

DESIGN DISSERTATION 2008
DESIGN REPORT

NEW FACILITY FOR ADULT BASIC EDUCATION AND VOCATIONAL TRAINING

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Design Report

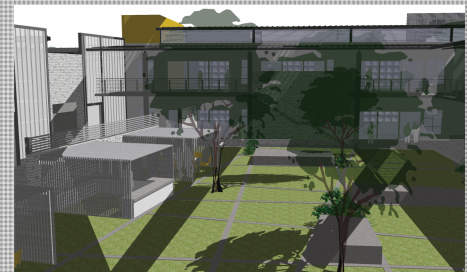
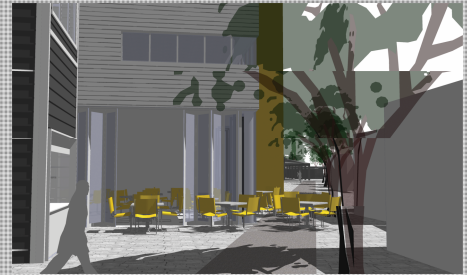


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1 INTRODUCTION

The design of the proposed Centre for Adult Basic Education and Vocational Education sets out to provide an environment for learners and educators which is positive, inspiring and conducive to learning. This is achieved by providing a facility which is informal, yet provides all the facilities required by the centre users in order to best facilitate the achievement of learning and teaching goals. By considering the special needs of the adult learner, it has been established that the most effective learning environments are those which are flexible, comfortable and informal, which allow for the personalisation of space which results in a sense of ownership and an increased level of comfort. The free-flowing spaces allow all users, both learners and educators, to make use of the facilities unrestricted and thereby establish an equitable relationship between the two parties, thereby enhancing the teaching and learning experience by reducing the discomfort brought about by imposing institutional environments.

The informal links created between the various functioning parts of the centre across the landscaped courtyard result in the integration of all the users into the centre. Activities in and around the courtyard are visible to all users, making learners aware of the opportunities that are available to them. The learner is exposed to new experiences and skills on a passive level, and is encouraged to participate in new activities and learn new skills.

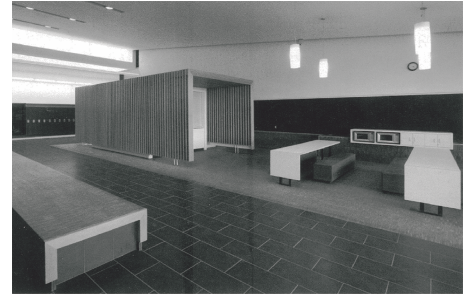


Fig. 1: The provision of comfortable and appropriate places in which the adult learner can feel comfortable and at ease is paramount to establishing a positive learning environment (Taggart, 2006: p. 42).



Fig. 2: Centrifugal space: This warm and sunny foyer is inviting and sets the mood on entering the hotel (Loisium Hotel in Langenlois, 2007: p. 224).



Fig. 3: Steven Holl's "hinged spaces" are articulated by moveable walls which pivot and slide. Rooms can be defined according to season and time of day, allowing for the personalisation of and optimum use of space. (Schwartz-Clauss, 2002: p. 57).

2 THE CLIENT AND BRIEF

2.1 Client Organisation

The client for the proposed centre is the Bridges to the Future Initiative (BFI), which is a public-private collaboration that includes the Department of Education, Multichoice Africa Foundation, SchoolNet South Africa, Unisa and the International Literacy Initiative.

The BFI aims to provide skills for out-of-school youth and adults in ICT and adult education through:

- § the development of community learning and technology centres for lifelong learning and income-generation;
- § the development of tools to improve basic education and literacy through teacher training in selected nodal areas;
- § and the use of ICT for human development in areas such as health, agriculture, and HIV and AIDS prevention (Burger, 2007: internet).

2.2 The Client's Requirements

The design of a Centre for Adult Basic Education and Vocational Training should facilitate the aims and objectives of the client, but focus in this case in particular on the development of "community learning and technology centres for lifelong learning and income generation". The proposed centre should therefore incorporate technology and income-generating skills training facilities into the curriculum, and therefore facilities. The centre will cater for 680 learners, facilitators, administrative staff and library users. The possibility of a second phase to the development to include facilities for educational tools development and educator training can also be accommodated on adjacent sites.

2.3 Users and Functions of the Building

Adult basic education and vocational training will take place in the proposed centre. Activities will range from more formalised classes and courses such as literacy, numeracy and life skills, to vocational and empowerment classes such as arts and crafts and beading, to more technical training such as woodworking and bricklaying. The centre will therefore consist of classrooms, craft workshops and technical workshops with support facilities, seminar and lecture rooms, administrative facilities, a learning resources centre, and a child-minding facility. The centre accommodates users ranging from 'educators in training' to adult learners, facilitators and administrative staff, and will be open to the public.

2.4 Detailed Brief

Due to the nature of adult education and the fact that the development of a central facility for Adult Basic Education and Vocational Training will be primarily funded by government and private organisations, it is important that the centre combine income generating activities with the other essential functions of the centre. Income

generating facilities include a coffee shop and lecture, seminar and meeting facilities which can serve both the centre and the public as rentable accommodation. The inclusion of a child-minding facility, which will generate income as well as meet the needs of the adult learners who have small children, is also appropriate.

The centre provides an environment which is conducive to learning. There are several factors which influence the quality of the learning environment. The spaces of the building promote a sense of comfort, informality and flexibility of use. This is achieved by the appropriate use of colour, texture and furnishings. Further, the environment is enhanced by the inclusion of natural lighting and ventilation and comfortable outdoor spaces into the centre. The teaching spaces of the centre benefit from opening windows, adequate volume and divisible, flexible floor areas.

The main objective was to design a Centre for Adult Basic Education and Vocational Training that is relevant to its context and simultaneously conducive to learning. The centre therefore offers teaching spaces for group discussion, small meetings, seminars, lecture, case study and workshops. These spaces are of the appropriate size and function in order to accommodate the ideal group sizes, with the additional ability to adapt according to the fluctuations of groups size and changes in curriculum and teaching methods over time. Supporting facilities such as administration and learning resources are also accommodated in the centre.

2.5 Schedule of Accommodation

The schedule of accommodation on the following pages lists in detail the spaces to be provided, the type of activity or function of the space, the size of the spaces, and the general requirements of each space.

Function	Room Description	Activities/Functions	Quantity	No. of people	Area (m²)	General Requirements
Admin	Foyer/Reception	This is the point of arrival as well as the place where registration will take place	1x	-	175.00	This area will incorporate a reception desk as well as administrative offices for four staff, with a help desk for registering students and seating in a small waiting area, with tables for filling in of forms. Space for display is necessary, as well as access to the LRC and teaching centre, café, day-care centre and careers counselling facilities.
	Facilitators' Offices	Educators workrooms for admin, preparation & one-on-one meetings	5x	5	150.00	Allows for standard office furniture: desk and chairs, and seating for consultation.
	Open Plan Offices	Reception of visitors, administration of facility	1x	10	165.00	Privacy is not vital here so the space will need to accommodate 8 individuals, allowing for chair, workspace, and storage space for each person, as well as incorporate comfortable seating in a small waiting area. Allows for a company fax machine, photocopier and printers.
	Centre Manager's Office		1x	1	25.00	Allows for standard office furniture: desk and chairs, and a mini lounge for informal discussion/meeting.
	Boardroom/Meeting Rooms	Staff meetings other organisations meetings will be held here	1x	12	45.00	This boardroom will need to accommodate a table large enough for 12 people, chairs and also allow for extra people, should the need arise.. AV & IT networks are essential for projection and presentation.
	Staff Lounge & Kitchenette	Relaxation & refreshment for staff between classes	1x	12	40.00	This room should allow for 16 people at any one time, with facilities for coffee machine, microwave, fridge and dish washing, with adequate seating and tables.
	Ablutions	Unisex ablutions for the use of staff	1x	2	12.00	1 WC 1 WHB; 5 lockers

Function	Room Description	Activities/Functions	Quantity	No. of people	Area (m²)	General Requirements
Public Services	Day-care Centre	Care of staff & learners' children	1x		200.00	To have secure outdoor play area, children's toilets, nappy change, lockers, staff office, small kitchen, sleeping area, reading room and indoor playroom
	Café	Public restaurant - indoor	1x	35	70.00	Coffee bar and tables and chairs for 100 people, with indoor and outdoor seating, with public access. Must have own wc facilities for males and females.
		- outdoor	1x	30	-	
	Kitchen	Food preparation & cooking	1x	-	55.00	Storage and preparation space and staff facilities with changerooms, wc's and storage.
		Yard & Service Area	1x	-	-	Access from loading bay with storage space for bins, etc.
	Shops	Small stores for use by learners and for rent by public.	6x	-	75.00	Kiosk-type shops to have access from workshops and from service corridor with adequate shelving for storage. To open to public by means of roller-shutter doors or similar mechanism. Must be secure.
	Refuse Zone	Refuse from café, shops and centre	1x	-	-	Bin storage and wash area, with easy access to the street for refuse collection
	Cleaning Store	Storage of cleaning supplies	1x	-	5.00	Storage of cleaning supplies with access to the cleaning staff room.
	Careers Room	Reading	1x	4	5.00	Shelves for pamphlets and catalogues, with comfortable chairs for reading and waiting.
		Counselling	1x	2	15.00	Councillor's office to have a desk and two chairs as well as comfortable seating for a maximum of three people.
	Public Toilets	To serve the public square and shop owners	1x	-	6.00	Unisex: 1 WC, 1 WHB

Function	Accommodation	Activities	Quantity	No. of people	Area (m²)	General Requirements
Teaching Spaces	Lecture Theatre	Foyer	1x		250.00	Easy access from main entrance foyer providing direct access to lecture room.
		Large group lectures for learners and available for hire	1x	120	70.00	Should have seating and writing desks for 120 people, with audio-visual equipment, appropriate adjustable lighting and mechanical ventilation. A degree of flexibility is desirable.
	Seminar Rooms/ Group meetings	For use by learners and educators as well as available for rent	8x	12	250.00	To have moveable furniture, with whiteboard and projection screen, with IT connections and adequate storage for teaching aids.
	Case study/ Role Play/ Demonstration	For presentation and demonstration skills, and role play of situations relevant to course content	2x	15	60.00	To have moveable furniture, with whiteboard and projection screen, with IT connections and adequate storage for teaching aids.
	Classrooms	Adaptable standard classrooms with breakaway spaces as classroom extensions. flexible teaching and learning	4x	16	200.00	To have moveable furniture, storage, whiteboard and projection facilities and adequate IT connections.
	Craft Workshops	Rooms for learning practical skills.	4x	16	250.00	Each workshop should offer flexibility to adapt to a changing course curriculum and courses offered, ranging from beading and dress-making to painting and sculpting workshops
	Vocational Workshops	Rooms for learning practical skills.	3x	16	420.00	Each vocational training room is to cater for a specific vocational skill, such as woodworking, brick-laying, metal-working and cooking.
	Covered Outdoor Classrooms	Breakaway rooms as extension of the classrooms	4x	16	160.00	To be directly accessible to classrooms and access outdoors.
	Workshop Stores	For storage workshop equipment.	4x	-	140.00	To have shelving for books and other equipment. These rooms must be secure.
	Storage	For storage of furniture and equipment	2x	-	35.00	General stores for storage of equipment and furniture, to have shelving for books and other equipment. These rooms must be secure.

Function	Accommodation	Activities	Quantity	No. of people	Area (m²)	General Requirements
Learning Resources Centre	Foyer	Reception, exhibition	1x	-	25.00	Extensive space for display. Direct access to student bags & circulation of LRC
	Circulation Desk	Control and surveillance	1x	-	40.00	Only 1 exit from here to foyer. Plenty space around circulation desk
	Ethereal Lit & Fiction	Browsing/reading	1x	28	300.00	Low chairs & coffee tables
	Non-Fiction/Periodical/Reference	Reading	1x	24	100.00	Tables with four chairs each and shelving for books and journals.
	Individual Study	Study Carrels	13x	13	25.00	Sound proof or located in a quiet area, with desk, chair and reading light.
		Small Group Rooms	2x	6	100.00	Sound Proof with desks and chairs to accommodate groups of up to 6 people.
	Computer Training	Information and Communication Terminals	1x	13	80.00	Anti-static carpet & fire escape. Provide 1 computer per 2 students.
	Computer Server Room	Storage of server	1x	-	10.00	Adequate ventilation and cooling in order to maintain required temperature.
	Offices	Administration of learning resources centre	1x open plan	3	20.00	Allows for standard office furniture: desk and chairs, and seating for consultation.
	Learners Bags	Storage of learners' bags	1x	-	10.00	Opposite circulation desk for the purposes of surveillance.
	Lecture Room	Large group lectures for learners and available for hire	1x	120	70.00	Should have seating and writing desks for 40 people, with audio-visual equipment, appropriate adjustable lighting and mechanical ventilation. A degree of flexibility is desirable.
	Ablutions (as per SABS 0400)	To cater for 350 people at peak use	3x	350	135.00	Min. Male: 6 WC, 9 Urinals, 6 WHB Female: 15 WC, 9WHB
Totals	Sub-Total				3793.00	

	Circulation		25%		950.00	
	Grand Total				<u>4743.00</u>	
	On Grade Parking	Staff and visitors parking	12,5m ² / bay	15	187.50	



3. SITE SELECTION AND ANALYSIS

3.1. Introduction

In conducting research for the dissertation document, the following criteria were established for the selecting an appropriate site for a Centre for Adult Basic Education and Vocational Training:

The main selection criteria are:

- § Availability of land
- § Access by public transport
- § Central location
- § Proximity to existing educational facilities
- § Restrictions

Secondary considerations for site selection include:

- § Access to water and electricity supply
- § Orientation
- § Image, character and identity

The requirement for access by public transport and the need for a central location, as well as the proximity to other educational facilities suggest that the most suitable location for a new centre for adult education and vocational training would therefore be within an urban context, as opposed to an isolated situation. Site selection has therefore been limited to the urban area in and around Durban's CBD, which is efficiently served by public transport, and is central to a large population, thereby making it more accessible to as large a portion of the population as possible.

Three sites were initially identified as possible choices for the development of an adult education centre:

- § Site A: Centenary Road, Greater Warwick Junction Precinct, Durban
- § Site B: Queen Street, Durban CBD
- § Site C: Hoy Park, Old Fort Road, Durban

These three sites were assessed based on the criteria discussed above in order to make a final site selection.

3.2. Site Selection

3.2.1. Site A: Centenary Road, Greater Warwick Junction Precinct, Durban

Site A is located within the Greater Warwick Junction Precinct, on the corner of Centenary Road and Carlisle Street.

Site A has good potential for the development of a Centre for Adult Basic Education and Vocational Training. The site is serviced and relatively flat, requiring

little demolition and site works. The need for the relocation of existing functions may be problematic. The site is highly accessible by both pedestrians and commuters making use of public transport or private vehicles. By locating the facility here, the centre may form part of a district, and avoid being a stand-alone building in an isolated context.

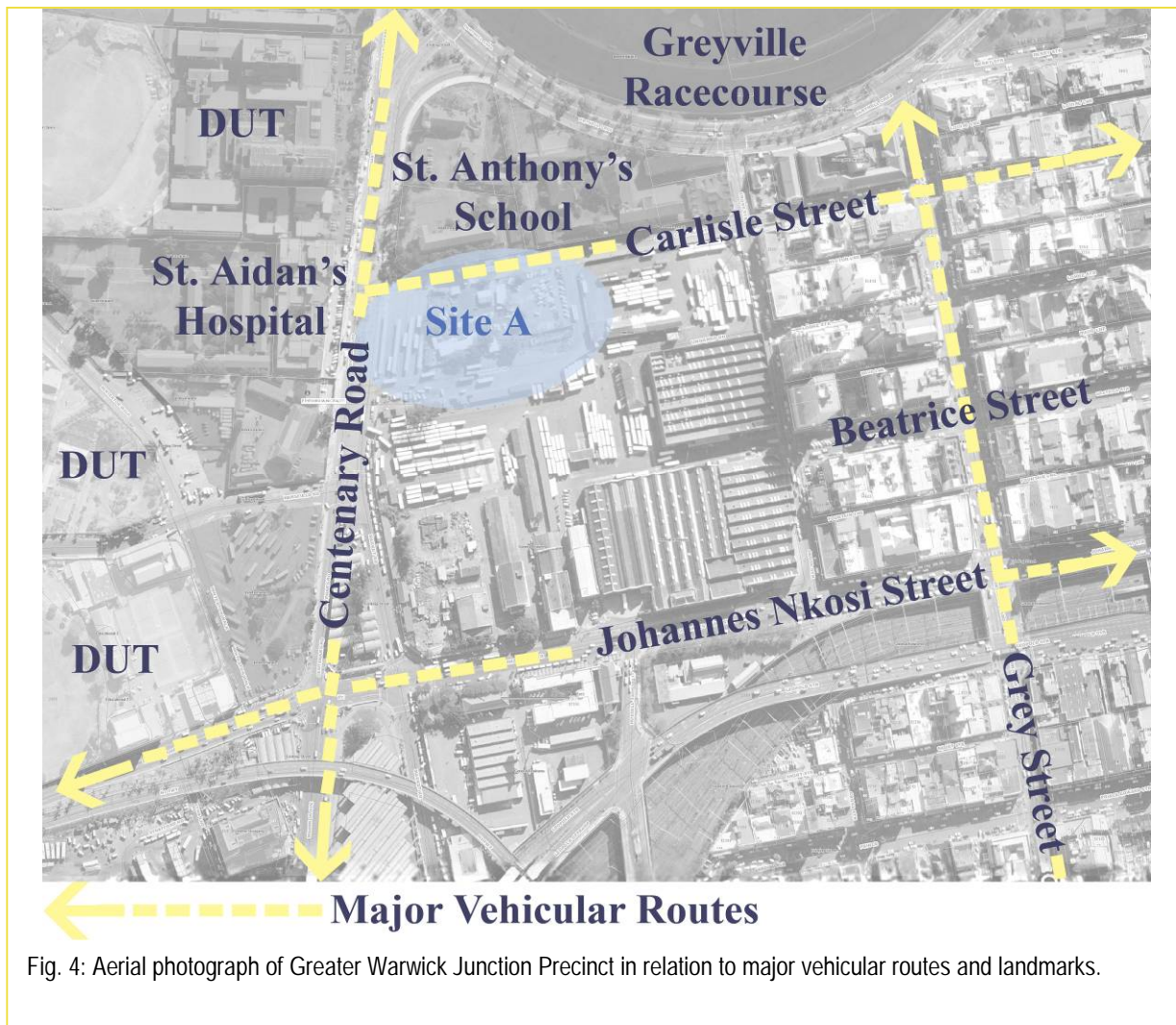


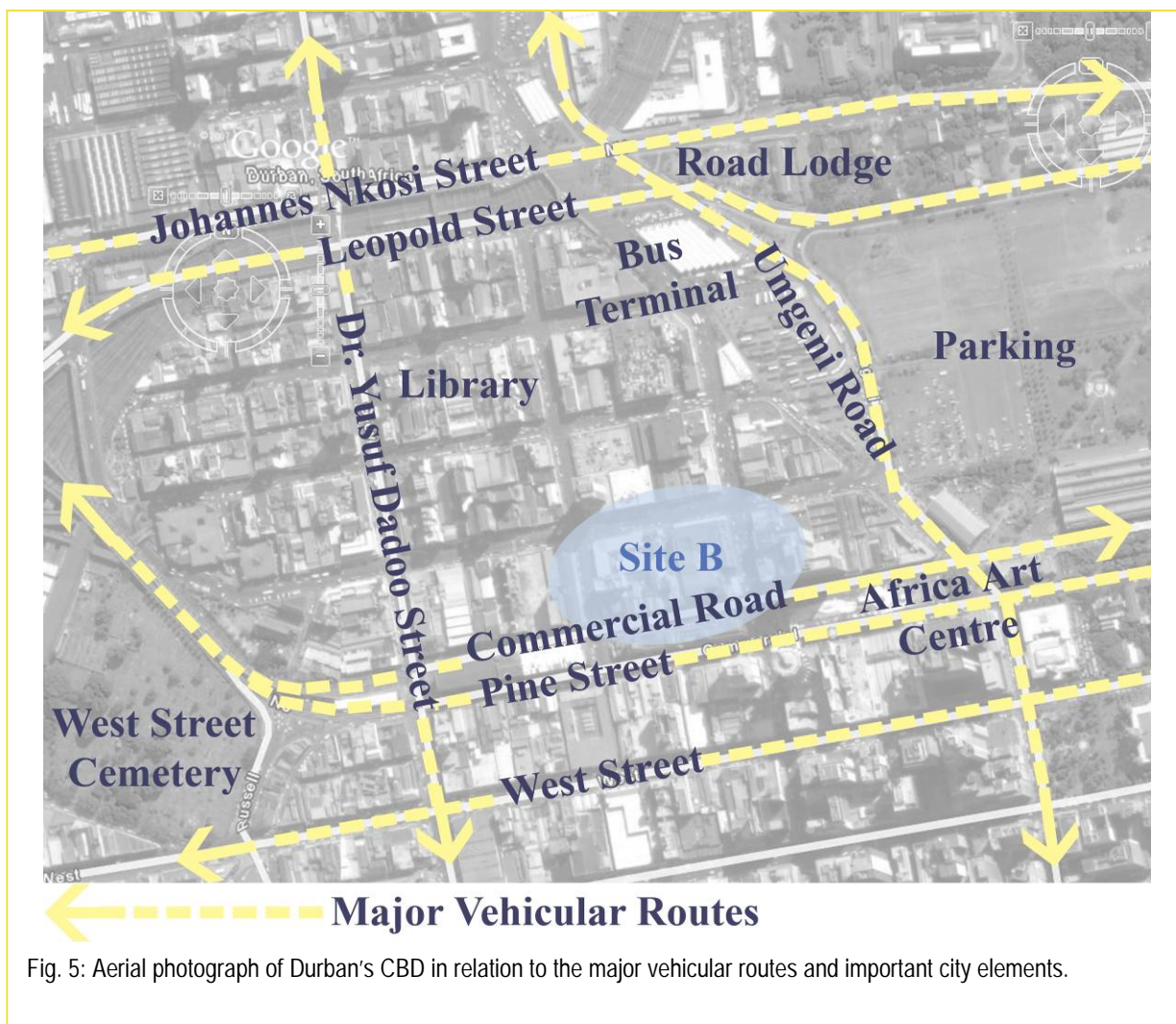
Fig. 4: Aerial photograph of Greater Warwick Junction Precinct in relation to major vehicular routes and landmarks.

3.2.2. Site B: Queen Street, Durban CBD

Site B is located between Queen Street and Commercial Road in Central Durban. The Department of Education and Training is located here, and there is a possibility that a link may be created between this building and the proposed centre for adult education.

Site B is not an ideal site for the development of a Centre for Adult Basic Education and Training. The site is located well in terms of accessibility by various means of transport, as well as centrality. The site will be accessible from a number of different directions by people coming

from all over the city. However, there is little room to service the site, and the dense nature of the district means that there will not be opportunity for greening of spaces. Overshadowing by high surrounding context will impact negatively on the quality of the learning environment. The institutional nature of the Department of Education and Training adjacent to the site may also have a negative impact on the learning environment.



3.2.3. Site C: Hoy Park, Old Fort Road, Durban
 Site C is located in Hoy Park, adjacent to UNISA. This site has been identified for this reason, as there is an opportunity for the clustering of educational units here.

This site is less 'urban' than the Sites A and B. There is therefore less opportunity to partake of the benefits of a city location. The location further away from the CBD means that the site is less accessible by businesses, employees and individuals wishing to make use of the

facilities. The site is large and there is therefore space available for parking and outdoor learning spaces. The site is long and narrow, and it has north-south orientation which is ideal for learning environments. However, the site is too large for the scale of the proposed project.

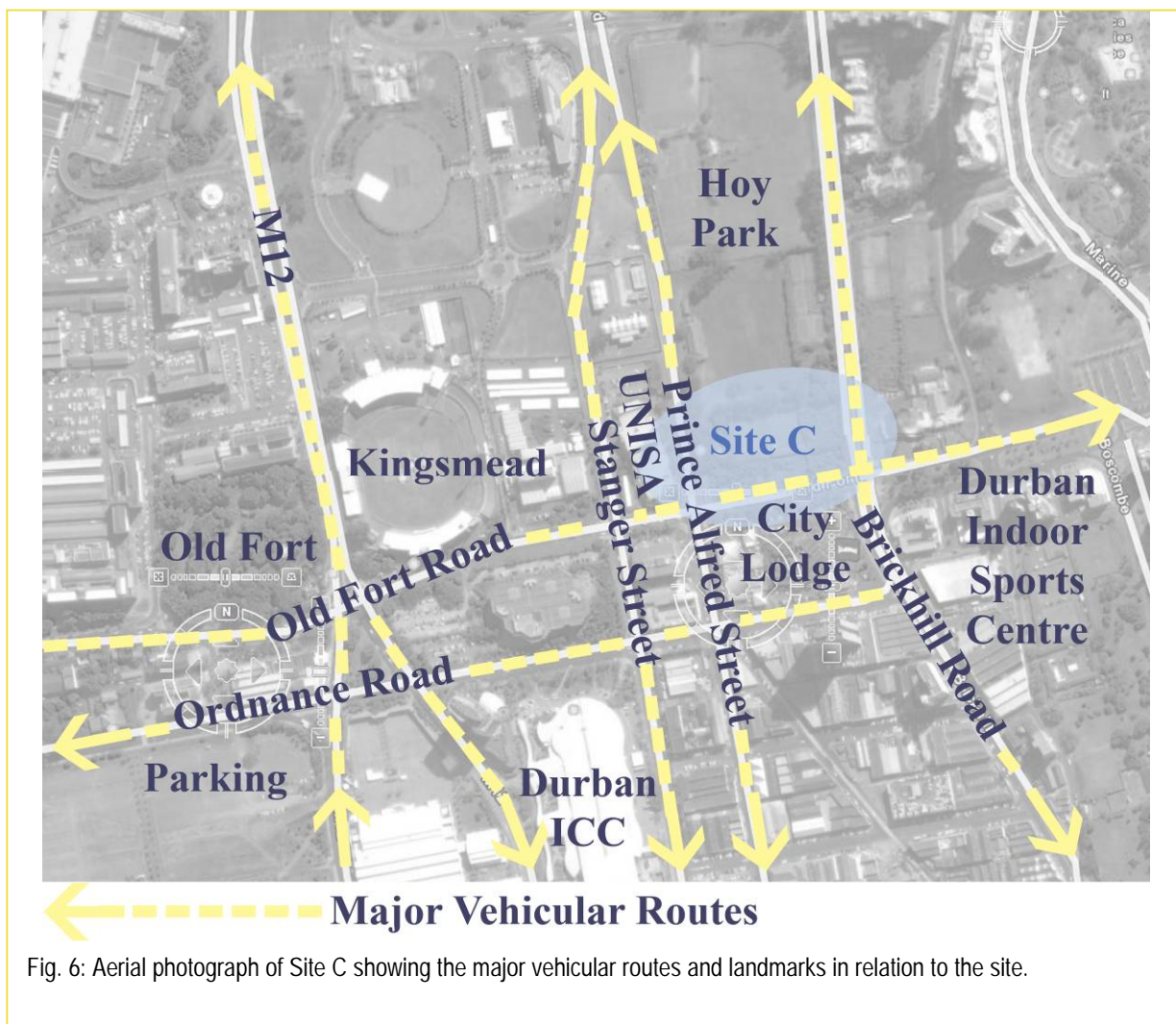


Fig. 6: Aerial photograph of Site C showing the major vehicular routes and landmarks in relation to the site.

3.2.4. Summary and Conclusions

By analysing the three sites above using the same criteria, each site obtains a scorecard that is comparable and objective. This allows the site to be interrogated in terms of how it would respond to the development of the proposed structure. From the analysis done above the Site A in the Greater Warwick Junction is seen as the best site for the development. This is due mainly to its centrality and accessibility by means of public transport, which allows the site to link with the city and the surrounding residential areas. There is a potential linkage to be created between the existing educational

facilities and the new centre, or at the very least, for the integration of the new centre into an existing educational district. The site is underutilised and the development of an educational facility here will contribute to the continuity of the urban fabric in which there currently is a gap. Further, there is also the opportunity here for the extension of the southern market district up towards the north.

	Availability of land	Access by public transport	Access to site via pedestrian routes	Access to site via public roads	Central location	Access to electricity supply	Access to water supply	Links to existing educational facilities	Orientation	Urban context	Image/character/identity
SITE A	•	•	•	•	•	•	•	•	•	•	•
SITE B	x	•	•	•	•	•	•	x	•	•	•
SITE C	•	•	•	•	•	•	•	•	•	•	•

Fig. 7: The table lists the site selection criteria based on the discussion above and compares three sites, Site A, Site B and Site C, under these categories. The results of this analysis resulted in the choice of Site A as the most preferable site. Qualities are represented as follows:

- Good
- Average
- X Bad

3.3. Site Analysis

A study of the figure/ground map revealed a gap in the urban fabric which is the current site of the bus depot and parking. It also reveals a change in scale across the major transport route, Centenary Road. This suggests that an infill project of an intermediate scale which will reinforce the transition from the urban scale to the smaller educational and residential scales towards the west.

There are particular districts within the precinct with which links should be established. To the east is the residential and mixed use Beatrice Street District, and to the north and west are the educational facilities which form the educational district of which the proposed new facility will form a part.

Particular landmarks to which the proposed facility should respond are predominantly educational facilities, including ML Sultan Campus of DUT and St. Anthony's School, and also include the existing bus depot buildings, St. Aidan's Hospital to the west, and bus and taxi terminals towards the south.

Centenary Road is the busiest of the roads which surround the site, both in terms of vehicular and pedestrian movement. This suggests that the main entrance and the public facilities should be located along this street.

North-east winds can be used advantageously in order to naturally ventilate the centre, while the exposed west and northern sides of the site need protection from the sun. While the site is in an urban area, there are no tall buildings

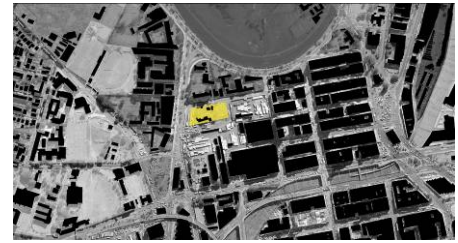


Fig. 8: The figure ground map showing the existing urban fabric and the gaps where sites are under-utilised



Fig. 9: The illustration identifies the distinct districts in the precinct with which links can be established and within which the proposed building will fall



Fig. 10: The map shows the most frequently used vehicular routes and the intensity of traffic flow on each route.



surrounding the site, and therefore there is little to no over-shadowing of the site. Natural light can therefore be used to illuminate the building and reduce the need for artificial light.



Fig. 11: The strongest winds come from the north-east and south-west, bringing warm and cool breezes respectively, while the main edges of the site are orientated about 10° west of north



Fig. 12: View of the site from the south east as it is today, used as a bus shelter.



Fig. 13: View of the bus shelters and commuters seen from the busiest street, Centenary road

3.4. Urban Design Proposal

The proposal for the site aims to eliminate the gap in the centre of the precinct by proposing the insertion of an Adult Education Centre into the already existing educational district to act as a linking mechanism between the residential district to the east and the educational district to the west. The creation of links and the provision of an active public edge result in a destination which will draw pedestrians beyond the proposed flyover and into the quieter educational zone. The proposal relates to the surrounds, engaging with the hospital to the west on Centenary Road, as well as with St. Anthony's School to the north. Links will be created to the various bus and taxi terminals in the immediate vicinity. To the south of the site, a semi-permeable edge will begin the transition for the commuter onto the site and into the building. On the western edge will be a permeable public edge which is the first step in the transition into the building for the pedestrian.

3.4.1. Urban Design Framework:

- § Strengthen and rationalise existing trade, movement and infrastructure
- § Provide diverse functions relevant to the context and community
- § Revitalisation and repurposing of existing buildings in order to positively impact on physical connectivity, economic viability and imageability of the precinct
- § Reinforce the existing character of the district through appropriate scale, facilities and choice of materials
- § Create links to the surrounding precinct both physically and through function
- § Encourage interaction between the public and the built environment through the provision of retail and public service facilities on various scales
- § Create an environment that is safe for both the pedestrian and the motorist
- § Improve the quality of the environment by means of planting and landscaping, high quality materials and increased activity at street level
- § Create pedestrian-friendly routes and links to public transport

Fig. 14: The aims of the proposal was to establish links to existing facilities and to fill the gap in the urban fabric with a meaningful intervention which will form a cohesive part of the educational district.

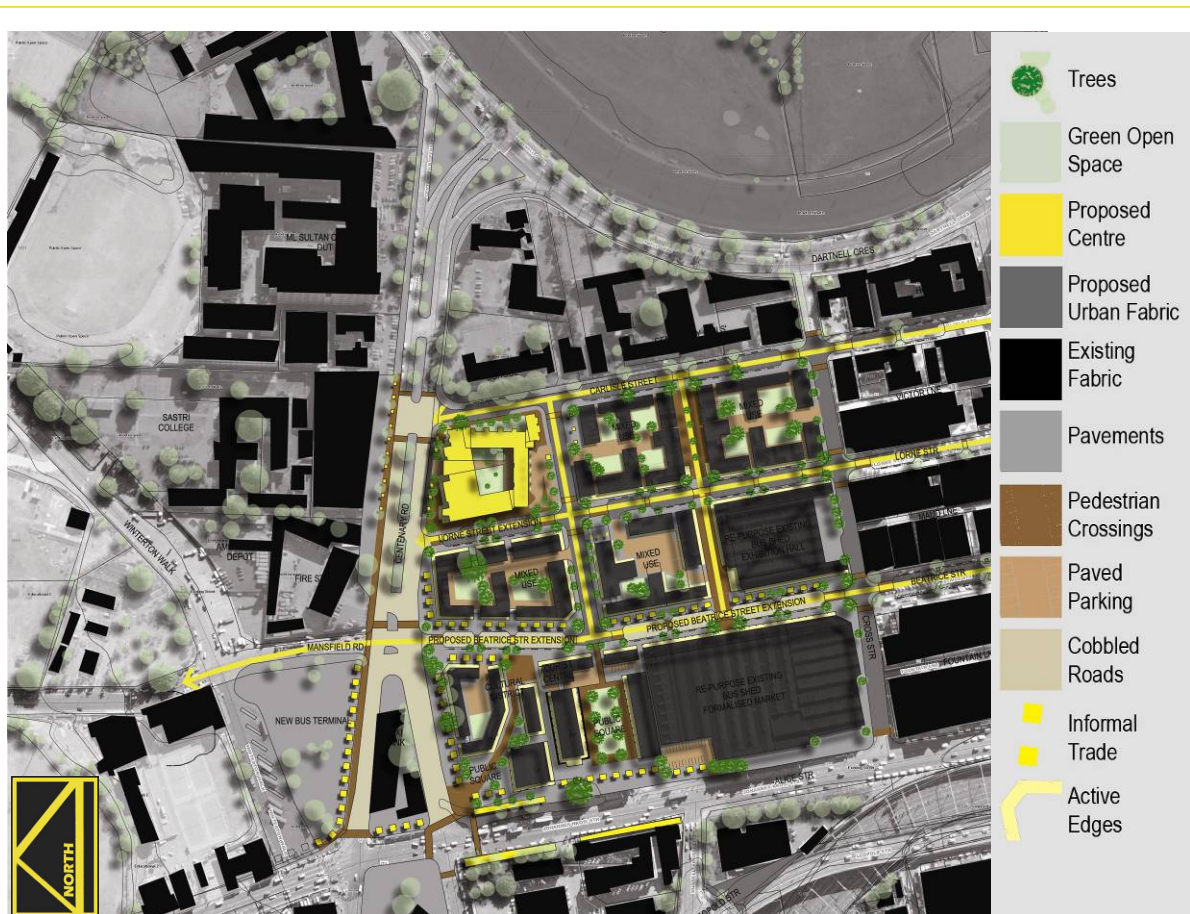
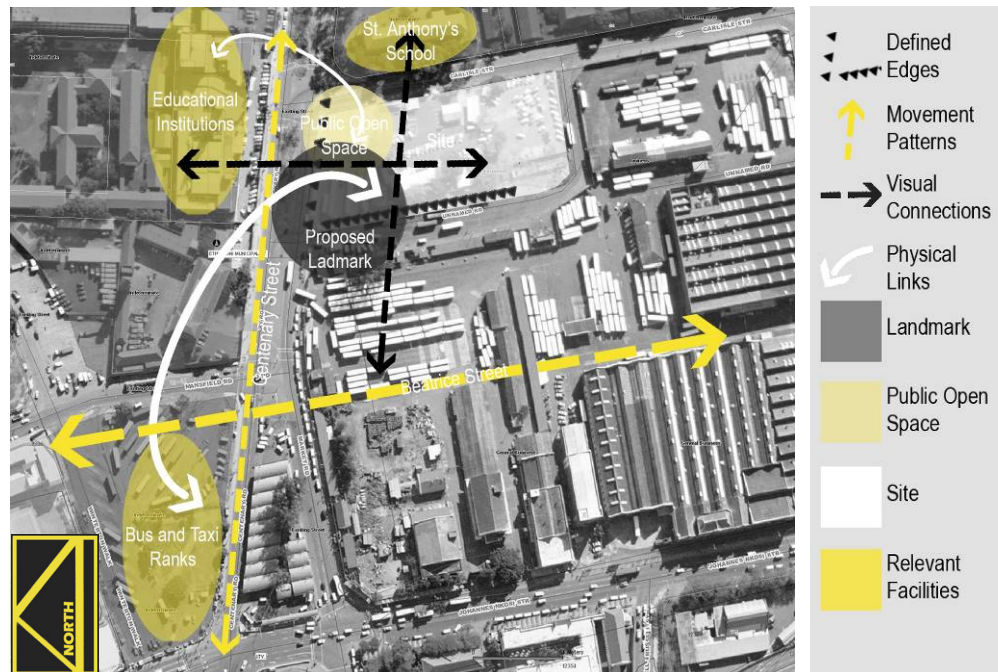


Fig. 15: The urban design connects Mansfield Road to Beatrice Road. Pedestrian walkways and shaded squares enhance the quality of the environment for the pedestrian. The centre forms part of the education district.

4. DESIGN INTENTIONS

- § To accommodate existing traders in an appropriate way
 - § To improve the pedestrian environment and experience
 - § To design a building which is functional and legible
 - § To design a centre which addresses the needs of the learners and educators.
 - § To cater for a wide variety of training courses
 - § To adapt to the changing needs of society and individuals
 - § To provide information to as many people as possible through technology and appropriate media
 - § To create a positive learning environment
-

5. DESIGN CONCEPTS

The design concepts are developed out of the design brief which states that basic principles are to be present in the centre for adult education. These are interface, informality, legibility and flexibility. Concepts have been further developed to include comfort, adaptability and accessibility. These concepts will be used to influence the design development of the proposed Centre for Adult Basic Education and Vocational Training.

5.1. Interface

The **interface** between the public and private realms should be transitional, thereby including the public in some of the activities of the proposed centre. This concept has been further developed to include the interface between indoor and outdoor spaces, where the boundary can be blurred through the use of materials and intermediate space.

5.2. Informality



Informality is vital in establishing an effective and positive learning environment. The informal arrangement of functional spaces around a centrally located space encourages chance encounters and interaction between learners and educators. An informal environment positively reinforces the establishment of the relationship between the educators and the learners, allowing for the establishment of mutual respect and thereby opening lines of communication.

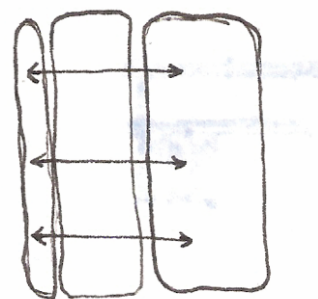


Fig. 16: Diagram illustrating the concept of transition at the interface between building and street, public and private.

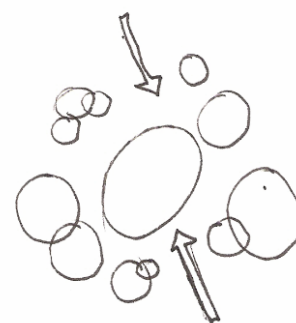


Fig. 17: Diagram showing the idea of informality with spaces arranged randomly around a single unifying element

5.3. Legibility



Clearly defined paths make the building easy to understand and use. Further, **legibility** is enhanced by the clear, gradual transition from the public to private realms.

5.4. Flexibility



Different internal configurations within the core elements of the facility allow for **flexibility** and personalisation of spaces by the users. This facilitates the various learning goals and teaching methods established by the individual educators and learner.

5.5. Comfort



Comfort within the learning environment constitutes a very important factor in determining the quality of that learning environment. Comfort can be enhanced by the function and adaptability of a space, by the furnishings, and the provision of means for promoting natural ventilation, lighting and overshadowing.

5.6. Adaptability



Large span open plan structure allows for the **adaptable** rearrangement of furniture and functions according to changing needs of the users of the proposed centre.

5.7. Accessibility



The establishment of links between existing facilities and public transport networks makes the site easily accessible to the largest portion of the community possible. **Accessibility** also refers to the media used and appropriateness of the information which is made available to the use.

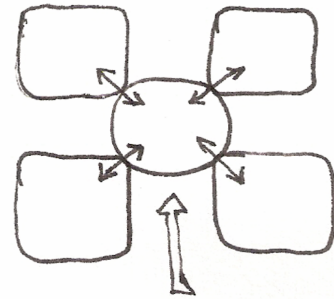


Fig. 18: This diagram explores the concept of legibility through the creation of clear links

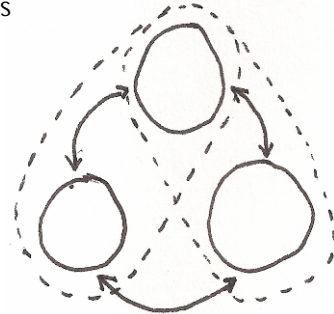


Fig. 19: Flexibility, allowing unrestricted movement from space to space

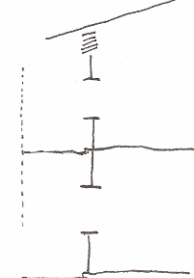


Fig. 20: Provision for cross-ventilation and natural lighting enhance the comfort of users

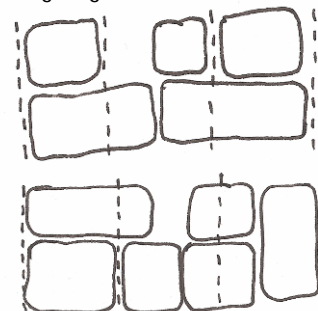


Fig. 21: large span structure allows for the adaptation of internal spaces

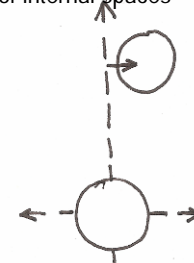


Fig. 22: links to existing facilities and amenities make the centre accessible

6. PLANNING

Shops and Coffee Shop: these facilities are located at the public front of the centre along the main street in order to activate the building edge and result in interaction between passers-by and the built environment.

The Public Plaza: the public area should provide communal facilities to give the space relevance and vibrancy through activity. A bus shelter, public telephone, seating for passers-by, and traders kiosks are provided.

The Courtyard: The courtyard is the focus of the scheme. The informal and comfortable nature of this space will serve to set the tone for the entire scheme. Most of the functions, including workshops, classrooms and craft workshops will have access to this outdoor space, thereby enriching it with activity. The creation of spaces for chance meetings and informal gatherings is essential to the operation of a centre for adult education. The courtyard serves this purpose as the platform for gatherings, conversations and cultural integration to take place.

The Lunch Pavilions: these form part of the courtyard and serve the needs of the learners and educators alike. The central location make the pavilions accessible to all users, and provide the users with shaded seating areas facing onto the courtyard in which they can enjoy meals or informal meetings and outdoor classes and activities

The Three Educational 'Boundaries': the three major educational functions are provided for in three separate, but interrelated, 'boundaries' to the courtyard. The



Fig. 23& 24: Shops, coffee shop and public plaza activate the corner of the site

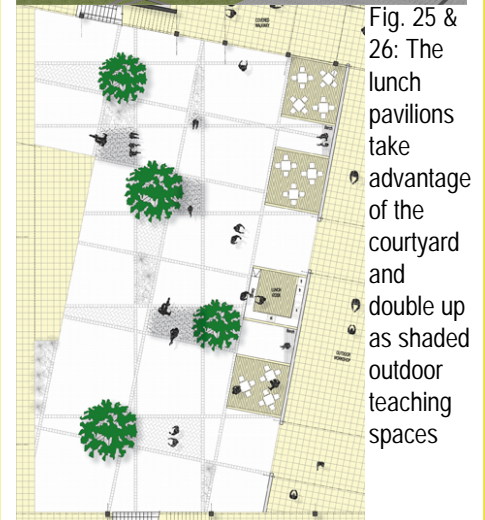
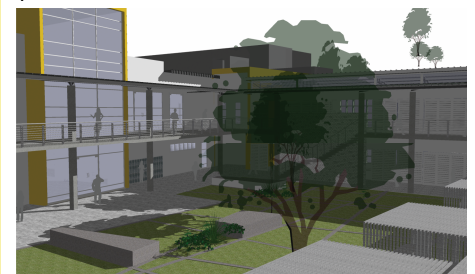


Fig. 25 & 26: The lunch pavilions take advantage of the courtyard and double up as shaded outdoor teaching spaces



Fig. 27: View of the lunch pavilions

teaching boundary consists of the flexible teaching spaces which accommodate learning activities such as seminars, case studies, group discussions, tests, and lectures. It consists of primary teaching spaces accompanied by breakaway spaces as extensions to the classrooms. The divisions between these spaces are adaptable, light-weight and flexible in order that the spaces can be rearranged into different sizes and groupings depending on the needs which arise. The teaching wing is orientated in a northern direction in order to take advantage of natural daylighting and ventilation opportunities.

The technical boundary houses the technical vocational training workshops in which vocational skills such as bricklaying, plastering, woodworking, and so on, will take place. Each workshop has access to a screened outdoor workshop area, as well as access from the parking area for the loading and off-loading of equipment and materials. These workshops are located as far away from the other functions as possible in order to avoid noise contamination in the quieter spaces, but maintain physical and visual links to the other teaching spaces, workshops and central courtyard.

The craft workshop boundary consists of smaller, less sophisticated workshops which can be easily adapted to accommodate a wide variety of craft training activities, including dressmaking, beading, sculpture, art classes, and so on. The craft workshops will be orientated in a northerly direction in order to make use of daylighting and natural ventilation opportunities.



Fig. 28 & 29: Plan and perspective of the teaching wing showing dynamic form indicative of movement and change



Fig. 30: The technical workshops are large and adaptable to different technical trades, and offer outdoor workshops for the hot summer months



Fig. 31: View from the outdoor workshops into the courtyard



Fig. 32: The smaller craft workshops are flexible and house courses for such skills as dressmaking, painting, and so on.

The Learning Resources Centre: forms the fourth and final 'boundary' to the courtyard. It is highly visible from the public street, and accessible from the street and Centre itself. It is open to the public and provides a range of facilities and media, from magazines and newspapers to children's library facilities, adult fiction and non-fiction, and electronic training and research facilities. Visibility into the ground level of the library, where the informal functions of the learning resources centre serves to enliven the façade, create public interest, and demystify the nature of libraries. Having public presence also serves to convey the message of the importance of literacy and information to the public.

The Child-Minding Facility: this accommodates children from toddlers up to school-going age, and provides the relevant facilities. Essential is the provision of a safe and secure outdoor play area. The child-minding facility is able to operate independently from the functions of the Centre, while maintaining close physical and visual links.

The Administrative Function: this is accommodated within the fourth 'boundary', linking to the main entrance foyer and learning resources centre as well as to the teaching spaces. Staff members are provided with leisure facilities and 'hot-desking', which allows facilitators the opportunity to access computers for the preparation of course materials as well as for the purposes of research. Individual offices are avoided and an open plan layout is adopted to prevent the isolation of staff from each other. Meeting spaces in which facilitators can hold private meetings with learners are also provided, as well as a boardroom which can accommodate all staff for internal meetings.

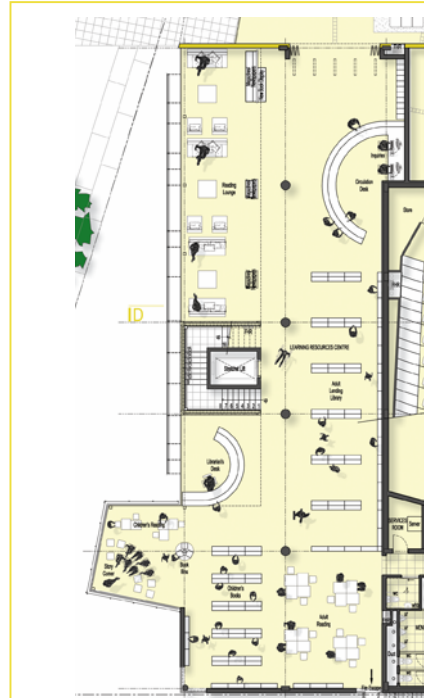


Fig. 33: The learning resources centre is the focal point of pedestrians on street level

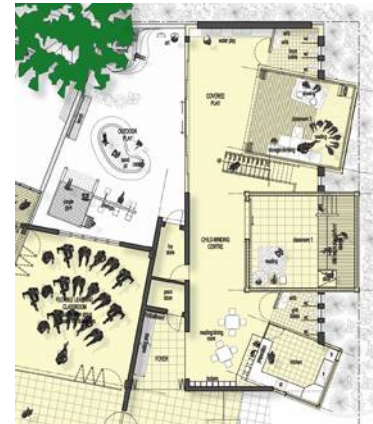


Fig. 34: The child-minding centre offers indoor and outdoor spaces for children to play and learn



Fig. 35: The administrative functions are on first floor and link to the teaching spaces

7. ENVIRONMENTAL RESPONSE STRATEGIES

7.1. Building Form

The configuration of the proposed building creates a landscaped courtyard which forms an oasis within the harsh context of the city. This results in the provision for users of a private open space in which learning can continue outside of the classroom. The courtyard is protected from the city on all sides by functional elements of the centre. Each function is separated to form a “boundary” of the site in order to allow the free use of space and to prevent noise contamination between the quieter and noisier functional spaces.

The result of the building form is a courtyard which is shaded and protected from the elements, with teaching and activity spaces with views and access to useable green space. The connection with the outside prevents a sense of institutionalism from being established, and rather results in an informal, comfortable learning environment.

The form also allows for each wing or ‘boundary’ of the building to be naturally illuminated and ventilated, further enhancing the comfort and quality of the internal environment.

7.2. Shading and Illumination

Where appropriate, solar shading has been employed to prevent excessive solar gain on the facades of the building. Summer sun is prevented from penetrating the building directly, while winter sun is allowed in the cooler months. The majority of room depths are kept below 8m

deep, thereby maximising the positive effects of natural daylighting and reducing the need for artificial light. During daytime hours there should be no need for artificial lighting, except in specialised areas such as lecture rooms and auditoria, where natural light would interfere with projection.

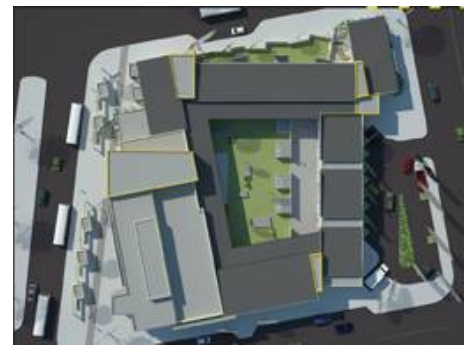


Fig. 36: The separation of functions into separate wings or boundaries for noise considerations results in a courtyard building giving access from all teaching spaces to the courtyard.



Fig. 37: Where necessary the facades are treated with additional screens to protect the spaces from additional heat gain, particularly on the northern and western facades.

7.3. Ventilation

Where possible, fenestrations have been located at an angle of approximately 45° to the prevailing winds. This allows for effective cross-ventilation of spaces, thereby reducing running costs and the need for artificial ventilation. High level operable glass louvers allow for the ventilation of the roof space on the top level of the teaching, craft and vocational training spaces, thereby reducing heat build up during the day. The provision of operable windows and louvers allows the users to control their environment, thereby increasing individual comfort levels throughout the teaching and administration spaces.

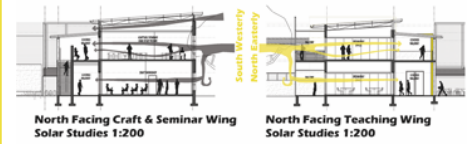


Fig. 38: Cross ventilation is encouraged by the placement of windows and high-level louvers at an angle approximately 45° to the prevailing winds

8. TECHNICAL RESOLUTION

8.1. Form and Structure

In order to facilitate the most efficient room sizes for teaching, initially a standard column grid of 7,5m was established throughout. This has then been modified and manipulated where necessary in order to accommodate such elements as lifts, stairs, break-away spaces and stores. Smaller spaces have been accommodated as “add-ons” to this grid which function much like bay windows, and are roofed and supported independently of the standard column grid. The use of a free-span standard grid allows for the flexible division of the internal spaces which optimises the usability of the spaces.

8.2. Parking Area

The location of the parking to the east of the site freed up the western side of the site, which is fronted by Centenary Road, the busiest of the four streets which surround the site. This increased the opportunity for public facilities and an active street edge.

The parking itself is based around a one-way road with a single entry and exit point for security. Parking is on grade and is designed to accommodate educators and some users. The parking area will be paved with clay pavers, with concrete kerbs defining the limits of the parking area. To improve the quality of the parking area and to reduce heat gain over the paved area, planted islands and some large trees have been indicated.

One parking bay has been allocated for disabled users, and a loading bay with mountable kerb is also included in this area so that it may be overseen from the single security point.

8.3. Services

Services in this case consist of standard services of lighting, mechanical ventilation, water, telecommunications, and so on. In most cases these are all accommodated in the horizontal instance in the ceiling voids, and in the vertical instance in vertical ducts.

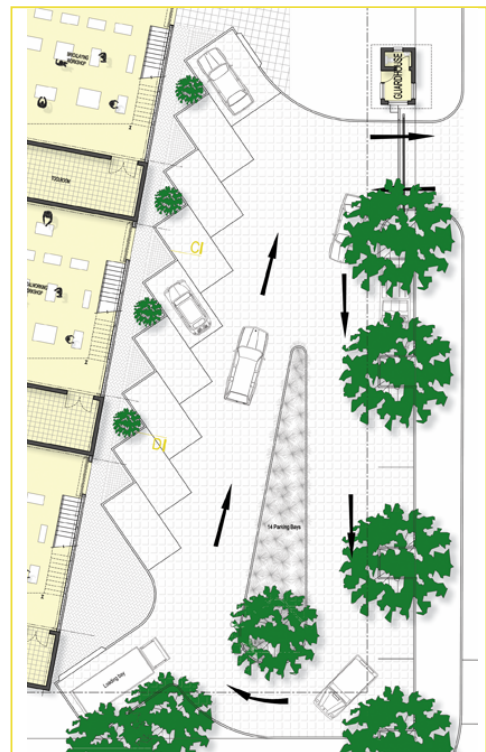


Fig. 39: Secure parking for staff and visitors is a circular one-way route with angled parking to accommodate 15 cars and one delivery vehicle to the workshops.

9. CONCLUSIONS

The design approach has resulted in the design of a building which aims to address those issues inherent in adult education which are typically ignored or insufficiently addressed. This has resulted in a centre which maintains links to the context and the users around the building while creating an internal environment which is comfortable and secure, thereby allowing the learners to participate uninhibited in the learning activities taking place within the centre.

Further, the centre provides a public amenity in the form of the learning resources centre which incorporates formal and informal functions of a library with new technology and research methods into a facility which is

comfortable, bright and accessible to people with all levels of reading experience.

Overall, by considering the site and context in conjunction with the users of such a centre the design process has resulted in a positive learning environment where learners are free to participate without fear or insecurity; where the changing needs of learners and society can be accommodated, and where education can be brought to the community in a way that is appropriate and accessible.



Fig. 40: Overall view of the proposed centre from the north east towards the technical workshops on the left and the teaching wing to the right.

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11

Appendix A – Presentation Drawings

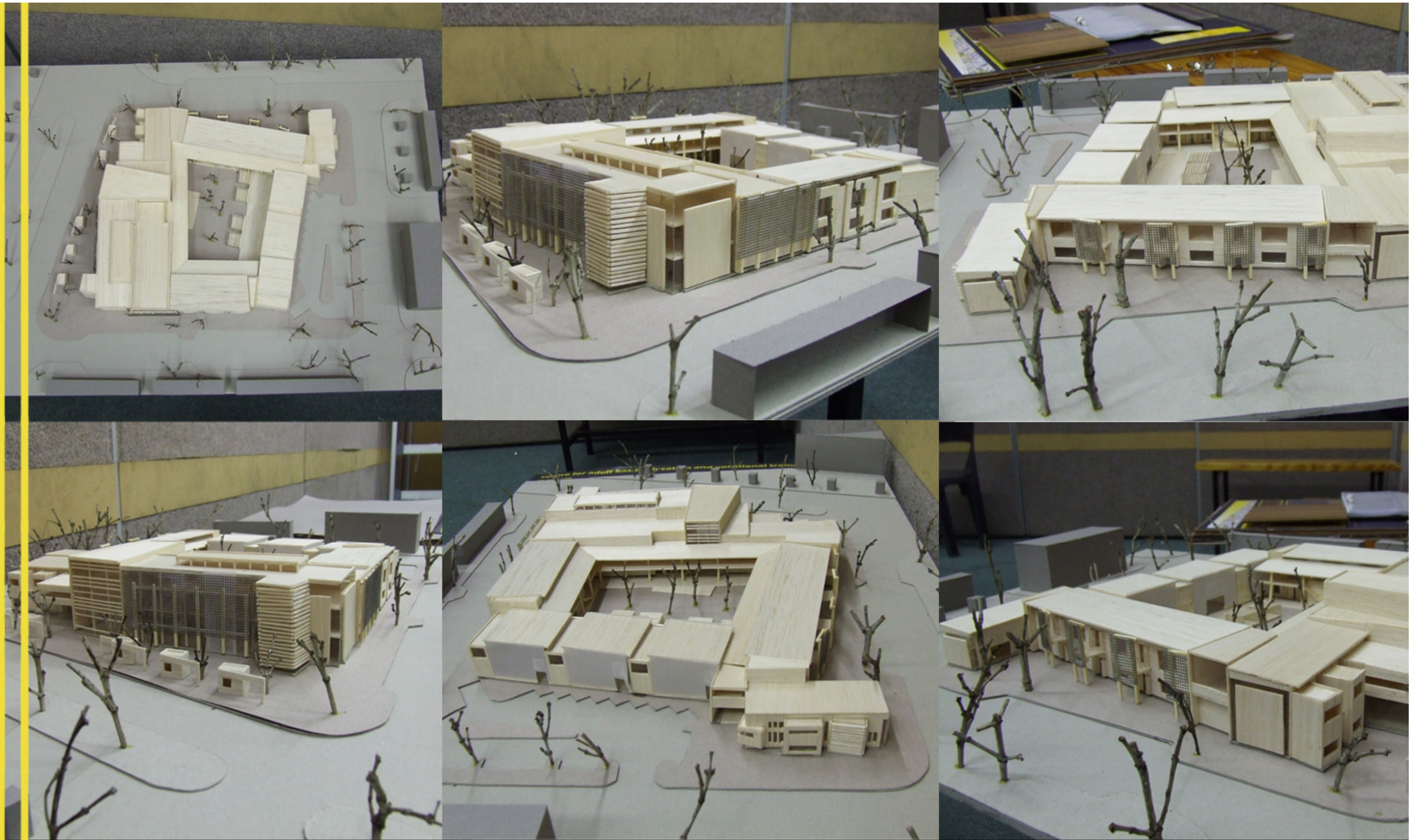
centre for adult basic education and vocational training

design dissertation
december 2008
leigh hartl



OVERALL VIEW OF FINAL PRESENTATION PIN-UP DECEMBER 2008

Thesis 2008

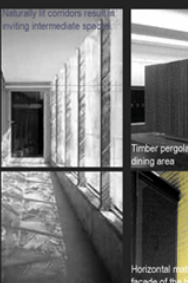
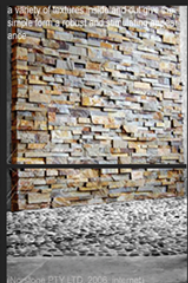


MODEL VIEWS MODEL VIEWS MODEL VIEWS MODEL VIEWS MODEL VIEWS **Thesis 2008**

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Qualitative Precedents



Introduction

Currently there are over 800 million illiterate adults in the world (The Purity of Literacy and its Implications for Policies and Programmes, 2004). In South Africa alone there are approximately 8 million adults who cannot read (Burger, 2007).

The aim of this project is to propose an architectural intervention in an urban context which will help to alleviate the problems of illiteracy, poverty and crime. This will be done in the form of a facility which will provide basic adult education, skills and vocational training to a broad base of learners.

- ### Objectives
- To make available information which is relevant to the community in a manner which is accessible
 - To offer skills training which will strengthen the community's abilities in learning to perform activities, crafts and jobs which will prepare the individual for improved and varied ways of earning an income.

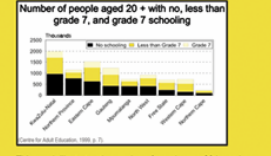
Hypothesis

"Literacy is the ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society" (The Purity of Literacy and its Implications for Policies and Programmes, 2004, p. 13).

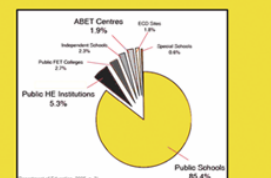
The hypothesis of this project is based on this definition of literacy. The hypothesis, therefore, is that by introducing a Centre for Adult Basic Education and Vocational Training into the urban context of the Greater Warwick Junction Precinct, education can be made more accessible to a large number of potential learners.

Client and Funding

The financial needs of a facility for adult education should be met out of a variety of resources, both public and private (Hutton, 1992: p. 40-44). The responsibility of funding, planning, organisation, teacher training, methodology materials and the teaching process may effectively be and currently is shared by the State, by non-governmental organisations (NGOs) or voluntary organisations, and the industrial and commercial sector (Hutton, 1992: p. 40).



This graph illustrates the number of people over 20 in each province with a grade 7 schooling level or less. It can be seen from the graph that KwaZulu-Natal is the province with the highest number of people with no schooling whatsoever, as well as the largest number of people with less than a grade 7 level of schooling.



The diagram above illustrates the small percentage of students enrolled in adult basic education programs in South Africa in 2005 as compared with public higher education institutions, colleges, independent and public schools.

Province	Learners Enrolled in ABET	ABET
Eastern Cape	10 000	10 000
Free State	10 000	10 000
Gauteng	10 000	10 000
KwaZulu-Natal	10 000	10 000
Lesotho	10 000	10 000
Limpopo	10 000	10 000
Mpumalanga	10 000	10 000
North West	10 000	10 000
Western Cape	10 000	10 000
National	10 000	10 000

The table shows the number of learners enrolled in ABET classes in 2005, the number of educators in this specific sector, and the number of ABET centres in each province. On average there are 85 learners per centre scattered around the province of KwaZulu-Natal.

Theoretical Approach

Urban Setting as Learning Environment

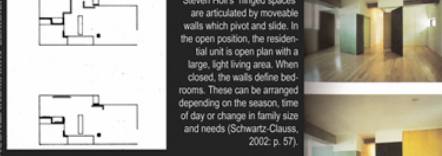
Clustering of educational units reduces costs and increases accessibility. The urban school exposes the learner to a wider variety of learning experiences and people.

Clustering of educational facilities makes centres more easily accessible.

Kinetic Architecture

Kinetic architecture allows for adaptable use, personalisation of learning environments, and flexibility of spatial arrangements.

Plans of one of the units in the Fukuzaki, Japan, show the various options available to the resident for different spatial arrangements (Schwartz-Claus, 2002: p. 57).



Educational building as landmark: Learning Resources Centre at Loyola College, Ontario (Jen, 2005: p. 29).

Urban filter defines edge and creates threshold from street to public square, Whitley Public Library (Chokoff, 2006: p. 28).

Creating the Campus Centre

The city campus acts as a landmark.

The campus landmark is an orientation device within the urban setting.

The campus landmark contributes to the urban skyline.

Defining the Edge

Barriers distinguish between public and private realms.

Landscape as a Tool for Integration

Landscape can be used to reinforce the sense of the academic district.

Landscape is a tool for creating a transition between the urban realm and the domain of the educational centre.

Symbolism and Educational Building

The new educational building is a symbol of development and acts as a catalyst for change.

Accessibility and the Adult Learner

Learners require an environment which is self-explanatory.

Equality and Education

Equal access requires a central location which is accessible by public and private transport.

Informality

In order for the adult learner to feel comfortable and respected, an informal physical and emotional environment is necessary.

Flexibility

Allows for greater variety of uses and greater enjoyment of the environment by the learner.

Teaching and Learning Environment

The many teaching methods used require specialised spaces as well as spaces which can be adapted for a variety of purposes.

There are various furniture and room layouts which are appropriate for conducting lectures (Gibralter, 1991: p. 175).

Centrifugal space: This warm and sunny foyer is inviting and sets the mood on entering the hotel (Loomis Hotel in Langentlo, 2007: p. 224).

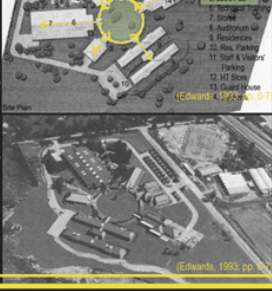
The Role of Colour

The use of the correct colours in conjunction with effective lighting influence the quality of the learning environment.

Case Study

Spatial and Accommodation Organisation

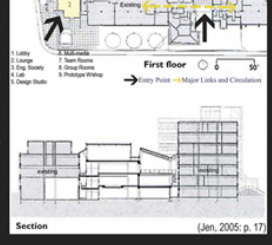
The accommodation is arranged in a radial pattern around a centrally located open space. Cross Media Centre's circular arrangement in links, with very little room to expand. It is also confusing and disorienting. The Centre is merely focused onto the central commons rather than engaging with the public.



Precedent Study

Introduction

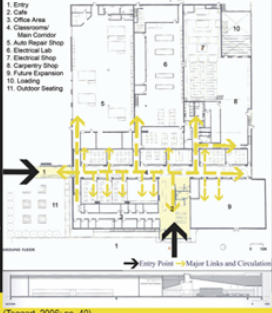
This is the Integrated Learning Centre at the Beamish-Munro Hall to the Queen's University, Ontario. The building incorporates innovative technologies and classroom design approaches to support the Engineering Faculty's mission which aims to bridge the gap between theory and the practical application of engineering. The building is an initial project, inserted between two existing buildings on the campus. The building consequently only has two elevations, providing limited light and ventilation. Additional light and natural ventilation is provided for by a central atrium which is a rich and stimulating educational scene (Jen, 2005: p. 17).



Precedent Study

Introduction

The College of New Caledonia offers a wide range of courses, including university credit, technical, vocational and general interest programs. The main campus is located in an area on the outskirts of the town characterized by "big box" retail shops and other vehicle-related functions. The new addition to the College is located in one such old warehouse. The budget for the renovation was limited, requiring the innovative use of materials.



Positive Learning Environments

Cross Media Centre's commons is of too large a scale to act effectively as a linking mechanism. There is little connection from one activity to the next across the commons or along the walkway, and the scale is overwhelming and disorienting. However, the use of focal materials and traditional verandas, as well as natural daylighting and ventilation do result in a pleasant internal learning environment.



Introduction

This is the Integrated Learning Centre at the Beamish-Munro Hall to the Queen's University, Ontario. The building incorporates innovative technologies and classroom design approaches to support the Engineering Faculty's mission which aims to bridge the gap between theory and the practical application of engineering. The building is an initial project, inserted between two existing buildings on the campus. The building consequently only has two elevations, providing limited light and ventilation. Additional light and natural ventilation is provided for by a central atrium which is a rich and stimulating educational scene (Jen, 2005: p. 17).



Entry Sequence and Spatial Relationships

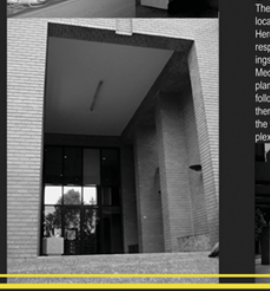
The building is entered via one of two entrances, either from the car park area or from the main entrance. The main entrance acknowledges the students approaching from the main campus, and simultaneously provides a comfortable transition from the urban scale to the human scale.

The building is planned with the major functional spaces arranged around simple circulation areas. These are afforded additional light by the roof lights. The class rooms "borrow" light from the corridor by means of glass display cases, designed for the purpose of illumination and for the display of student work.



Flexibility, Informality and Comfort

In the Cross Media Centre, the structure is rigid, with infill walls which can be adapted to different needs as they arise. However, these walls are semi-permanent and can only be adapted over a period of weeks or months.



Innovative Classroom Design

The facility is focused around a central atrium space which is overlooked by the teaching spaces. These are not typical classrooms, but rather "reading places" which are defined by sliding partitions which, when opened, allow the passer-by to share in the activities within. The visual connectivity reinforces the mission of the facility.

Being a faculty of engineering, the building here is viewed as an educator. Structure is exposed in order that the technologies in play may be seen and understood by its students. Overall, the environment created is one that is a rich and stimulating educational scene (Jen, 2005: pp. 16-19).



Flexibility, Informality and Comfort

The orderly layout of the building allows for a flexible adjustment of spaces as the needs of the College change over time. The noisy spaces are located away from the quieter teaching spaces and are separated by noise buffers of stores and services.

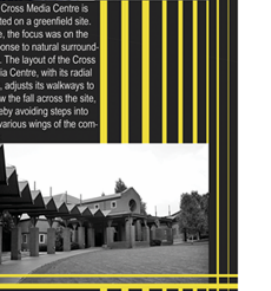
In the centre of the building are the lounge, cafe area and gallery. Their arrangement is informal to encourage interaction between students and faculty members. The cafe is a free-standing object which, as a timber element, is symbolic of the teaching which takes place at the College.

The flexible design of this College encourages the interaction between students and faculty, creating a sense of equality which encourages adults to learn (Taggart, 2006: pp. 39-42).



Response to Urban Context

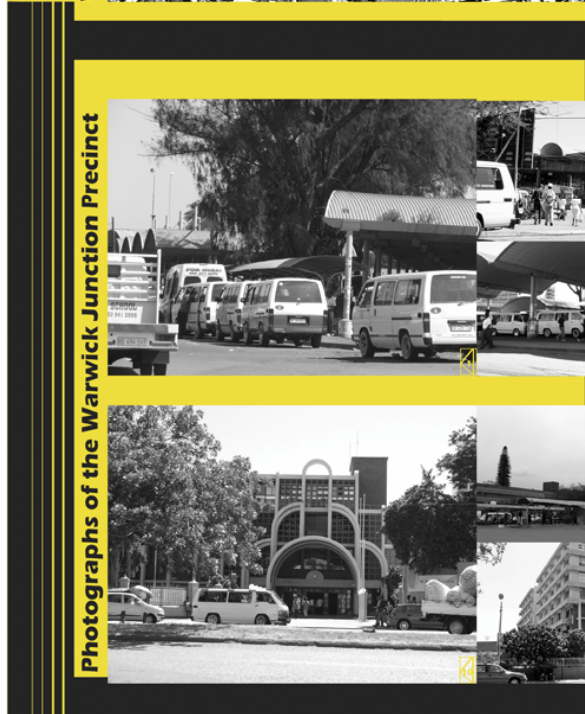
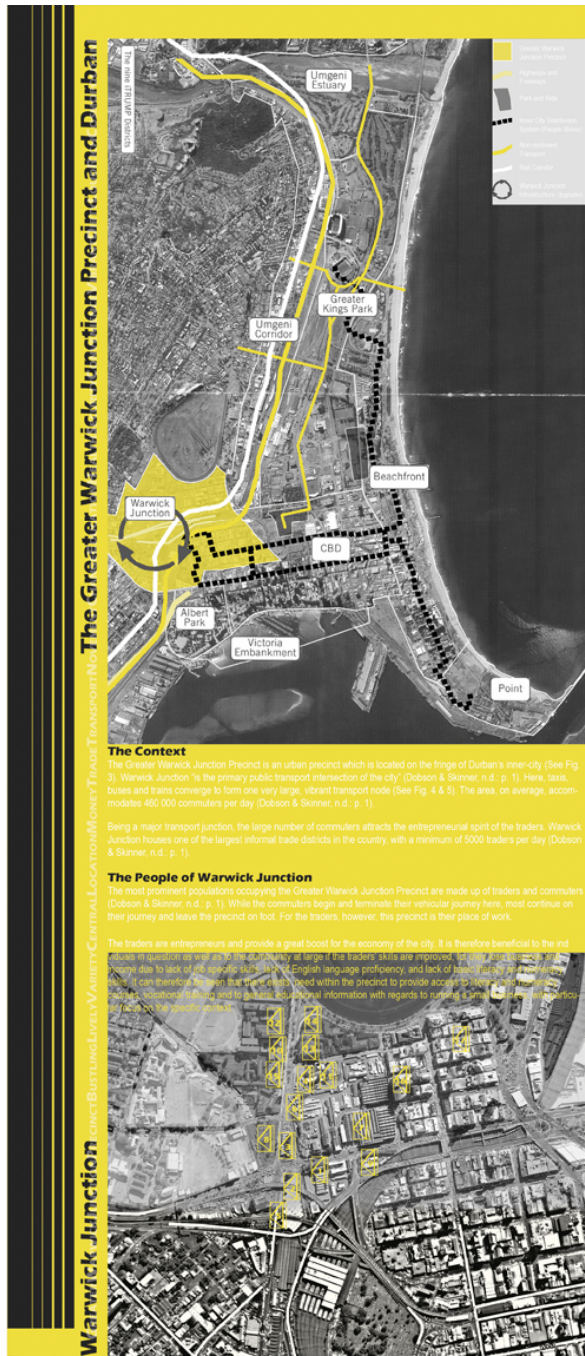
The Cross Media Centre is located on a greenfield site. Here, the focus was on the response to natural surroundings. The layout of the Cross Media Centre, with its radial plan, adjusts its walkways to follow the fall across the site, thereby avoiding steps into the various wings of the complex.



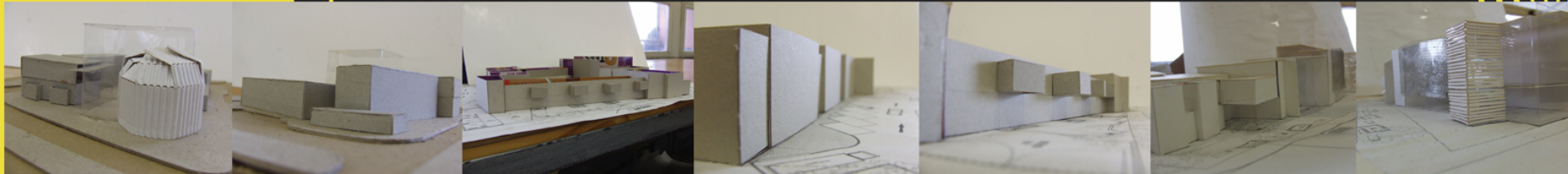
Entry Sequence and Spatial Relationships

The building has four entry points as well as links through the building to the two adjacent existing buildings. The main entrance is a transition from the small quad into an entrance lobby. From here the form and angles of the interior spaces direct the user towards the focal points of the facility, namely the prototype workshop, design studio and multi-media rooms. The main paths which link the existing facilities to the new entrance, these major functions, resulting in the formation of a central atrium onto which spaces open.





Form in Models



Design Concepts Summarised

Design Concepts

Accommodation Schedule Schematic 1:1000



Design Brief
The functions of a Centre for Adult Basic Education and Vocational Training can be divided into four distinct groups. These are: retail, administration, learning resources centre and teaching spaces.

The design of a Centre for Adult Basic Education and Vocational Training should facilitate the aims and objectives of the client, but focus in this case in particular on the development of "community learning and technology centres for lifelong learning and income generation". The proposed centre should therefore incorporate technology and income-generating skills training facilities into the curriculum, and therefore facilities. The centre will cater for 680 learners, facilitators, administrative staff and library users. The possibility of a second phase to the development to include facilities for educational tools development and educator training can also be accommodated on adjacent sites.

Design Concepts
The design concepts are developed out of the design brief which states that the consideration of certain key factors will result in a successful centre for adult education. These are interface, informality, legibility and flexibility. Concepts have been further developed to include comfort, adaptability and accessibility. These concepts will be used to influence the design development of the proposed Centre for Adult Basic Education and Vocational Training.

Interface
The interface between the public and private realms should be transitional, thereby including the public in some of the activities of the proposed centre. This concept has been further developed to include the interface between indoor and outdoor spaces, where the boundary can be blurred through the use of materials and intermediate space.



Informality
Informality is vital in establishing an effective and positive learning environment. The informal arrangement of functional spaces around a centrally located space encourages chance encounters and interaction between learners and educators. An informal environment positively reinforces the establishment of the relationship between the educators and the learners, allowing for the establishment of mutual respect and thereby opening lines of communication.



Legibility
Clearly defined paths make the building easy to understand and use. Further, legibility is enhanced by the clear gradual transition from the public to private realms.



Flexibility
Different internal configurations within the core elements of the facility allow for flexibility and personalisation of spaces by the users. This facilitates the various learning goals and teaching methods established by the individual educators and learners.



Comfort
Comfort within the learning environment constitutes a very important factor in determining the quality of that learning environment. Comfort can be enhanced by the function and adaptability of a space, by the furnishings, and the provision of means for promoting natural ventilation, lighting and overshadowing.



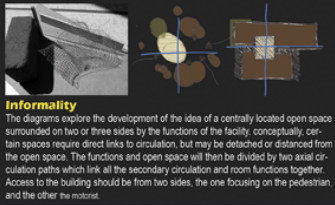
Adaptability
Large span open plan structure allows for the adaptable rearrangement of furniture and functions according to changing needs of the users of the proposed centre.



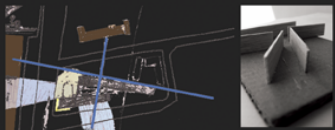
Accessibility
The establishment of links between existing facilities and public transport networks makes the site easily accessible to the largest portion of the community possible. Accessibility also refers to the media used and appropriateness of the information which is made available to the user.



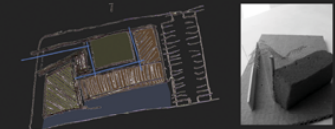
Concept Exploration



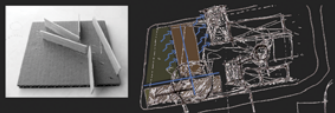
Informality
The diagrams explore the development of the idea of a centrally located open space surrounded on two or three sides by the functions of the facility, conceptually, certain spaces require direct links to circulation, but may be detached or distanced from the open space. The functions and open space will then be divided by two axial circulation paths which link all the secondary circulation and room functions together. Access to the building should be from two sides, the one focusing on the pedestrian and the other the motorist.



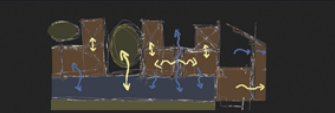
Accessibility
Here this is explored. A visual link with surrounding educational facilities can be made through the orientation of the building, the north-facing northern wing focuses on the teaching block of St. Anthony's School across the road, as well as gestures along the axis towards DUT. A physical connection is suggested through urban design tools. The creation of a public square which links to the economic activities of the informal traders across the street is linked by a change in road surface and formalised pedestrian crossing at this point. A public face is created at the apex of the site which will serve as the focal point to the pedestrian and motorist accessing the site from the site from the south as well as from the north.



Landmark
The establishment of a landmark signals the location of this building, which is important to giving it an identity with which the community can relate. However, the blind wall and circulation space which faces St. Anthony's School negates the intention to establish a visual connection between the two learning environments. Further, the enclosed open space negates public use, thereby eliminating the possibility of a public asset. The internalisation of the facility is exclusionary and will not encourage public interaction with the facility.

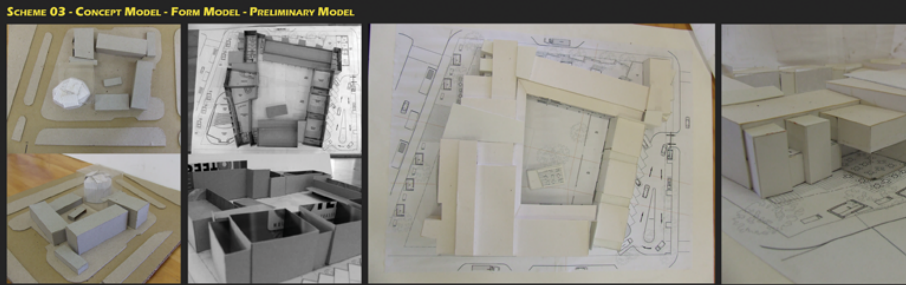
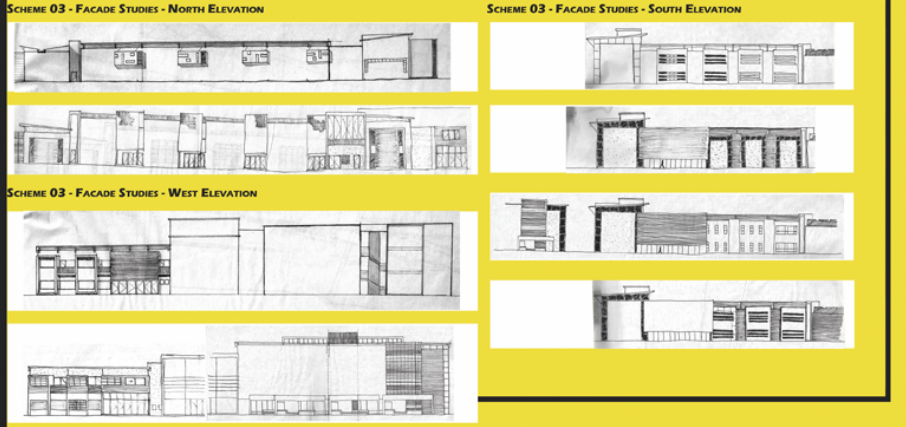


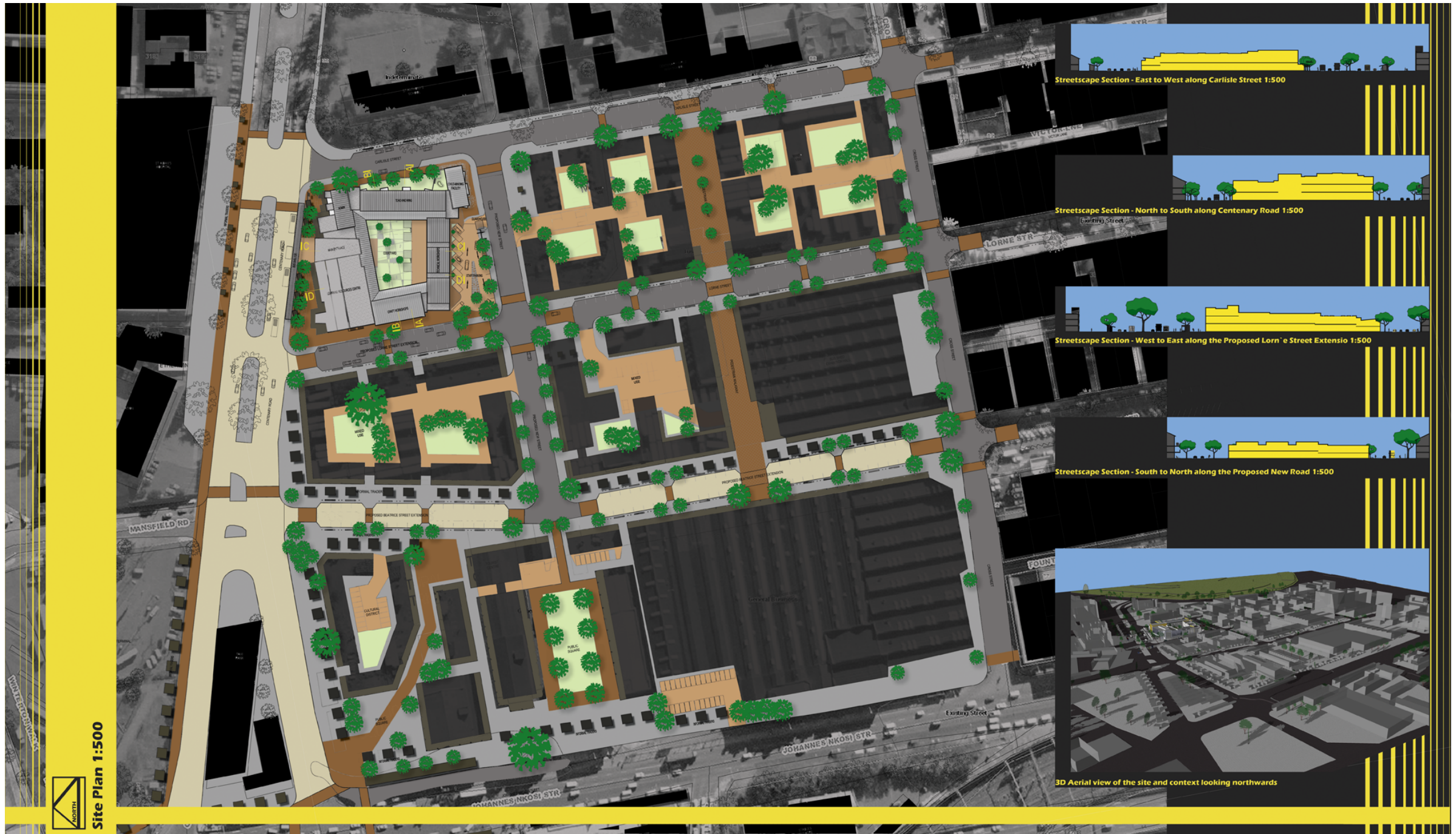
Legibility
Two linear buildings connected by a central entrance foyer which can be accessed from two sides by pedestrians and motorists results in the formation of a public square. The public square will provide a location for public gatherings and informal markets to occur. The public face will be enhanced on the north and west faces by the inclusion of shops and a cafe which are accessible to the public. The compact nature of the footprint responds to the surrounding context.



Flexibility
In the development of an ideal classroom model, flexibility is of vital importance. Single spaces should offer adaptability by means of moveable furniture and adjustable room configurations. Breakaway spaces which can be used independently or as an extension of the classroom offer choice to the users of the teaching spaces.

Design Development







Ground Floor Plan 1:100



East Elevation 1:100



Section B-B 1:100





First Floor Plan 1:100



South Elevation 1:100



Section C-C 1:100



3D Aerial View From the North West



3D Aerial View From the South West





Second Floor Plan 1:100



3D Aerial View From the South East



3D Aerial View From the North East



North Elevation 1:100



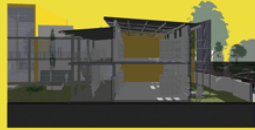
Section D-D 1:100



Climatic Response and Technical Realisation

Solar Shading - Teaching Spaces

This section illustrates that the eaves overhang is adequate to protect the north-facing teaching spaces from the harsh summer sun, but allows winter sun to penetrate into the spaces.



Solar Shading - LRC & Workshops

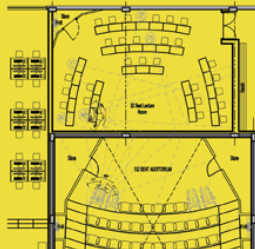
The east-west facing workshops are protected from direct light by the polycarbonate wall cladding on both sides, which allows diffuse light into the space, thereby avoiding glare. The Learning resources centre is shaded on the western side by means of a metal fabric screen which allows only late afternoon sun to penetrate at a very low level.



Critical Sight Lines

The part plan below serves to assess the lines of sight within the lecture room and auditorium on the first floor in order to determine whether all persons seated in the spaces will be able to see and hear the speaker. Visibility and audibility are essential factors influencing the quality of the learning experience.

The angles used to check visibility are indicated on the plan.



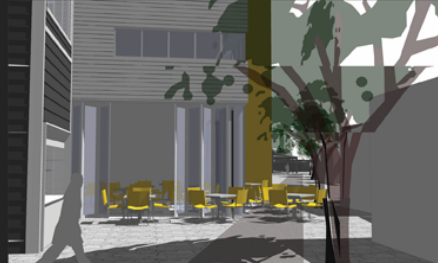
Part First Floor Plan 1: 100

Perspective Views

VIEW OF NORTH EAST CORNER FROM CENTENARY ROAD



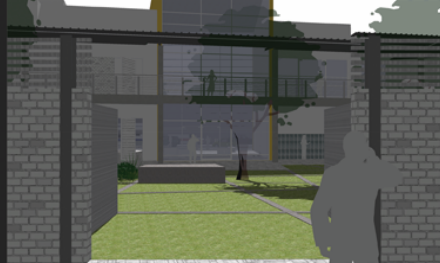
VIEW OF THE COFFEE SHOP FROM THE NORTH



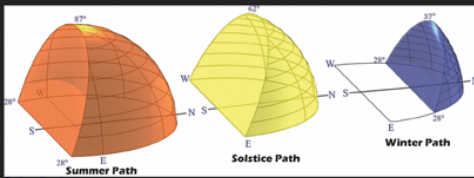
VIEW OF COURTYARD FROM THE MAIN ENTRANCE



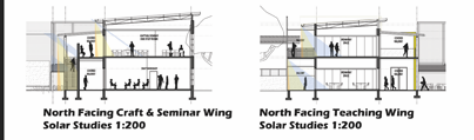
VIEW OF THE MAIN ENTRANCE FROM THE OUTDOOR WORKSHOPS



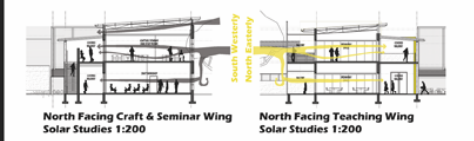
Environmental Considerations



Solar Paths



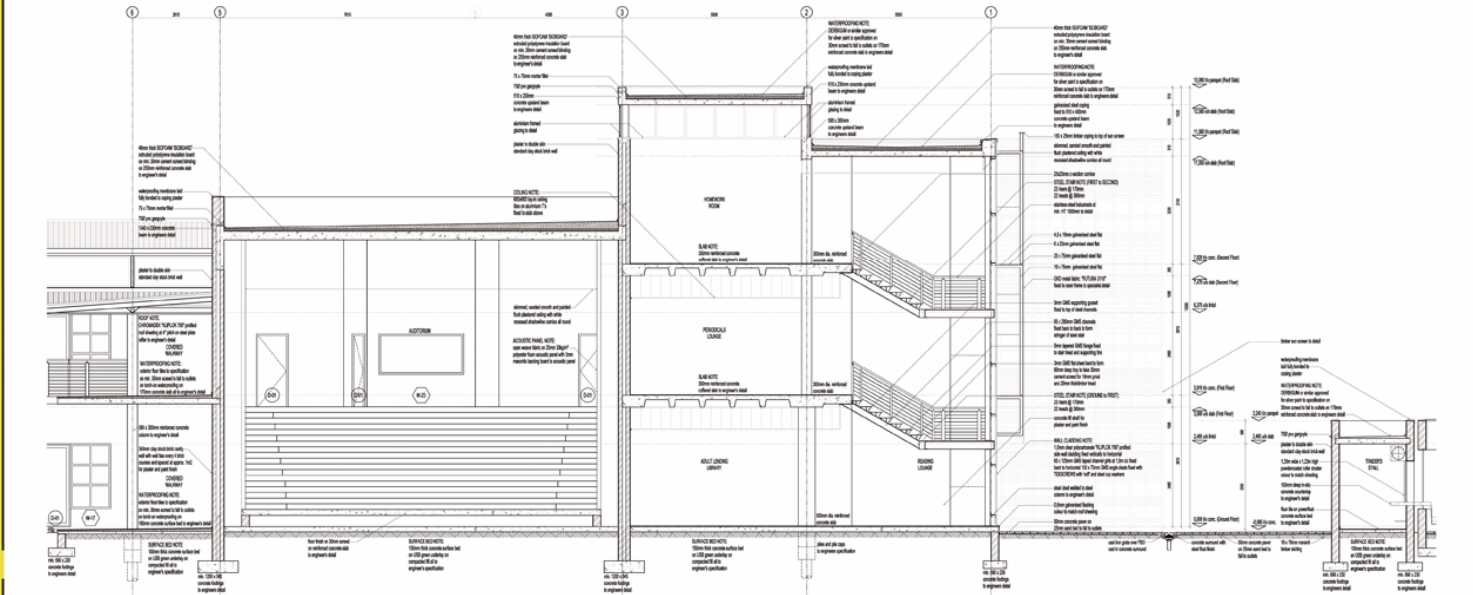
Solar Studies 1:200



Solar Studies 1:200

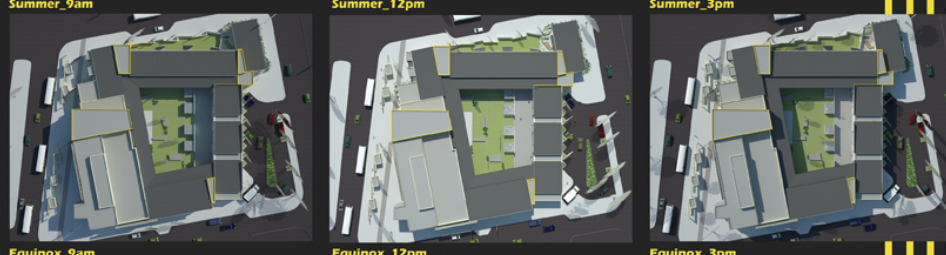
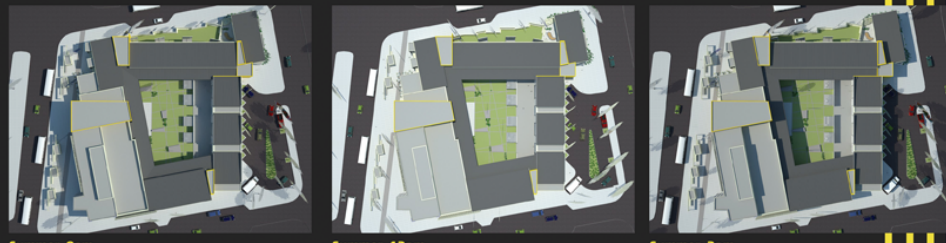


Natural Cross Ventilation



Partial Technical Section 1:50

Shadow Studies



3D Perspectives

