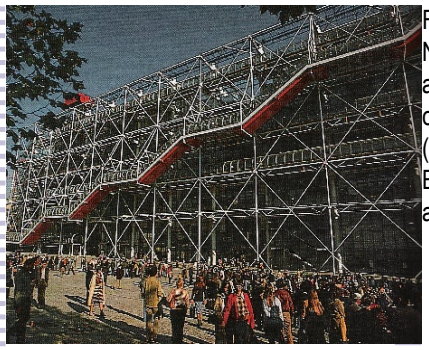


Fig. 144 Pompidou National Centre for Arts and Culture-movement clear. Fleming,W (2001:660)
Building by Renzo Piano and Richard Rogers

Fig. 145 Mont Ste.-Victoire-sensory experience. Fleming,W (2001:574)
Painting by Paul Cezanne

Fig. 146 Pompidou National Centre for Arts and Culture-movement clear. Fleming,W (2001:661)
Building by Renzo Piano and Richard Rogers

11.10 Personal interviews:

11.10.1 Elsabé Brand and Elsabé du Plessis :
(Physiotherapist and Occupational therapist respectively at Elizabeth Conradie School for the physically disabled, Kimberley)

- Which disabilities, from the perspective of a therapist, are not being catered for in design?

Designers often neglect the fact that there are a wide variety of disabilities. People in wheelchairs may be blind or deaf or both. Buildings need to cater for the needs of as wide a variety of disabilities as possible.

- How do children with injuries cope with having a disability? (Newly disabled people) How do children cope with therapy?

The reaction depends on personality. Some of them resist the fact that they are now disabled while others might be depressed, depending on their and their family's history of depression.

One way in which to approach the problem is to let the person understand the total scope of his/her disability, he/she need to face the reality of people staring and He/she will struggle to get by. One should also avoid pampering the person.

Adjusting things in the person's environment in such a way that he/she cannot recognize any differences makes the process of adjustment much easier. It is also essential that the person receive personal attention.

- Does the school satisfy the specifications and regulations in terms of design for disabled people?

The school is the best of its kind in South Africa and it has excellent facilities that cater for all the needs of what can be termed "basic physically disabled people", In other words, people with body disability only.

The major problem with the school is that it does not satisfy the needs of physically disabled people with hearing and sight impairments. The school has a widely spaced layout, a fact that makes commuting difficult.

- Do the children like to go to town and go to the movies etc.?

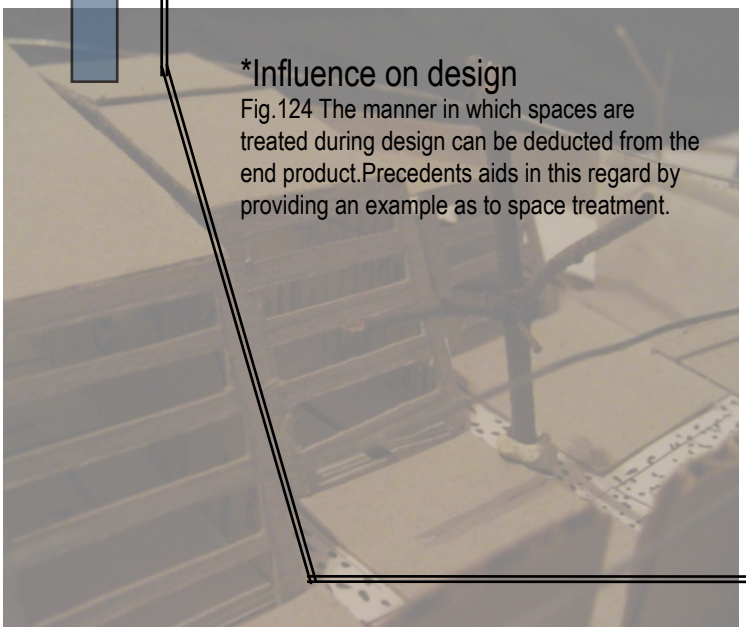
Yes. They might be disabled, but they still like to socialize.

- How should you say could one protect and strengthen the rights of disabled people in South Africa?

One way would be to train people to be indirect contact with the government departments in order to make them aware of the rights and needs of disabled people.

- What is your position on a psychosocial adjustment centre?

The idea is always good but you need to remember that it would always be more beneficial to link such a centre with physical therapy since people differ in the stages they need therapy in. Some might need it during physical therapy already. You would also have to instate a follow-up programme that people can attend in order to monitor their physical and psychological state, the principle of Alcoholics Anonymous springs to mind.



*Influence on design
Fig.124 The manner in which spaces are treated during design can be deducted from the end product.Precedents aids in this regard by providing an example as to space treatment.

It would be important to work with everything he/she has left in his/her life and develop it further. The family would also need counselling, as physical disability will have an effect on them as well. Exposure to the outside world could be very important to the social adjustment process, therefore it would be important to provide access to the outside world.

- Which aspects of specifications are often not adhered to?

Bathroom doors are often too narrow and they often lack in enabling return access. Showers are better and applicable to more people than baths. If a bath is used, it should be built up to a level that co-ordinate with the level of a wheelchair. Light switches and wall sockets should be at the right height. Cinemas often represent a problem since the available seats or positions for disabled people are situated in places that make viewing awkward, even for people without disabilities.

Conclusion:

Designing for disabled people requires a deeper understanding of disability as well as attention to detail. One cannot change the context of the disabled with a singular project. Change is a process but it will only start if someone decides to set some sort of change system in motion.

The fact that a person is disabled does not make him/her useless; it merely represents a change in the makeup of the person's context. Design should be responsive to this new context and aim to enhance and develop it as far as possible. Design should always take physical as well as psychological context into account.

11.10.2 Dorothy Ann Howitson :
(Vice Chairperson for The National Council for Persons with Physical Disabilities in SA and a quadriphlegic herself)

The crux of what she said:

The home is the comfort zone of the disabled person and a place where he/ she should feel safe and supported. This is where change and adjustment to the building should start. One should also remember that the person has only changed physically, his/her soul and personality has not changed at all. Working with what the person has left will offer him/her the opportunity to feel needed and worth something.

The paradigms in South Africa need to change. The departments of Trade and Industry, Education, Technology and Science as well as land affairs need to recognize the rights and needs of the disabled as well as implement strategies to accommodate them. We still distinguish between black, white, brown and yellow in this country, why is it such a problem to add disabled to the equation?

Society needs to be made aware of the fact that inclusive environments are just as accessible for them as it is for disabled people and such environments will not be detrimental to them, as they would like to think.

Inclusive design does not only mean response to parameters and specifications, it also means the inclusion of disabled people into the activities of society.

11.11 First time wheelchair experience:

Shopping:

- Certain things are too high on the shelves
- Heavier objects on the floor like Coke bottles cannot be lifted
- The use of a trolley or basket is out of the question, which limits the amount of things that can be bought
- When paying for products, one cannot see the price on the till screen from a sitting position
- The payment isle is too narrow
- Shaded veranda cannot be accessed. One can only move in the sun, in the road behind dangerous cars
- People ignored me sometimes, only to gossip behind my back
- When I'm in the way of someone he/she did not even bother to say: Excuse me. They just stretched pass me
- Dog food cannot be bought by oneself
- I could not pass between two people standing next to each other in an isle
- Chest freezer lid too heavy

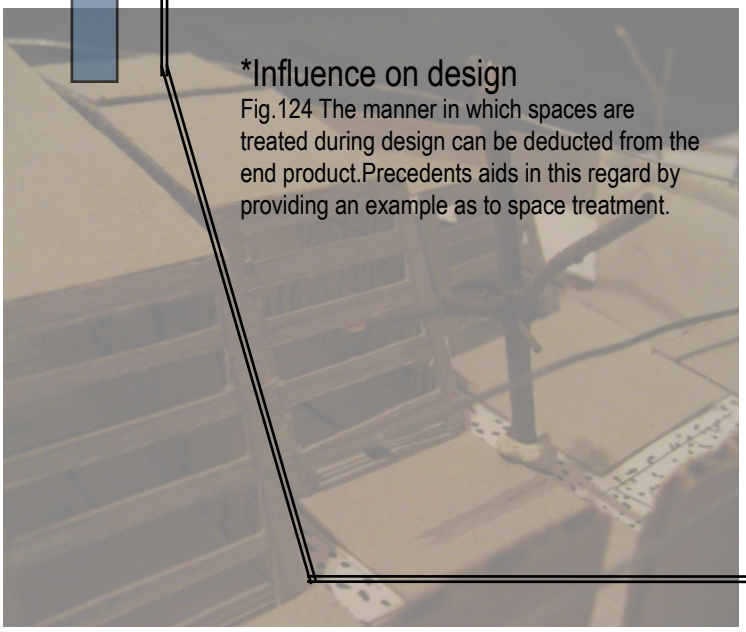
- The bottom most objects in chest freezer cannot be reached
- The meat at the back of the fridge cannot be reached, the fridge is too deep
- Pyramid type shelf arrangements is troublesome
- My hands got dirty from the filth on the floor
- Pay points with shelves in front of them is inaccessible
- Doors are difficult to enter especially double doors with the one side closed. These doors are too heavy as well
- Small thresholds with a little ramp on the one side and a loose rug on the other is problematic
- Ramp shortage has the effect that one has to move long distances in order to get unto higher levels
- Crossing a busy road takes much longer than for able people. When an object is dropped into such a road, picking it up makes the crossing even more dangerous

Spent the day in- and around the house**:**

- Cupboards too high and too low
- It is not possible to reach for anything from sitting in a wheelchair
- It is impossible to navigate loose riding surfaces (garden becomes inaccessible)
- Roof fans unreachable
- Light switches difficult to reach, especially when above something like a cupboard
- Conversation difficult since you have to look around a lot.
- Using an “average” toilet is impossible.
- Is happens often that you fall forward
- Average doors and hallways are much to difficult to navigate (turn-rounds can only be done in doorways)
- Small skirting on the floor causes instability
- Carpets navigates and turns difficultly
- Working surfaces are too high
- TV’s and coffee tables are too low
- Can’t pick things up from the floor
- Can’t pet animals
- Dishes can’t be washed unless sink level changes
- Unevenness on pavement becomes difficult to navigate
- You tend to drift from a wheeling surface that is not completely horizontal
- People expect you to be able to do more than you actually can
- A small little pet becomes a good centre of attention in conversation
- Getting on and off a bed takes upper body strength which is not always possible for variant disabilities
- It is impossible to open windows unless you can position yourself right next to it.

Showered or bathed**:**

- Getting into and out of a regular bath requires a lot of upper body strength and you can hurt yourself when climbing in
- Climbing out of the bath is dangerous since the edge of the bath becomes very slippery



*Influence on design

Fig.124 The manner in which spaces are treated during design can be deducted from the end product.Precedents aids in this regard by providing an example as to space treatment.

Visited friends at their homes**:**

The same barriers apply here as in one’s own home when it comes to access and the use of spaces that are not properly adjusted to facilitate use by a disabled person. Your friends are often reluctant to make drastic changes in order to accommodate you and feel it unnecessary. The lack of knowledge on their side complicates the matter even further since they rarely know what to expect of you and how to handle the fact that your level of mobility had been altered.

This all plays a significant role in making a visit to your friend’s home an unpleasant experience. It would in fact be better if the friend come to visit you instead, something which he/she might perceive as laziness on your side. It often happens that friendships are broken up due to misunderstandings.

Played sport (Basketball):

- It is impossible to catch passes if they are not very well directed
- It is very difficult to chase after a ball
- Scoring points is very different and even difficult since perspective of the goal has changed
- There is always a risk of falling out of the chair. This is dangerous and it hurts
- Handling the ball and the chair at the same time is an art
- It is very easy to misjudge distances
- The ball often travels too fast for a person in a chair
- You get very tired from wheelchair basketball
- Your neck and back needs support
- Doing pre-determined moves is impossible (if it's the same moves as the ones you were used to do)
- I only lasted ten minutes at this

Spent a day in town:

- Storm water grids must be two way and not one way grids
- Polished floors are difficult to navigate
- It is difficult to manoeuvre the wheelchair over the electric chord of the floor polishers and other machines used in shopping centres
- Sidewalks should not be laid at an angle for it pushes one off course when riding on it
- Riding through town and manoeuvring all the obstacles makes you very tired and sweaty
- The floor layouts of shops are not disability responsive at all
- Fridge doors, especially sliding doors are often too heavy to move
- Being friendly to other people certainly changed the reaction others had towards me
- People in busy and larger shops have a tendency to overlook you
- The people walking with you in town tend to walk away from you
- Able people have no problem walking up a 1:12 ramp but anything steeper than that, even little ones, requires a great deal of effort to manoeuvre unto

Visited a restaurant:

- The raised levels in restaurant cannot be reached unless a proper ramp is provided
- Tables are too low for the wheelchair to fit under
- Being in a wheelchair places one on a higher level than the other people around the table
- The smoking sections are often on a raised level as well which means that a disabled smoker cannot smoke in a restaurant unless a proper ramp is provided
- Going to the toilet is impossible (raised level and regular WC's)
- The fact that the tables are too low has the effect that one must sit and eat at an awkward angle in respect to the table
- The fact that only certain parts of the restaurant is accessible to disabled people means that services like the television cannot be accessed

Used a lift for disabled people:

- The lift requires a helper in order to set the thing in motion for there is a key that has to be fetched from another location
- Riding unto the lift platform is very unsafe since the little ramp that must be used is much to steep for riding (you tend to topple over on the ramp)
- The remote that has to be used to navigate the lift would be difficult, if not impossible, for a person with a hand defect to use
- The lift is very slow, for safety reasons, but this exposes the person on the lift to people watching for a longer time span
- You cannot put down the safety rails by yourself
- The lift has a tendency to break
- The waiting period for mechanics to arrive is about ten minutes
- The lift platform is to high of the ground
- The most significant fear for a disabled person is possibility of falling out of his/her wheelchair

- The lift is very under utilized but who could blame disabled people for not using something that proclaims their disability to the whole shopping centre
- The lift gives the impression that disabled people cannot help themselves

Made Coffee (basic exercise)**:**

- The wheelchair needs to be perfectly oriented for every action since actions on the opposite side of the working hand, cannot be done
- Kettles are heavy
- Serving the Coffee is difficult since balancing a cup or a tray is dangerous seeing that hot Coffee can spill all over your lap
- Making Coffee requires a lot of manoeuvring, especially when the fridge and the kettle are far apart

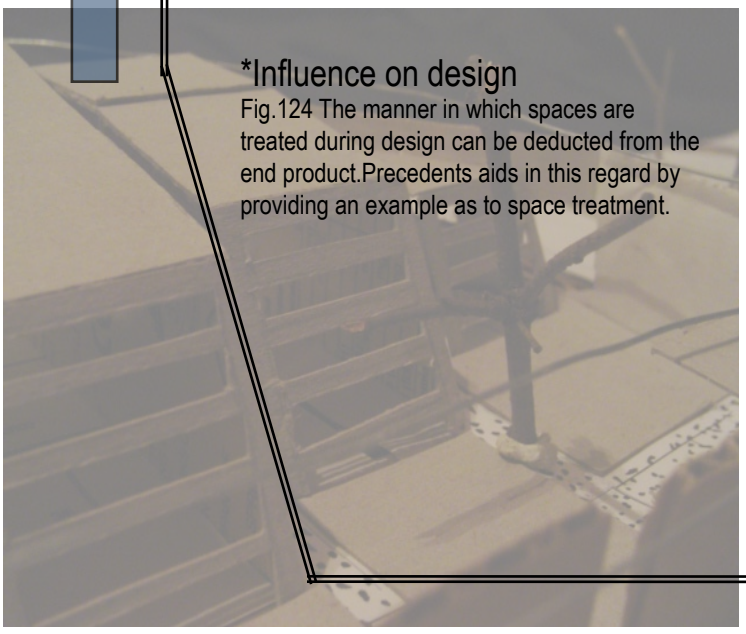
About the experiment:

The basis on which the experiment worked was to do everything I am used to do. The only difference being that I was in a wheelchair. I documented my experiences with the help of a psychologist who aided me in analysing my feelings about my adjusted abilities. The bottom line was to find out what precisely had changed, how much it changed as well as the effect of the changes.

One should think in the broader context of design when looking at actions done in a wheelchair. The broader design context in this instance included the possibilities of variants to wheelchair bound disability, the social aspect of being disabled etc.

When a person is at home, in the environment that is supposed to be supportive to him and representative of security, it becomes problematic when that very same environment becomes the main stumbling block in the life of a person. This is what happens when people with spinal cord injuries and other new disabilities have to face their old environment that is not at all designed or built to accommodate their new physical condition.

The social impact of a general inability to function properly in one's own home is significant for it is near to impossible to be part of society and feel safe there if one's own home does not provide these things anymore. Your home needs to be an extension of you and not present any stumbling blocks. Newly disabled people need to know exactly which steps needs to be undergone in order to adjust their current homes to their specific needs and in some cases, they need to receive guidance in buying a new house.



*Influence on design

Fig.124 The manner in which spaces are treated during design can be deducted from the end product.Precedents aids in this regard by providing an example as to space treatment.