

University of Cape Town

The Architecture of Learning Environments & Community Integration

Design Research Project APG5058S
Submitted in partial fulfilment for the degree
Master of Architecture (Professional)

By
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October 2012

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COURSE CODE_APG5079W

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The financial assistance of the National Research Foundation (NRF) towards this research is hereby acknowledged.

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Glossary

- WCED – Western Cape Education Department
- WEPS – Walmer Estate Primary School
- OBE – Outcomes Based Education
- NCS – National Curriculum Statement
- ICT – Information and Communication Technology

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Introduction

This thesis is focused on architectural theories and design concepts which will add to the discourse of what learning environments should or could be in the 21st century. It is based on the idea that spaces for learning need to be more “alive” and that architecture can stimulate positive social interaction between people. The current public education system and its related standards, requirements and policies, with regards to physical learning spaces, does not address the present needs of children as it ought to. Many schools in South Africa are not built and designed to function as sustainable buildings and they often do not cater for the economic, environmental or social needs of current and future learners, teachers and community members.

The academic curriculum in South Africa is changing (improving?) whilst learning spaces are staying the same or becoming less and less appropriate for learning. Schools are designed and structured in the way it used to be almost two centuries ago and are becoming increasingly more standardised leading to environments that do not make children feel ‘at home’ or comfortable in these spaces which ultimately have a negative impact on learning.

This dissertation seeks to provide an answer as to how design and architectural knowledge can inform the physical form, structure and spatial dynamics of educational buildings so that these buildings can function as sustainable integrated community buildings that stimulate learning and interactivity.

Primary education (Grade R – 7) and school building in Cape Town is of particular interest for this investigation.

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Changing education paradigm and the effect of learning environments

Sir Kenneth Robison

According to Sir Kenneth Robinson, an internationally recognized leader in the development of education, creativity and innovation (Nick Egan, 2012), the public educational system that we have today was designed, conceived and structured for a different era. It was conceived in the 18th to 19th century in the intellectual culture of the enlightenment and in the economic circumstances of the industrial revolution. It is a system modelled on the interest of industrialization and in the image of it. This can still be seen in organization of schools today. Schools are still structured on factory lines: ringing bells, separate bathroom facilities for boys and girls, and classrooms specialized into separate subjects. (Robinson, 2010)

Children are still educated by batches. The most important thing about children is how old they are. Their identification is based on their date of birth as the date of manufacture. But in actual fact children of the same age are interested in different disciplines, some work better at night and some better in the day, some prefer working in bigger groups, some in smaller groups and some want to learn on their own.

Robinson furthermore states that if one wants to improve the current model of learning, you cannot start from the production line mentality. Today, it is increasingly more about conformation and standardisation of curricula and learning environments. We need to change this paradigm. The answer is in divergent thinking. We have to think differently about human capacity. (Robinson, 2010)

Schools for the Future - Rotraut Walden

In *Schools for the Future*, Rotraut Walden states that school building today is very different from that of earlier periods, as a result of more advanced pedagogical insights. Unfortunately, many of the physical learning environments in South Africa do not portray this. There is still a disconnection between advanced educational theories and the built environment that is meant to facilitate these.

"The conventional rectilinear shaped classroom with desks in rows and columns is the most visible symbol of an educational philosophy that emphasizes repetition, sameness, standardisation, in short, an assembly line model of learning. Under this model, it made sense to regiment several classrooms next to each other and place them on long corridors that could easily be supervised. This model, that we might call the old paradigm, most closely represents nearly a two-century old pattern whereby the day itself could be broken down into 45-minute segments of prescribed activity." (Walden, 2009, p. 162) This is very much the way most schools are functioning in South Africa today. It is time for change.

Walden notes that under the new learning paradigm, the patterns of learning are such that many educators now advocate that students learn best if grouped in varying ages, learning different things from different people in different places, different ways and at different times. The spaces set up for the old assembly-line paradigm would be very difficult to modify to function well for the new model that requires the need for multiple modes of learning. (Walden, 2009, p. 162)

PART A

TIMELINE: Architecture of Learning

South African Education History
Global Education History (Mostly British Influence)

PLANNING AGENCIES	EDUCATION POLICIES	WORLD EVENTS	SCHOOLS	POST OCCUPANCY EVALUATION
<p>1827 Glasgow Infant School Society (Scotland)</p> <p>1834 Glasgow Education Society (Scotland)</p> <p>1847 Henry Kendall (UK) Book: Designs for Schools and School Houses. Gothic architectural style with little to no reference to transfer function.</p> <p>1848 Henry Barnard (UK) Book: School Architecture. Mainly concerned with pragmatic health and safety needs of children</p> <p>1899 John Dewey (UK) Publication: School Society. Importance of community.</p> <p>1894 - 1904 Director of School of Education (Chicago University) Explored new ways of teaching. He came to formulate democratic (as opposed to authoritarian) principles and hands-on instruction which revolutionized educational practice. Importance of community for individual development. Importance of stimulating children's senses as part of the educative process.</p> <p>1874 E.H. Robson (UK) Book: School Architecture - Practical Remarks on the Planning, Designing, Building and Furnishing of School Houses. Prussian system separate classrooms organized around a common hall. Separated desk to allow teacher to inspect academic progress of each child. Separate boys and girls classrooms. 40-40 pupils in a classroom. Windows were higher up so that children would not get distracted. The idea of the dividing curtain between classrooms also introduced.</p> <p>1920 Percy Nunn (UK) Book: Education - Its Data and First Principles.</p> <p>1924 Susan Isaacs (UK) Publications: 1920 - Intellectual Growth in Young Children. 1923 - Social Development in Young Children.</p> <p>1930's - 1940's Reported large institutional buildings with multi-functional spaces to match complex social and academic aspirations. Light and air very important. Public buildings (including schools) - landmarks.</p> <p>1948 The Architects and Buildings Branch of the UK government's Education Department established. Prefabrication systems in schools.</p> <p>1949 - 51 Report of the Commission of Enquiry into Native Education (more commonly known as the Huxton Commission Report). The commission articulated a vision of education "as a vital social service concerned not only with the intellectual, moral and emotional development of the individual but also with the socio-economic development of the Bantu as a people" (Pheasant, 2002, p.48)</p> <p>The commission emphasized the co-ordination of agricultural education in the schools with state agricultural projects. i.e. linkages between training programs and employment opportunities.</p> <p>1961 The Architects and Buildings Branch of the UK government's Education Department. Focus on small village schools.</p> <p>1967 The National Education Policy specifies the Bantu Education Act and places schools under the purview of Education and Training.</p> <p>1984 Nationalist theory of identifying four different ethnic groups was materialized through four different educational systems. Four bodies formed: House of Assembly (HOM) - white students; House of Representatives (HOR) - coloured students; House of Delegates (HOD) - Indian students; House of Education and Training (HET) - Afrikaans living in townships.</p>	<p>1833 Factory Act (UK)</p> <p>1870 Elementary Education Act (UK) lead to 2 to 3 stage structure comprising pre-school, primary and secondary schools</p> <p>1872 Scotland Education Act A school board to be established in each district.</p> <p>1933 Bantu Education Act Formalized segregation of this education.</p> <p>1944 Butler's Education Act (UK)</p> <p>1963 The Coloured People's Education Act</p> <p>1965 Indian Education Act</p> <p>1967 The National Education Policy specifies the Bantu Education Act and places schools under the purview of Education and Training.</p> <p>1995 CBE Syllabus: Outcomes Based Education The Outcomes Based Education model was designed to break with the basic education of the past and to make education relevant to the needs of the pupil, society and the labour market.</p> <p>1997 Department of Transport and Public Works emphasis on community consultation and participation. Poverty relief, training and skills transfer, sustainability.</p> <p>1997 Curriculum Assessment Policy Statements (CAPS) New curriculum for schools</p> <p>1996 South African Schools Act Schooling is compulsory for children aged 7-15, but attendance in Grades 1 to 6, which are corner stones.</p>	<p>1817 Russian Revolution</p> <p>1750-1850 Industrial Revolution England had been the first country to experience industrialisation and sought educational provision for the so-called industrial classes in the beginning of the 19th century. Schools were usually part of church or commercial institutions. Architectural emphasis upon external style of the building.</p> <p>1914-1918 World War I Development of mass education. Less of men lead to more female teachers.</p> <p>1939-1945 World War II Schools located around the edges of expanding suburbs. Concern for health, fresh air and ventilation.</p> <p>1948-1995 South Africa Apartheid</p> <p>1976 Soweto Riots</p> <p>1970 Information Digital Age Fast evolution of technology of educational life style, the Information Age has allowed rapid global communications and networking to shape modern society.</p> <p>1919-1945 Major conferences on hygiene 1905 Nuremberg 1907 London 1910 Paris (Open air-school movement)</p> <p>1930's - 1940's 20 year effect - philosophical pragmatism</p> <p>1948-1995 Ongoing effect - political influence</p>	<p>1816 Robert Owen Marcel Infant School in his New Lanark industrial community (Scotland)</p> <p>1874 E.H. Robson (UK) Book: School Architecture. School as a house. Individual (ideal) rooms. Clearly articulated circulation routes and large assembly hall at its heart.</p> <p>1901 Toni Garnier (Paris) Ideal City - "Cité Industrielle", Garden City Approach - more green open spaces and a comprehensive education system central to the planning. Age related classrooms - less building.</p> <p>1910 R. Urmelin and B. Parker (UK) Village School Movement. Large village green.</p> <p>1924 Susan Isaacs (UK) Principal of Mating House School. (similar to Montessori Schools) Natural environment, freedom of expression and importance of community. Basic: We 488's development.</p> <p>1930 Henry Morris (UK) Mix-use programme.</p> <p>1948 Derys Laund (UK) Tshaanamsi Elementary School, multi-level school.</p> <p>1950 Standardized Schools</p> <p>1950's Aldo van Eyck (UK) "Space in-between"</p> <p>1951-60 Hans Scharoun (UK) Anti-modern. Functional ethos.</p> <p>1960 Core Schools Breaking away from standardization.</p> <p>1967 New generation of educationalists (UK) Reject Modernism completely.</p> <p>1980 Herman Hertzberger Apollo school. Social interaction, rather than autonomous isolation, became the educational strategy embodied in his school buildings.</p> <p>1980 Signature schools Signature schools have their own identity and in most townships add to the character of the surrounding built fabric. The schools have secure and closed-in courtyard natural light and ventilation to highly considered and the use of robust materials are a requirement.</p>	<p>Established in 1827, Levenshoe Village 188. Levenshoe Village, Levenshoe, Cumbria. Initially designed as a school for the poor, but later became a school for the middle class. Later, Levenshoe High School was added, but Levenshoe High remained the only place in the country where the two schools were built on the same site.</p> <p>Early white schools were modelled after one or the other of the two main types of school: the traditional school and the new school. The traditional school was a simple rectangular building with a central hall and classrooms on either side. The new school was a more complex building with a central hall and classrooms on either side. The new school was a more complex building with a central hall and classrooms on either side.</p> <p>Established in 1876, DeWitt College (Barnesville in Barnesville, CT. Private school).</p> <p>Victorian era inside in the entrance and obnoxious with natural light and fresh air within the classroom. The design is more too turned, large and high for modern needs.</p> <p>1847 Bunsenburn girls school in Bunsenburn, C.T. Private school.</p> <p>1902 C.R. Mackintosh architecture high quality of materials and other circulation areas. Better spatial awareness than Robson's buildings.</p> <p>1911 Whitby Woods Open Air School, Sheffield. More spacious approach to the environment.</p> <p>1918 Tshaanamsi Elementary School, Alvar Aalto.</p> <p>Current floor plan of Hans Scharoun's project for a primary school. Darmstadt 1951.</p> <p>The village of Hoxton ground plan of a school (1954-56). Aldo van Eyck Collection.</p> <p>1976 High School, Singapore.</p> <p>2007 International Secondary School, Weybridge, UK. Physically separate to the structure of the school, but accessible to it, while not appearing institutional.</p> <p>2006, Yassawa Secondary School, Beira, Mozambique, C.T.</p> <p>2008, Weymouth Primary School, C.T. (Dorset), UK. (C.T. = Church of England).</p> <p>Recent programs of school design are oriented to educational benefits of the place. Emphasis on the state school being the center of the community and accessible to all citizens.</p>

Understanding history of SA schools in the global context (timeline)

From this timeline it is clear to see that the concept of public education emerged around the same time as the industrial revolution and how that still has an effect on the planning of schools today.

Also what can be seen here is that the idea of schools functioning as significant community buildings is not new, and makes sense even today as it did in the past.

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Identifying the problem in the South African Education Context

In South Africa “government’s contribution to public education remains its single largest investment, as that it is the key to reducing poverty and accelerating long-term economic growth... The Bill of Rights, contained in the Constitution, 1996, stipulates that everyone has the right to a basic education, including adult basic education and further education, which the State, through reasonable measures, must progressively make available and accessible.” (Burger, 2012)

After 1994, the new democratically elected government of South Africa had to (and still have to) deal with one of the most inequitable and disintegrated education and training systems. It is a system with unequally distributed education resource inputs which has a negative impact on learning. The current physical teaching and learning environment is the most visible indicator of inequitable resource inputs, disconnectedness and unsustainable education systems that we have to deal with today. (Government Gazette, June 2010)

Schools seem to be built the way they are because of the major backlog in school provision and the subsequent limited design and construction time and also because limited funds are obtainable from government. There seems to be the perception that if schools are built the way they are currently, we are saving money and time.

This document in support of the thesis project will suggest ways of designing and planning learning environments that cater for the needs of its users in a better way, and could function and have a better physical appearance than most conventional public schools in South Africa. In addition, it will discuss how certain building materials and simple technology systems can be used in an inventive way to create better interactive learning places. A change needs to take place where school buildings are more about making informed design decisions, placing emphasis on what is really important and noticing design opportunities through creative thinking and in so doing create stimulating and successful learning environments. Specific design opportunities and what is important in learning environments are identified in this document and will be discussed later on.

Curriculum, policy and infrastructure strategies:

Current curricula and pedagogical reforms such as Outcomes Based Education Curriculum Framework (2005) and the New National Curriculum Statement: Schooling 2025 (2010) with its related learner-centered pedagogy imply the need for more generous classroom spaces and furniture that allow for flexible seating and grouping arrangements. They also imply better equipped classrooms and special teaching areas, more flexible multi-purpose learning areas, learning resource centres, library stocks, ICT’s and more enriched teaching & learning environments. If this is what is important for education and part of the government’s policy, why then are new schools still being built the way it has been years ago?

The design project will aim to provide a better built environment in which the above spatial considerations will be an integral part of the design.



Image from www.scotland.gov.uk/Publications_2007

Theoretical position

Approaches and theories for better learning environments

Research of specific approaches and theories was done as part of the project to more fully understand what constitutes a successful learning environment and how architecture can influence the process of learning. An investigation into what makes 'happy' built environments was helpful, but more concrete school related design theories and concepts were needed.

In *Schools for the Future*, Walden mentions a number of patterns that have been found to work well for modern learning environments. Some of these patterns include 'the neighbourhood' concept, the 'schools-within-school' concept, 'the smaller learning community', 'the learning studio', 'school as a three-dimensional textbook', the indoor-outdoor learning connection, and social breakout space.

These patterns represent the translation of research and best practice from a variety of sources within the educational, psychological and architectural literature. "The common underlying premise is that all learning environments should be learner-centered, development- and age-appropriate, safe, comfortable, accessible, flexible, and equitable in addition to being cost effective." (Walden, 2009, p. 7) Most of these are the same premises identified in the new South Africa education curriculum and related policy documents.

Walden's research of specific theories, approaches and patterns have formed the basis from which I have identified the following design clues, from which I interpreted and added my own opinion in order to have a good theoretical base:

1. School at the heart of a sustainable integrated community

The first concept deals with the school and its specific context. An important aspect that is stipulated in the government's policy document with regards to the design of schools is that schools need to act as community centres where life-long learning can take place. To more fully integrate a community, schools can extend the learning environment so that they become community midpoints, and consequently become more intensely used. This can and generally will result in better maintained spaces as more stakeholders will take on the responsibility of looking after the areas and more funds will usually be available for the management and maintenance of these parts of the school.

Walden states in *Schools for the Future* that "the school is not just a place for instruction, but a living venue for learning and play, as well as a meeting place for users from the surrounding community"... "This not only facilitates the formation of new friendships and acquaintances but also counteracts vandalism by outsiders." (Walden, 2009, p. 5; 2)

If the users (learners and educators) of a school environment share the space and the action with the wider community, they can become better informed individuals as they learn more about themselves and the world through the interaction with others. (Wernick, 2008)

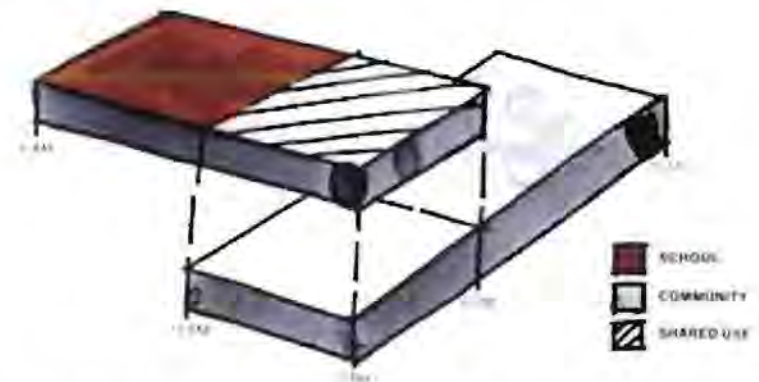


Diagram from (Educational Facilities Laboratories Inc., 1973) indicating school that functions as a community building

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2. The Small Learning Community (SML)

The second approach is that of designing a small learning community (SML). According to Walden, a small learning community is a fully autonomous or semi-autonomous grouping of no more than 150 students who share a common space... "Ideally, small learning communities should each have their own outdoor connections and may contain its own multi-purpose social space." (Walden, 2009)

SML's can not only stimulate an improved sense of community, control and ownership; it can also make maintenance and management better because of its smaller size. If a number of SML's are in close proximity to each other, it can provide more options for parents and children as to where and how they want to be educated. It can therefore make community integration of the larger context possible and allow for better learning environments.

In addition to these advantages Walden et al. notes that participation in school activities, extracurricular activities, student satisfaction, number of classes taken, community employment have been found to be greater in small schools relative to large schools. (Walden, 2009, p. 163)

3. Legibility, Accessibility & Controlled Entry Points:

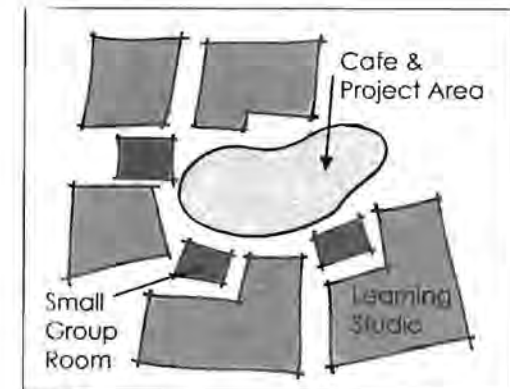
A clear legible architecture language is important where the individual can understand the spatial hierarchy and be aware of what is public and what is private. If a school is illegible, it causes disorientation and children often experience considerable mental stress as a result.

Herman Hertzberger* suggests that different forms of accessibility can be expressed with "differences in the articulation of form, material, light and colour, and thereby introduce a certain ordering in the design as a whole. This can in turn improve the awareness of inhabitants and visitors of how the building is composed of different ambiances and qualities as far as accessibility is concerned. The degree in which places and spaces are accessible offers standards for the design." (Hertzberger, 2009, p. 19)

It is important to have clearly identifiable access points into the school. The entrances are the places where most interaction between different users occurs. This social interaction is a vital part to the learning process and will be discussed in more depth later.

In addition, it is important that these access areas be safe 'controlled' spaces as security is a vital consideration when designing a learning environment. How this can be achieved, will be discussed in the design approach section.

**Note: Herman Hertzberger, is a well-known architect of social buildings, one of his projects will be discussed later.*



Small Learning Community. Image from *Schools for the Future* p.163, R. Walden. 2009.

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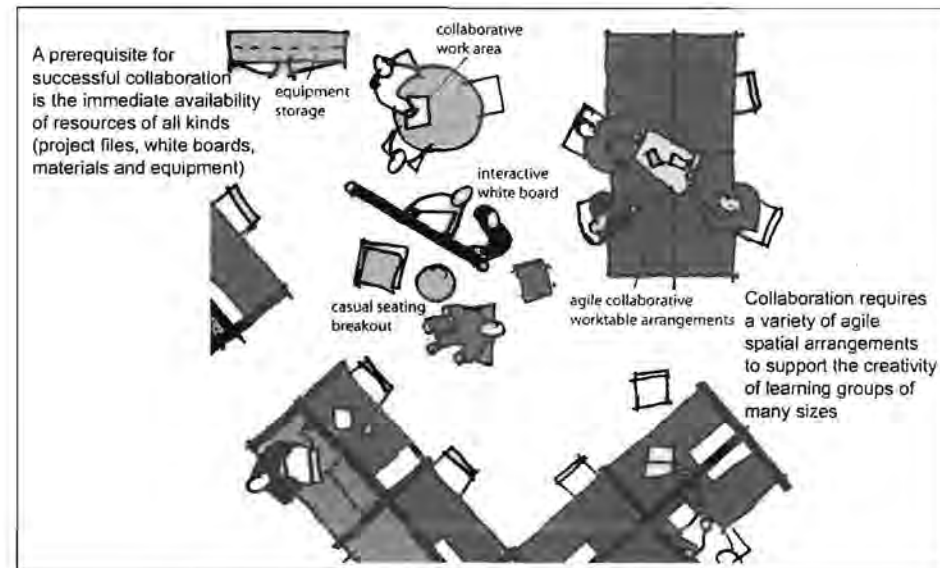
4. Collaborative Learning Spaces:

"Social discourse and collaborative learning are critical to the development of well-rounded citizens. These skills are actually at the top of the list of qualification for success in almost any global profession..." (Walden, 2009, p. 161)

School designs that support personalised, self-directed learning as well as collaborative group learning activities are much needed in learning environments. In *Schools for the Future*, Walden et al. have identified a variety of collaborative environments: Variable sizes spaces that are easy to change to support several learning activities within the same space; individual workspaces that can be personalized providing a sense of ownership and teaches responsibility for one's own learning; faculty team spaces with adjacent material preparation areas and meeting space that encourages team teaching, mentoring of faculty and collaboration. (Walden, 2009)

Functional spaces for collaborative learning activities, also identified by Walden, include: presentation spaces for individuals and teams to demonstrate their learning and share knowledge acquired with the larger learning community; the continued need for classroom spaces for direct instruction of concepts, content and skills; process galleries, studios that allow for the display of on-going projects; project space that provides a variety of work surfaces, storage and access to technology to encourage critical thinking, problem-solving and teamwork; home base for gathering of learners and faculty to seek for assistance and resources or hold group discussions; informal, non-classroom, learning places such as study spaces, lounges and outdoor spaces to provide areas for socializing, and serendipitous meetings that can foster creative thought and solutions to problems; and a collaborative 'idea generation space' to support creativity, teamwork, prototyping of concepts

which can also encourage the involvement of local employers in the development of projects. (Walden, 2009)



Space for collaboration. Image from *Schools for the Future* p.160, R. Walden. 2009.

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5. In-between Learning Spaces – specifically the corridor:

The corridor can significantly contribute to the process of learning. As an in-between space that everyone needs to move through, it has the opportunity in its form to allow for positive interaction with others. This interaction is an important part of learning as mentioned before.

In most of South African public schools, the corridor is a long linear space which does not allow for positive social interaction and informal learning opportunities.

David Halpern's* study of the standard linear corridor, states that students adopt a strategy of physical and psychological withdrawal that changes their behaviour not only inside the building but outside it too. (Wernick, 2008, p. 71)

He maintains that in design terms, the corridor design is very efficient and economical and that it is a design choice that often presents itself, and reinforces the logic of bringing blocks of services together, which is generally placed relatively close to the 'grand entrance' of the building. But the problem with standard linear corridors is not just that the students are forced into unwanted social situations, but also that the corridor space is long and narrow, constrains group formation and is generally predictable and boring, without openings or views out. There is therefore no function to the corridor apart from travel. It is not designed for good social interaction. It makes you feel vulnerable because there is no escape other than your own classroom door. (Wernick, 2008, p. 76)

Similar design strategies were and still are implemented by the Western Cape Education Planning Department.

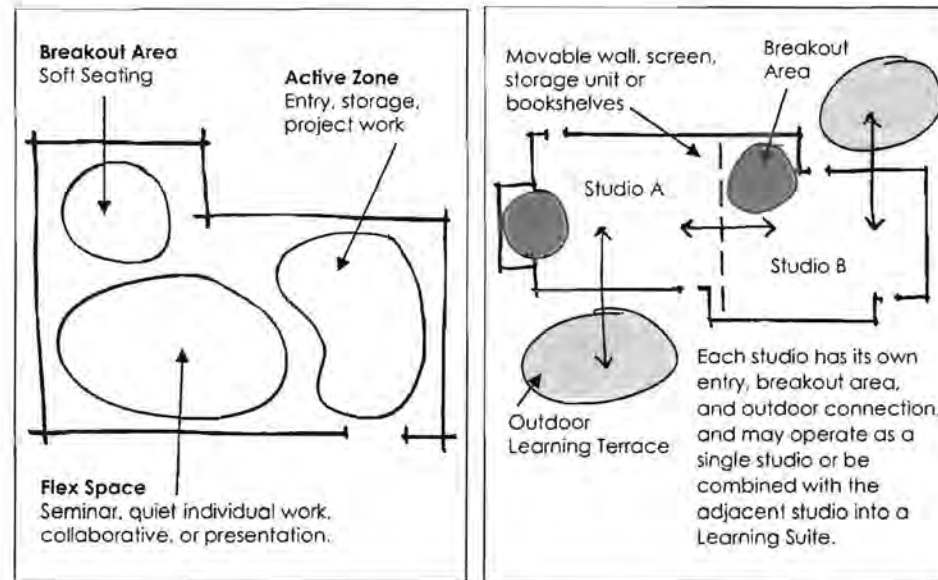
It is vital that the in-between circulation spaces need to be designed appropriately to facilitate positive interactivity and stimulate learning.

According to Walden, "attributes of place

making, such as comfort, safety, ownership and personalisation, and adaptability," are important to consider when thinking of designing the in-between spaces that will improve social interaction between the users of a school environment. (Walden, 2009, p. 7)

Walden even proposes that corridors of schools can be replaced with other kinds of spaces, which permit circulation but also serve the goals of social and emotional development. (Walden, 2009, p. 161)

**Note: "David Halpern currently works in the Institute of Government, London. He has previously worked at the Prime Minister's Strategy Unit as a policy advisor and Chief Analyst. He has written several books, including 'More than Bricks and Mortar: Mental Health and the Built Environment.'"*



The Learning Studio and The Learning Suite. Image from *Schools for the Future* p.162, R. Walden. 2009.

6. Internal Learning Spaces – The Learning Studio and the Learning Suite

This paragraph will focus primarily on classroom layout and how it contributes toward better learning environments. When trying to understand and imagine what future learning spaces need to be, one is confronted with the question of whether the rectilinear row and column classroom is obsolete. In short, my opinion is that the classroom and direct instruction from a teacher is still very valuable and will not phase out any time soon, but the design model for classrooms as it is today needs to be amended to suit current and future academic needs. The concept of a Learning Studio is appropriate.

Walden discusses this concept in *Schools for the Future*: “the term Learning Studio is sometimes used to refer to an L-shaped classroom with multiple modes of activity centres. The space lends itself to achieving many of the learning modalities as can be seen in diagram on the opposite page. The ability to combine Learning Studios into a “Learning Suite” expands the options for teaching and learning.” (Walden, 2009, p. 162)

The Learning Studio and Suite pattern can be used to address the much needed change in the design of South African public schools. This model can especially help to design spaces that are appropriate for the current educational curriculum (refer to page 10).

7. The theory of users taking ownership & appropriating space:

Architecture, in my view, is successful when it allows individuals to take ownership of the space. Walden notes that visible traces of individuals taking ownership of something or of certain spaces are generally closely linked and associated with an image of home and that vandalism is a negative form of appropriation. According to him, the more architecture is open for appropriation, the better. “This calls for flexible spaces. Especially in schools, the rooms should be designed so as to make appropriation by students and teachers possible...” (Walden, 2009, p. 102)

Furthermore, Walden notes that home as a template for school can help to minimise abrupt transition from home to the “institutionalised setting”, especially for younger children (Walden, 2009) – a school should not be seen as a prison. Public South African schools often do seem to function and look like prisons. It is therefore important that the architectural language for new learning environments be different, yet familiar, perhaps a language that is something between a school building, a community building and a residential home.

Through thoughtful design the spatial layout and architectural detailing of a learning environment can make appropriation of space by the users more achievable. As Walden mentions: “Many architectural elements such as home-like front yards and front porches, friendly entry sequences are all possible ways to reduce anxiety about school and reassure both child and parent... To further a sense of comfort, students can be assigned to a home-base with individual desks and lockable storage space...” (Walden, 2009, p. 159)

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Conclusion

The above mentioned patterns, theories and approaches can work off each other in creating a comprehensive learning environment that supports 21st century learning. These ideas have helped in the realisation of the project and will be discussed in the design approach section later on.

In an effort to make learning more meaningful and relevant for children, it is emphasised in curriculum statements and policy that instruction must become more integrated and focused on children's personal real life needs and concerns. One way to achieve this can and should be to provide an interactive and stimulating physical environment capable of supporting the needs of learners, educators and community members.

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Comparative Case Studies

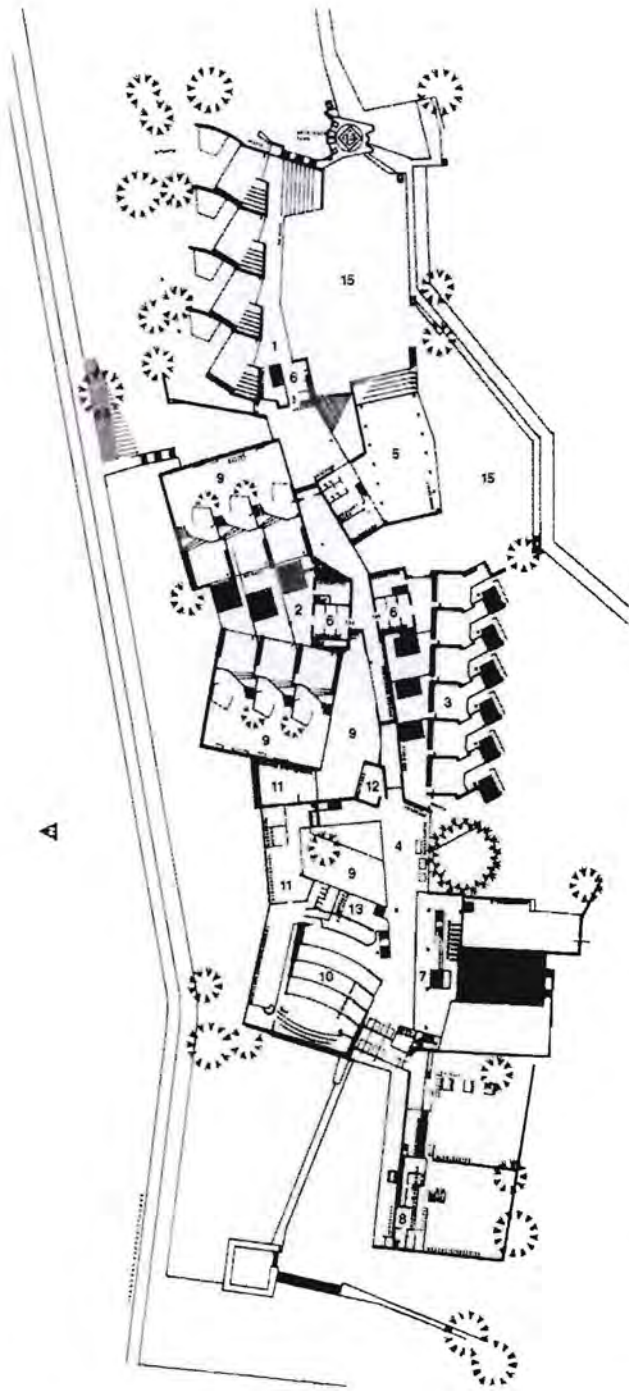
As part of the design research a comparative study was done on two schools namely, Darmstadt Primary School by Hans Scharoun and Apollo school(s) by Herman Hertzberger. These schools were compared to a typical South African public school, WEPS* to test whether architectural intelligence can help in creating better learning spaces.

The first two schools have been designed with the aim to create a learning environment that is stimulating and learner-centered with specific architectural design elements that contribute to the process of learning.

The lessons learnt from doing the comparative study was helpful in finding clues and design principles that could and did guide my own project.

The main lessons learnt from the two architects are highlighted on the following pages.

**Note: Walmer Estate Primary School (WEPS) is also the school situated on the site which I have identified as the chosen site for the thesis design project.*



- KEY:
- 1 Upper school
 - 2 Middle school
 - 3 Lower school
 - 4 'Meeting cloister'
 - 5 Gymnasium
 - 6 'Gatehouse towers' containing cloakrooms and WCs
 - 7 Staff and administration
 - 8 Porter's flat
 - 9 Courtyards
 - 10 Assembly hall
 - 11 Arts and handicrafts
 - 12 Chapel
 - 13 Library
 - 14 Observatory
 - 15 Playground

Plan from (Dudek, 2000)



- Administrative
- Hall internal forum
- Resource facilities
- Bathrooms
- Classrooms
- Circulation
- Internal social space
- External social space

Hans Scharoun's design for a primary school in Darmstadt

Lessons learned:

The lessons that were learnt from this study are that the designer of a learning environment needs to design for the specific needs of the users of the building, and at the same time need to think of the future and therefore design spaces that are adaptable and flexible (see diagrams on page 27).

The idea of the 'meeting cloister' that is part of the 'open zone' circulation space, as used in his design proposal, is very appropriate for the in-between spaces of schools. This space allows for serendipitous informal meetings to take place and subsequently informal learning is activated.

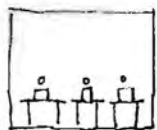
By taking the passage of the school, widening it, punctuating the space with a level change and opening it up visually with a view, Hans Scharoun managed to turn the corridor into an exciting meeting place. This shows one that circulation spaces can be much more than just a space to get from one place to the next.

Furthermore, by placing the public parts of the school together close to the entrance of the school, Scharoun made it more accessible for visitors and so school and community integration is more achievable.

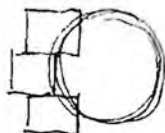
FINDING YOUR INDIVIDUALITY WITHIN A COMMUNITY:



Dedicated space in classroom



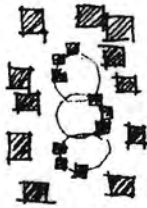
Classroom & Social group



School unit



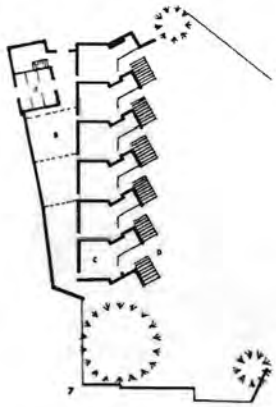
Whole school




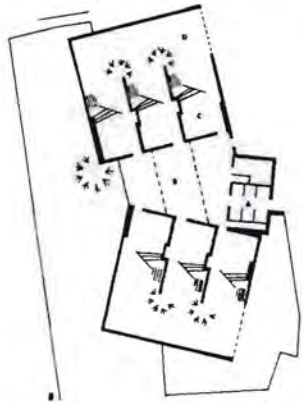
Locality/ neighbourhood




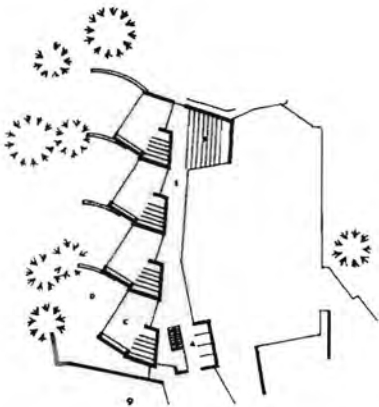
Image from P.B. Jones. 1978.

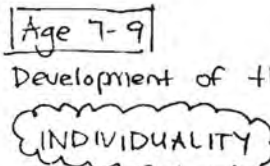


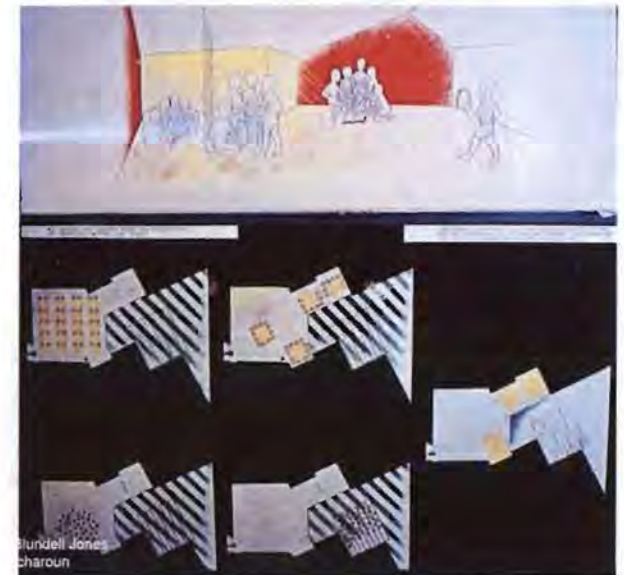
①  Physical & spiritual growth.
 Age 1-3
 Plenty of sun & light.



②  Age 4-6
 "recognising, understanding & experiencing interest
 in lessons & independant activities."



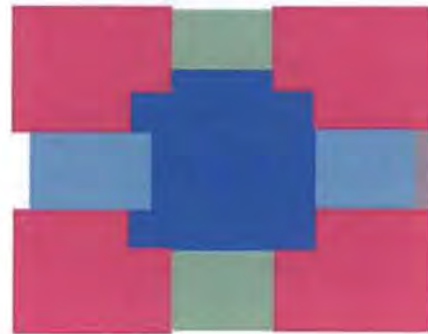
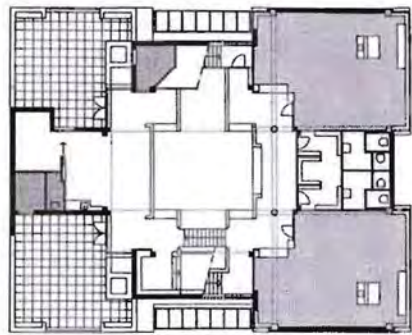
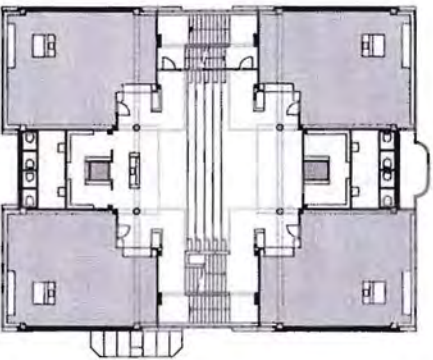
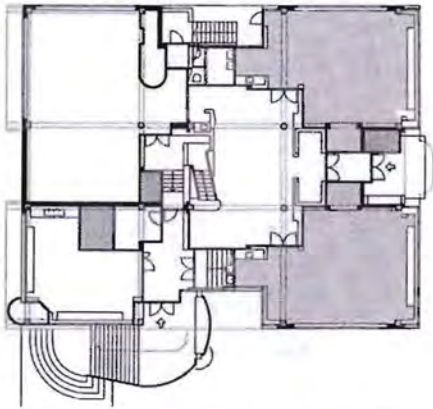
③  Age 7-9
 Development of the self within the community.
 INDIVIDUALITY



Classroom detail diagrams showing how the classroom spaces are designed differently to be more appropriate for different age groups. Plans from (P.B. Jones, 1978)

Diagrams showing flexibility of in-between spaces. From (P.B. Jones, 1978)

University of Cape Town



Plans from (Hertzberger, 2009)

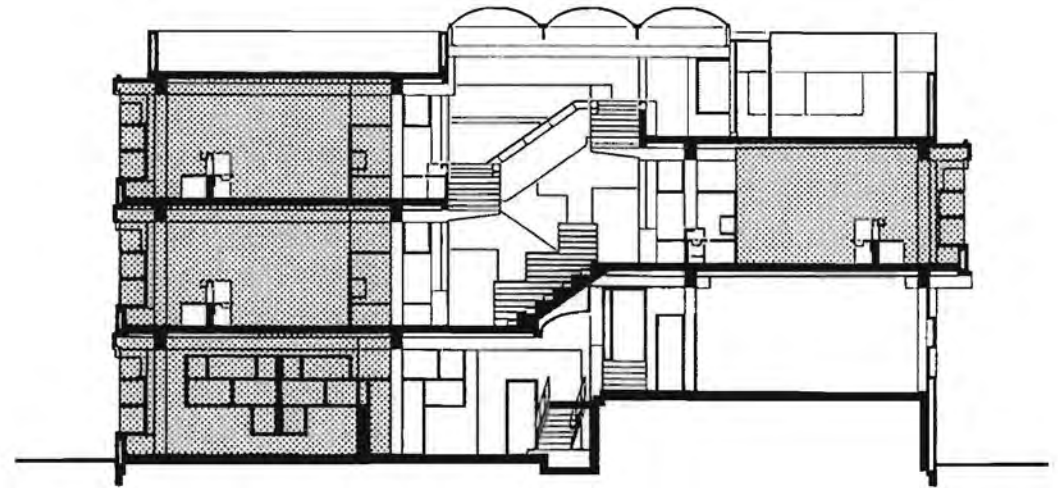
- Administrative
- Hall internal forum
- Resource facilities
- Bathrooms
- Classrooms
- Circulation
- Internal social space
- External social space

Herman Hertzberger's Apollo School(s) in Amsterdam

Lessons learned:

This school design by Hertzberger was used for two school buildings: one a state school and the other a Montessori school. The success of the design is that it was flexible and adaptable enough so that different types of learning activities could and still can take place in it. In addition, Hertzberger shows how the architect can activate internal and external edges, as well as the in-between spaces, by means of staircases, ledges, wider sills, enclosed wide walls, lighting, and appropriate use of materiality.

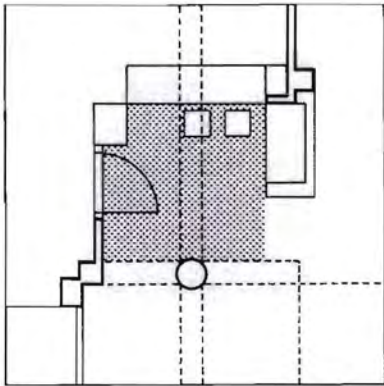
Furthermore, by clustering classrooms around a central communal space, Hertzberger improves social interaction between users. Informal learning can easily take place in the middle space. With the different levels around this space, he creates interesting visual links and so allow for a constant awareness of others within the space, making the individual feel part of the school community and also allowing him/her to choose with whom and when he/she wants to interact with others.



Section from (Hertzberger, 2009)



The 2 Apollo primary schools in context, Amsterdam. 1983.



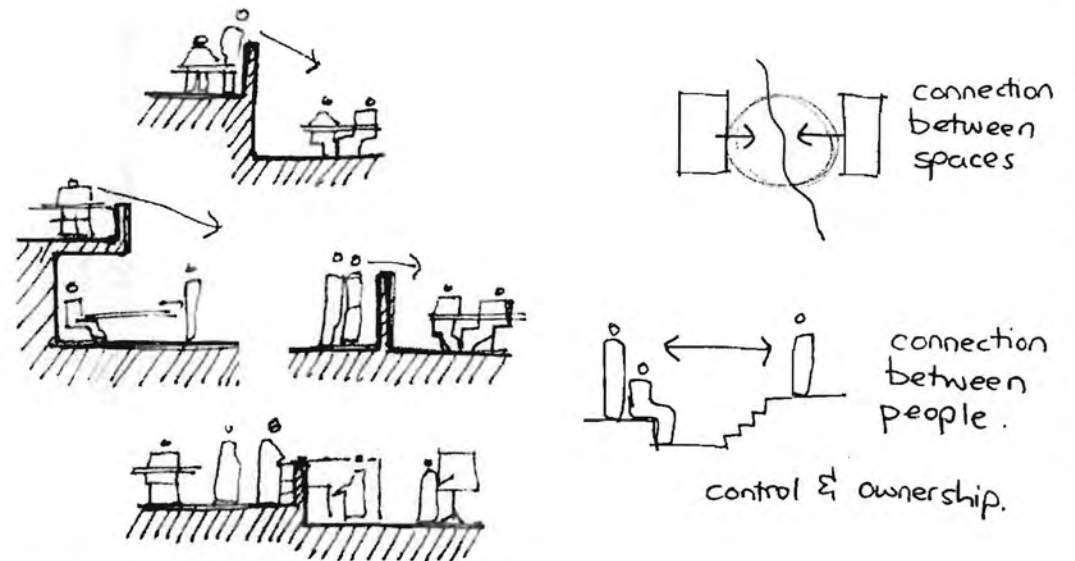
The porch-like areas in front of the classrooms enable children to appropriate the space for themselves. The use of a work-surface, own lighting, bench, and an enclosed low wall are design features that make this possible.

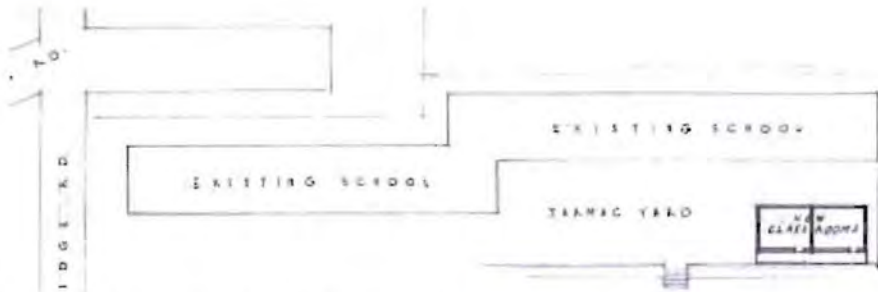
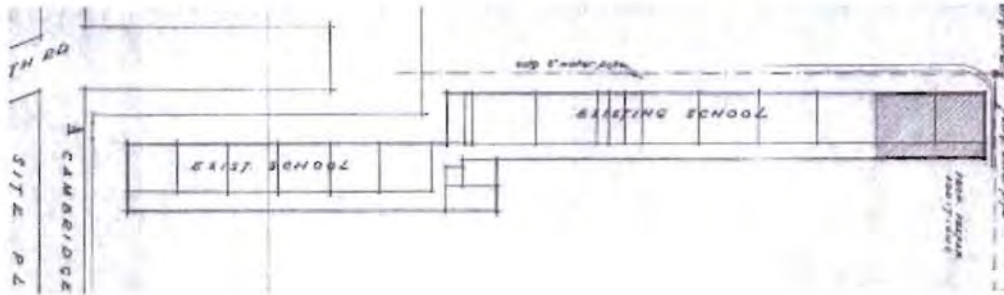
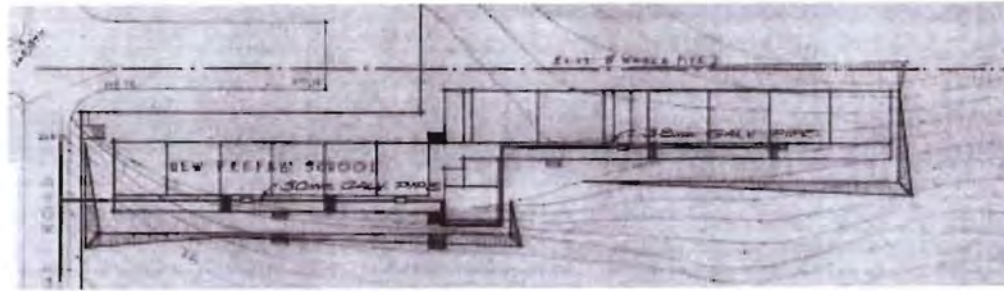


Image from (Hertzberger, 2009)

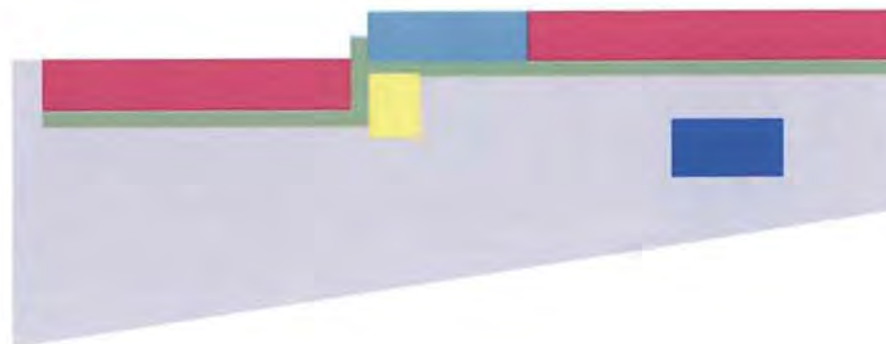


Image from (Hertzberger, 2009)





Plans from Department of Public Works, Cape Town.



- Administrative
- Hall internal forum
- Resource facilities
- Bathrooms
- Classrooms
- Circulation
- Internal social space
- External social space

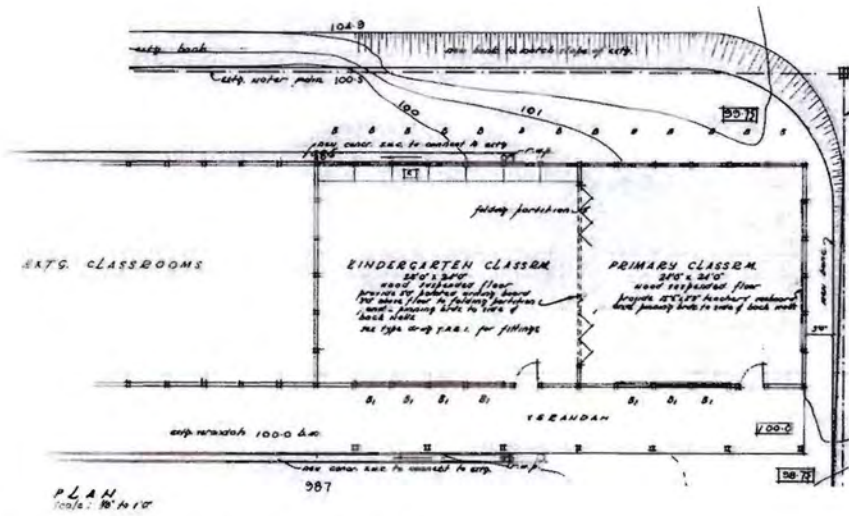
THE CASE OF WEPS: TYPICAL SOUTH AFRICAN PUBLIC SCHOOL

Walmer Estate Primary School was chosen as a case study as it is a typical example of an Apartheid school as well as an example of how many public schools are designed and planned today – typically according to the production line mentality as mentioned before.

The result is that the current building does not address the needs of the present users (teachers and learners) and the community members. Furthermore, it is not a space suited for new curriculum requirements.

**Note: See appendix for more information on the school.*





The classroom layout

Plan from Department of Public Works, Cape Town.

The main entrance of Walmer Estate Primary



Windows of the hall



The corridor



Comparative analysis - WEPS compared to Scharoun and Hertzberger's design

Lessons learned:

When comparing WEPS to the previous school designs one can identify a number of design problems and see the affect it has on the process of learning. The conventional rectangular classroom shapes of WEPS limit what can occur within the layout, since they do not have defined areas where different activities might occur simultaneously without any disruptions. The "L" shaped classroom in Hertzberger's school and the non-traditional, age-appropriate classroom shape of Scharoun's school, on the other hand, allows for different grouping activities and encourages social interaction.

The current hall of WEPS, which is basically the only public part of the school, is disconnected and separate from the front main entrance, bathrooms and administration part of the school and therefore sharing this space with the rest of the community is difficult. The two schools designed by the well-known architects have a legible architectural language and it is clear to see where the public parts are. This is not the case in WEPS.

In addition, Scharoun and Hertzberger both made use of bigger communal spaces and integrated it with the rest of the spaces of the school. In WEPS there is no comfortable covered social space for learners when external weather conditions make outside social spaces less ideal. The only space is the circulation 'stoep' on the West side of the building. This circulation area provides some excitement in the change of floor levels due to the typography of the site, but its linear shape limits social interaction and the formation of groups under the roof (see image on page 38).

Furthermore, there are no self-study learning spaces, the classrooms are the same for all ages and visual links between inside and outside are very limited due to the severe burglar bars in front of the windows. In Hertzberger and Scharoun's designs, more appropriate spaces have been conceptualized that can help with the process of learning and make the school environment a fun learning place, unlike WEPS.

Street view of WEPS





SITE IN CONTEXT



Site Studies & Site Selection

Physical context: Cape Town

The specific chosen site is located within Cape Town, within the old District Six area, next to the Walmer Estate neighbourhood, on the Zonnebloem Estate.

Brief overview of old District Six:

District Six is the well-known part of Cape Town where Apartheid and its related forced removals since 1966, when it was declared a White Group Area, led to the vast open scarred landscape within the urban environment. Historically District Six was a rich physical environment where vibrant community life flourished.

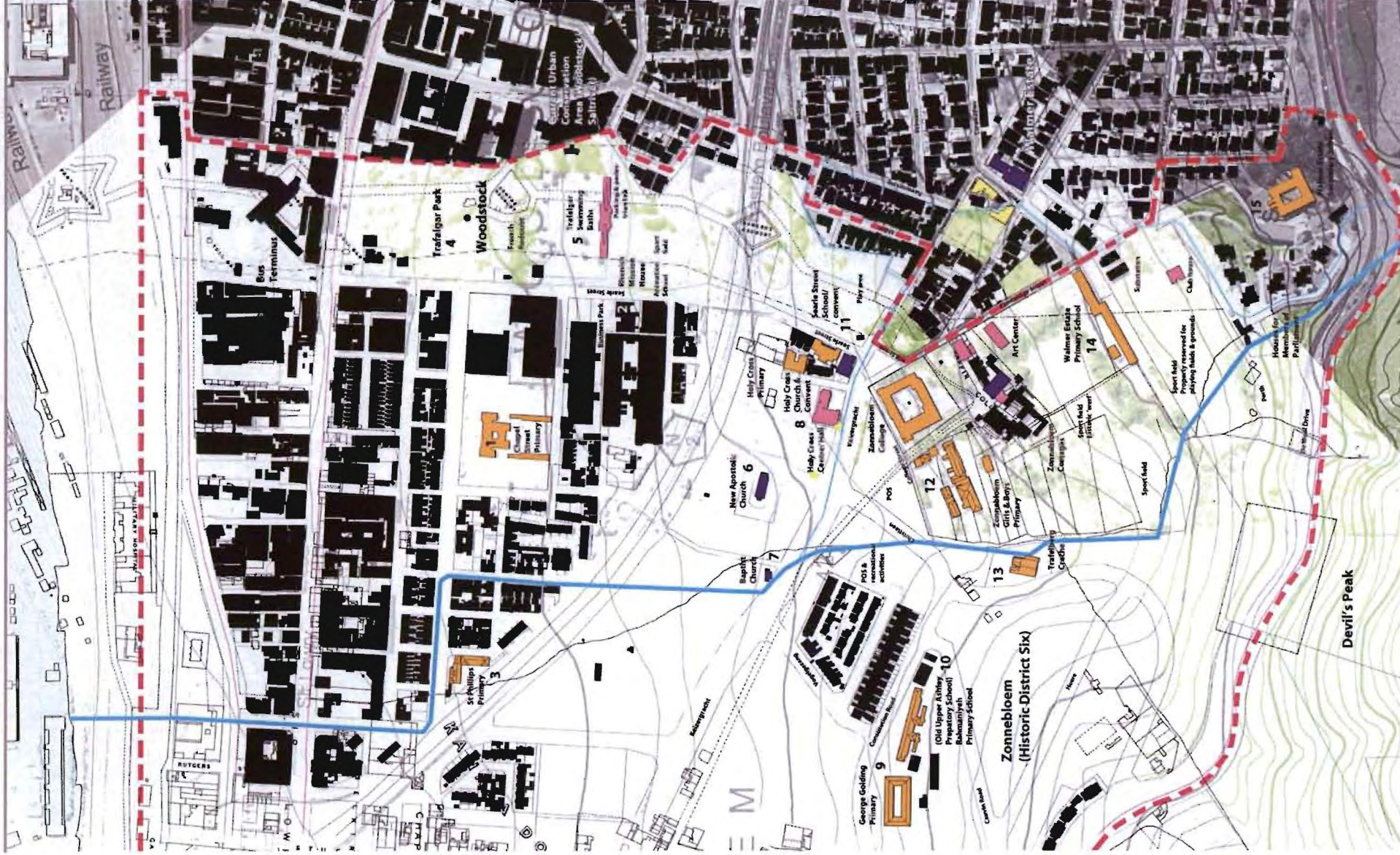
As mentioned in Lucien's Heritage Impact Assessment: "...a number of institutional buildings escaped the destruction of the bulldozers, and today remain a reminder of the religious and institutional culture of District Six." (Le Grange, 2003)

Many of the schools in the area have remained in continuous use, despite the fact that the community they originally served now resides in various townships on the Cape Flats. Under trying circumstances a tradition and culture of learning has been sustained at these institutions over the years. (Le Grange, 2003)

This specific area is and was therefore an ideal location to explore ideas and concepts related to the topic of architecture of learning and community integration.

The heritage, tradition and energy that the existing community facilities embody can be harnessed through its continuous use and by creating new connections and linkages with the past, present and future community.

MAPPING: Learning Environment - Trafalgar Green Link



Historically Significant buildings

1. Chapel Street Primary
Grade 1
Historical and Educational Significance
2. James red faceted with plastered gable opening symmetrical facade with entrance porch. Small porch with decorative ironwork made with intricate and shaped gables, and turret.
3. Renish Mission House
Grade 2
Single story Victorian house. Plastered brick walls with double-pitch roof in gable plan. Main aspect faces off street. Two porches & chimneys.
4. St Phillips Primary
Grade 1
Historical, Religious and Educational Significance
5. Single story with double pitched stone-ventil roof and round end gables. Main facade central, projecting more gables. Facade is highly decorative with decorative ironwork. Windows with narrow vertical and narrow vertical stained windows.
6. Trafalgar Park
Incorporator
Grade 2
Red faceted, addressed walls with upper window-stair. Curved completed as tennis court.
7. Trafalgar Swimming Baths
Grade 2
Single storey, three wall building with three main floor and a small composition of facade and masonry.
8. New Apostolic Church
Grade 2
Baptist Church
9. Holy Cross Primary
Grade 2
Historical, Religious and Educational Significance
10. 2 storey, U shaped, plain, symmetrical facade with tall ennobled masonry entrance. Small porch with windows, topped with plastered walls.
11. George Golding Primary
Grade 2
2 storey, single storey base and concrete with plastered walls. Ennobled central courtyard arrangements with double pitch roof. Vertically proportioned with windows.
12. Upper Ashley Preparatory School (Mamaboth Primary School)
Grade 2
Historical and Educational Significance
13. 2 storey, Red faceted, linear symmetrical facade with two arched entrances. Vertical small porch with windows. Tipped roof.
14. Seale Street School/Convent
Grade 2
Historical, Religious and Educational Significance
15. Single storey, symmetrical, 1 bay facade with a small porch. Small porch with windows. Tipped roof. Small porch with windows. Plastered walls.
16. Zonnebloem Collings field tennis court
Grade 1
Historical, Religious and Educational Significance
17. Through heavily "vegetated" it remains a single storey, symmetrical, 1 bay facade with a small porch. Small porch with windows. Tipped roof. Small porch with windows. Plastered walls.
18. Walmer Estate Primary School
Grade 2
2 storey, double pitch main roof with two symmetrical projecting pitched roof volumes. Plastered brick walls. Steel windows.
19. Single storey professional building. Brick structure, retaining structures and wall.
20. Single storey professional building. Brick structure, retaining structures and wall.

Trafalgar Green Education Link

The community buildings and their associated playgrounds and forecourts, specifically on the Zonnebloem Estate, can become points of development and growth within the redevelopment plan of District Six. These sites should be integrated into a local system of public space. These community buildings, specifically referring to the schools, with their associated green open spaces can further allow for a green network of improved social spaces to be designed where interaction and informal learning can take place. This network, together with Trafalgar Park, can form a green education link from mountain to sea, as is proposed in Lucien's development plan*.

The future plan for District Six is that it will be densely populated, predominantly by housing, which places emphasis on the need for green open space and shared facilities; therefore the open space planning of the area is crucial.

**2010 District Six Development Framework
by Lucien le Grange Architects & Urban Planners*

University of Cape Town

University of Cape Town

Recent history: Neglect and Apartheid

In South Africa, during the Apartheid years, government used the threat of closure and pressured churches to hand over the schools they had established and to teach a racially differentiated curriculum. There was resistance to these measures from the community and churches, but in many cases the government was successful as was the case with the schools on Zonnebloem Estate. (Karlson, p.343)

Instead of Zonnebloem Estate being a place for learning and discovery, it became a place more associated with a repressive authority. The effect of this can be seen in the neglect of existing buildings, little maintenance, additions over the years that do not enhance the special historical character of the place, schools not functioning optimally, vandalism, disconnectedness and vagrants living on the site, etc.

Plans for the future: identifying the need and important design principles

A physical built environment and landscape that will re-establish a positive culture of learning is much needed.

A new and improved learning environment that displays a cohesive identity of the imagined District Six community and of the existing Walmer Estate community is needed. A way of achieving this can and will be to make use of historic buildings, structures, linkages and natural resources to rebuild District Six and integrate the area with Walmer Estate community.

Finding connections within a dislocated community context – heritage study of Zonnebloem Estate:

The site is situated within District Six which is a declared National Heritage site (Grade 1 heritage significance). It is also situated within the Chester/Coronation Street Woodstock Heritage area. Following the assessment requirements of SAHRA and The National Resources Act 1999, the following studies were done to determine the heritage value of the existing buildings, structures and natural resources

1. Land use
2. Aerial photographs and figure ground
3. Threshold conditions
4. Natural Resources
5. Pathways and roads
6. Structures



Land use.

1739 - 1762

The first homestead was built in 1740 during the ownership of Captain Rudolph Siegfried Alleman, head of the Cape Garrison. In 1774 this son exchanged it with Jan Henrik Munnik.

1780's

The Zonnebloem College Complex fell just inside the Municipal boundaries of the old Cape Town Municipality. It formed the terminal point of the Old French Defense Lines, or Lines of Munnik, which refers to the previous owner of Zonnebloem farm, Captain J.H. Munnik.

1800 - 1831

The farm grew to 200 morgen during the ownership of Alexander Tennant, a Scots settler. Alterations made to the house and the outbuildings. (Georgianization of the house... Buildings stripped of its original baroque gables)

1860

The first African school in the Cape Peninsula was established at Bishop's Court under Anglican auspices in March 1858. Two years later the so-called "Kaffir College" moved to the farm Zonnebloem.

Mission school history: The school was a key component in Sir George Grey's policy of promoting civilisation and Christianity on the eastern frontier.

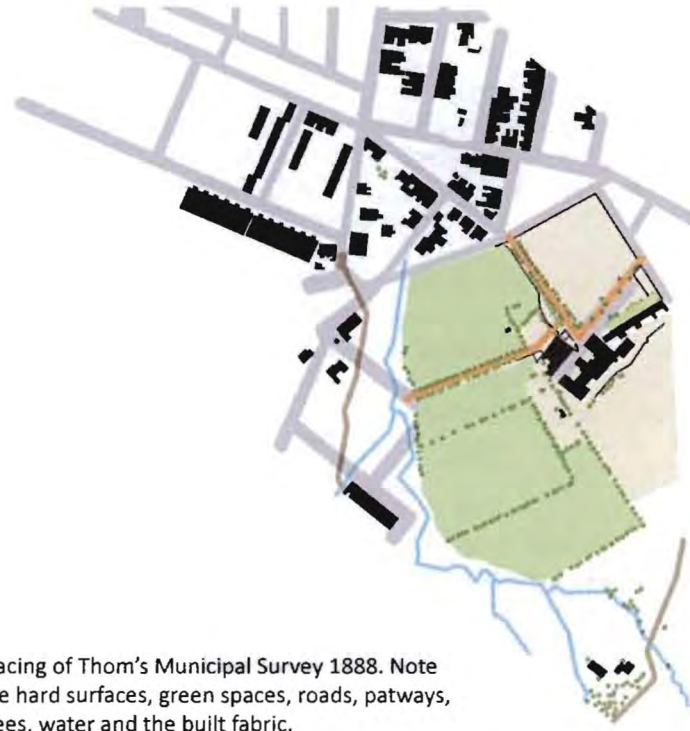
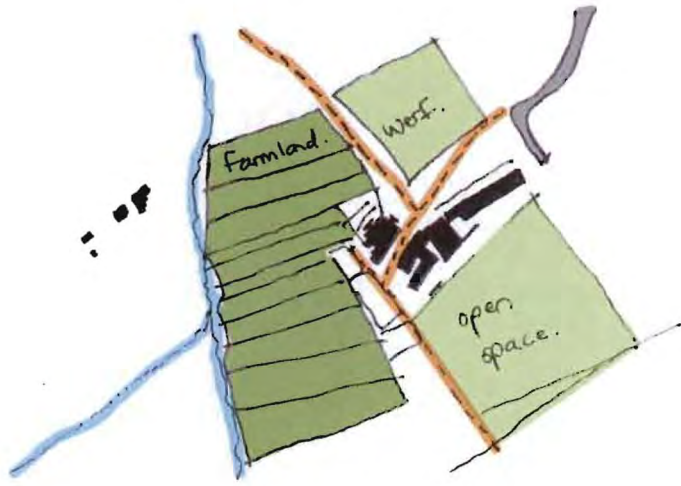
Mr Robert and Mrs Sophie Gray purchased Zonnebloem, a wine farm situated on the windy slopes of Devil's Peak, with funds raised in England and with the help of a British Parliament Grant.

The property was set aside for the education of the children of African chiefs and of pupils of all races of South Africa. The property's function was therefore altered from being a wine farm to a property with education as the main function. Major alterations happened in this time.

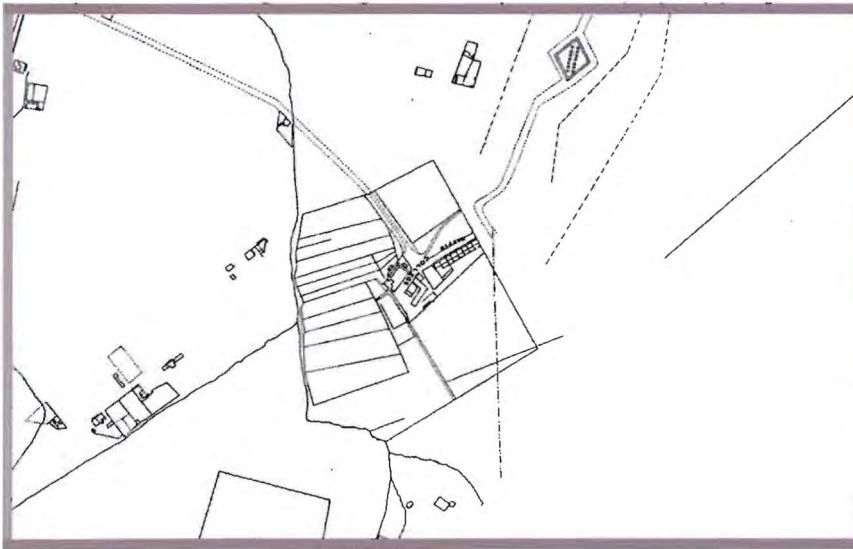
1862

Hanover Street became one of the dominant ordering streets in Kanaladorp (leading towards Zonnebloem Estate.)





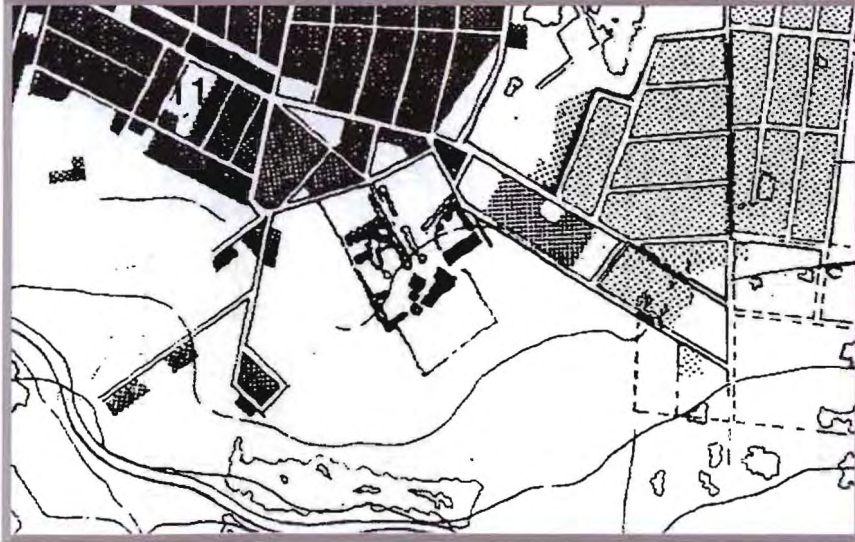
Tracing of Thom's Municipal Survey 1888. Note the hard surfaces, green spaces, roads, patways, trees, water and the built fabric.



The double approach (now lined by trees) is evident, as are the buildings adjacent to the homestead.
 Snow's Municipal survey: 1862. Cape Town City Council Map Collection. (From Texture and Memory, Ed. Pistorius, 2002)
1862



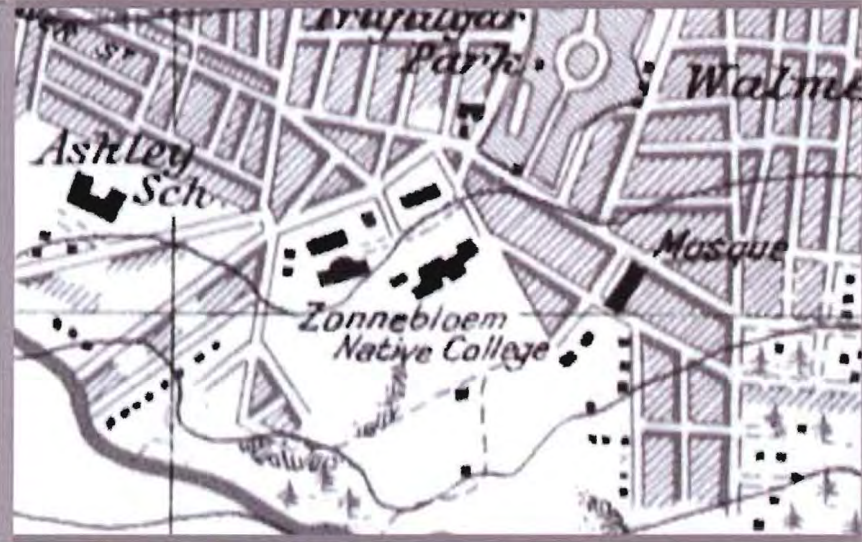
Development along Hanover Str. More streets/pathways around the estate. French battery lines still forms a boundary towards the east side of the area. Map redrawn from A Wilson, c.1878. Cape Town City Council Map Collection. (From Texture and Memory, Ed. Pistorius, 2002)
1878



Development of the Zonnebloem Estate is clearly visible. The Tafelberg Creche, which was a church at this time, has been built.

Map drawn from 1926 aerial photographs. Dept. Land Surveys and Mapping. (From Texture and Memory, Ed. Pistorius, 2002)

1926



A Mosque have been built in close proximity. The green trees indicate that there were Pine Trees on site, the brown indicates 'Krantzes' and the red dotted line indicates sparsely built up areas.

Map of the area in 1934 from Dept. Land Surveys and Mapping.

1934

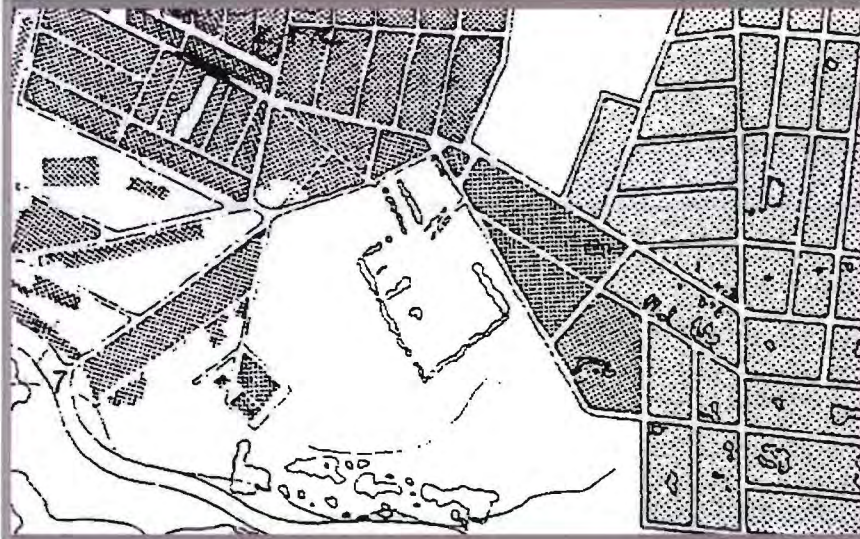
Figure ground.

Linkages between Zonnebloem Estate and the surrounding spaces/areas were much better in the past. With time connections were blocked off/weakened. I.e. De Waal Drive on the south side created a boundary towards the mountain.

More defined open spaces are visible. These spaces are generally enclosed by trees.

Streets on the District Six side encroached on the estate.

Agricultural land also very much visible.



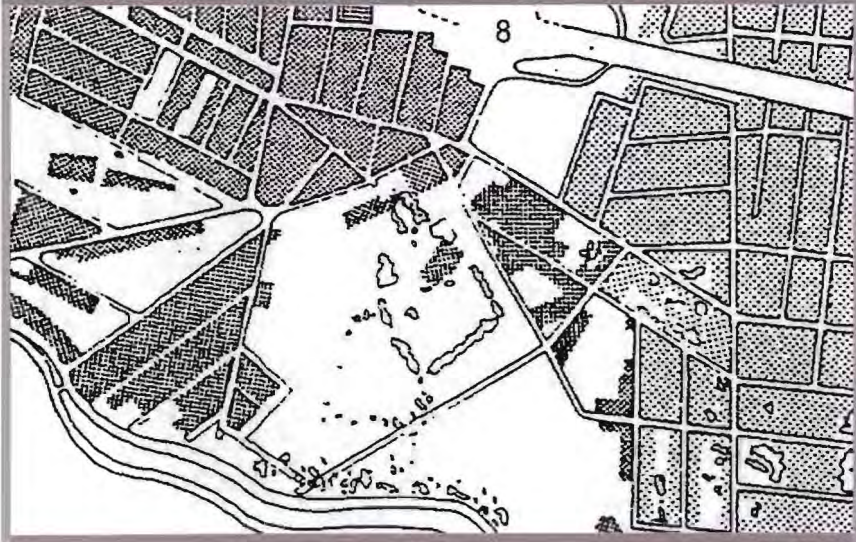
More development has taken place on the west side of the area.
Map drawn from 1944 aerial photograph. Dept. Land Surveys & Mapping, Cape Town City Council Map Collection. (From Texture and Memory, Ed. Pistorius, 2002)

1944

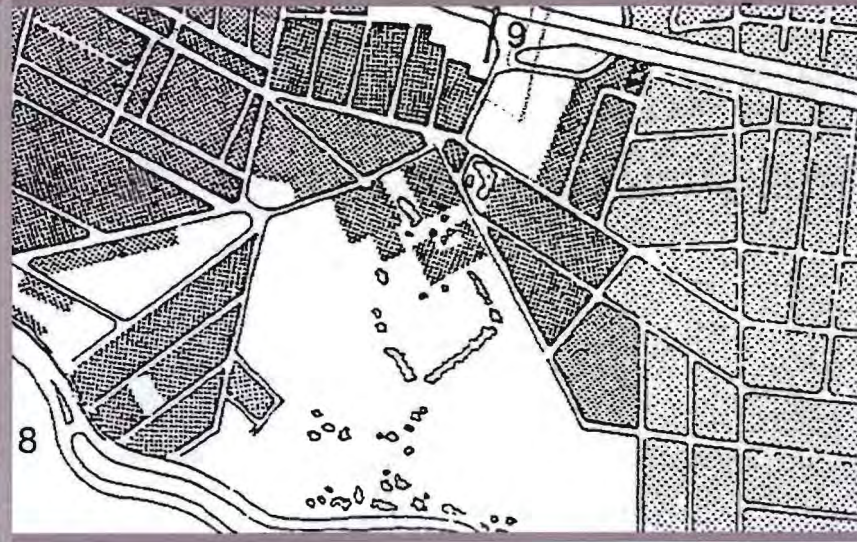


More buildings on the Zonnebloem Estate are visible (note Walmer Estate Primary). The green indicates orchards and vineyards and the 'werf' enclosed by trees is also visible. De Waal Drive is indicated as a high way. 1961 map form Dept. Land Surveys & Mapping.

1961



1968
 The Eastern Boulevard has been built and destroyed a part of the D6 urban fabric. This was the result of Modern urban planning ideas. Map drawn from 1968 aerial photographs. Dept. Land Surveys and Mapping. (From Texture and Memory, Ed. Pistorius, 2002)



1976
 The defined green spaces have diminished over the years. The urban fabric has already been changed because of forced removals. Map drawn from 1976 aerial photographs. Dept. Land Surveys and Mapping. (From Texture and Memory, Ed. Pistorius, 2002)

Land use.

1934

De Waal Drive was built and defined the upper topographic limits of the area/site.

The 1934 map indicates that the name of the education facilities changed to the Zonnebloem Native College.

1944

District Six was fully developed. The grid of streets were structured by the predominant roads: Hanover Street, Constitution Street and (Sir Lowry Rd).

Trafalgar Park on the more northern area has developed along the old French Lines, creating a green edge on the eastern city boundary with Zonnebloem Estate at the top of the link. (Green link from mountain to sea)

De Waal Drive has been consolidated and tarred, creating a boundary to the south.

1957

Walmer Estate Primary School (initially named the Zonnebloem Coloured Preparatory School) was built on an area leased to Provincial Administration by the Anglican Church.

1966

Group Areas Consolidation Act No.36 of 1966: Proclamation No.43, whereby District Six was declared as an area "for the occupation and ownership by members of the white group". At this time there were 4 community centres and 17 schools and colleges.

1980's

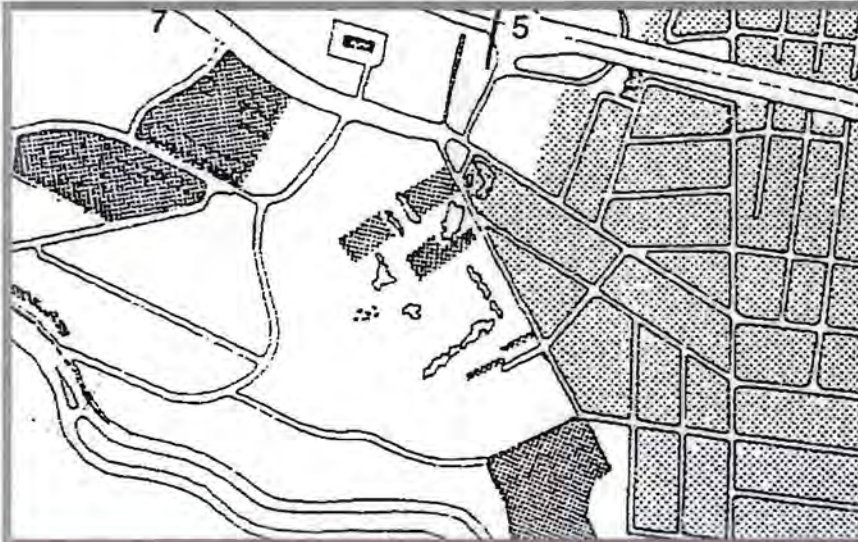
Despite community protests, the "coloured" arm of the new tricameral parliament, built a Ministerial housing estate above Zonnebloem Estate. The Cape Technicon has also been built.

1985

Proposed alterations for community facilities on the Zonnebloem Estate Cottages.

1991

Group Areas Act abolished.



Most of old D6 fabric have been destroyed. The Ministerial housing estate have been built. Map drawn from aerial photographs. Dept. Land Surveys & Mapping, Cape Town City Council Map Collection. (From Texture and Memory, Ed. Pistorius, 2002)

1992



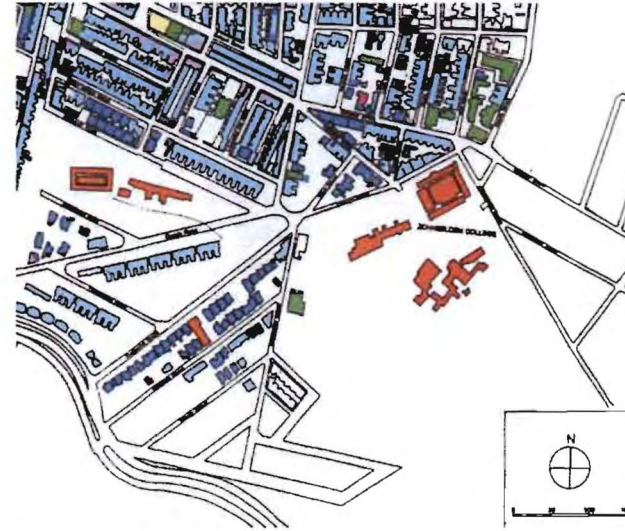
The cadastral lines, part of the City of Cape Town's planning/cad drawing, still indicate the lines of the historic French battery wall. Disconnected spaces are visible. Significance of water and greenery and old urban fabric have been lost. (Lezanne Botha, 2012)

2012

DISTRICT SIX

- PLACES OF WORSHIP AND ASSEMBLY
- SCHOOLS AND OTHER EDUCATIONAL ESTABLISHMENTS
- CINEMAS
- HOSPITALS AND OTHER MUNICIPAL BUILDINGS
- INDUSTRIAL BUILDINGS AND ELECTRICAL SUBSTATIONS
- SHOPS
- COMMERCIAL: OFFICES, BANKS, WHOLESALERS, ETC
- HOTELS AND BARS
- FLATS AND TERRACED HOUSING
- SEMI-DETACHED AND DETACHED HOUSES
- OTHER
- NOT SURVEYED

Source: Cape Town City Council survey, c. 1964.
Drawn: S. Harris



Land-use of District Six in 1964. Image from *Texture and Memory*, Ed. Pistorius, 2002.



Other community buildings are visible: The Mosque, Tafelberg Creche which was originally a church. It can be seen that De Waal Drive has been tarred. Aerial photograph of the area in 1944 from Dept. Land Surveys and Mapping.

1944

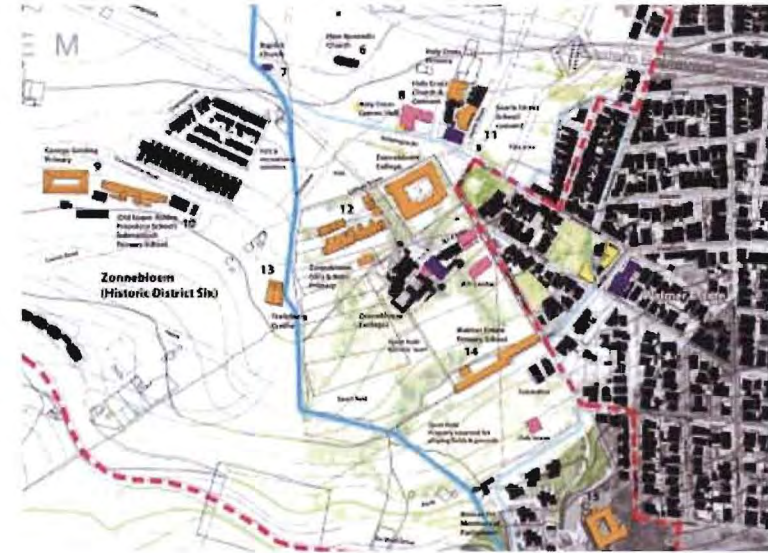


This was the year just after Walmer Estate Primary was built. The rich dense urban fabric of the old District Six is still visible. Aerial photograph of the area in 1958 from Dept. Land Surveys and Mapping.

1958

Figure ground.

Old District Six fabric is mostly lost. Modern urban planning schemes and new vehicular routes have changed the area immensely. 4 distinctive open spaces are visible on the Zonnebloem Estate. Linkages between the areas around the estate and the Zonnebloem schools are weak and can be improved.



There is a great difference between Walmer Estate and Zonnebloem urban fabric. There is potential to integrate these 2 areas and to improve existing conditions for the benefit of both communities. Orthographic map of 2001 from Dept. Land Surveys and Mapping.

2001



Disconnected community facilities are visible. Agricultural land have changed to sport/recreational open space. Defined green spaces have diminished. Aerial photograph of the area in 2010 from Dept. Land Surveys and Mapping.

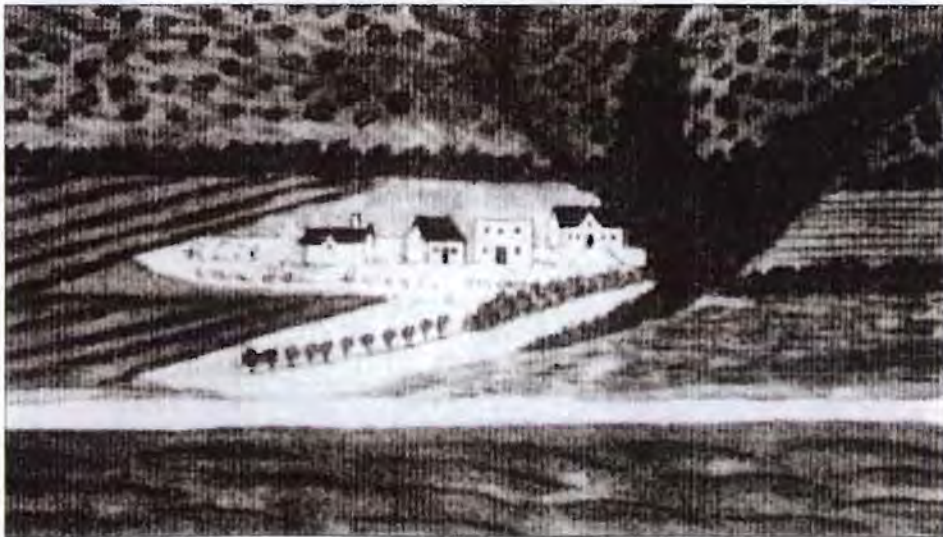
2010



Washerwomen and children, 1919.
Source: District Six - The Spirit of Kanala. Chris Schoeman, 1994.



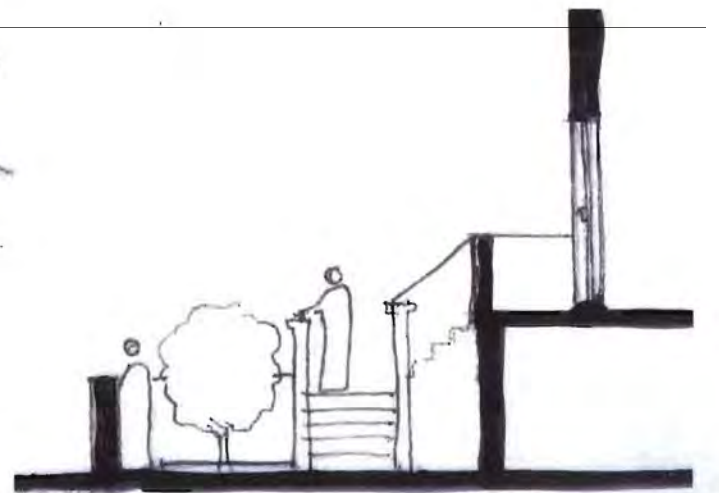
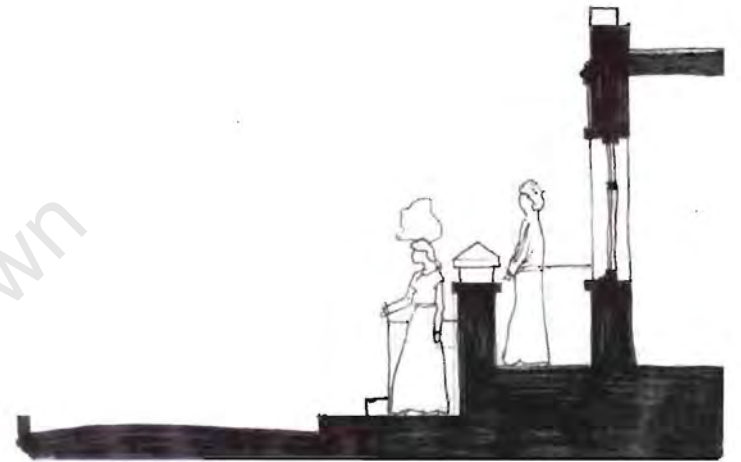
Photograph of children in Ashley Street, 1980. "And they are still alive, the people of District Six, the children too, especially the children." (District Six: The Spirit of Kanala, C. Schoeman, 1994)



The Zonnebloem homestead. Detail from panorama by Col Gordon, 1787. (CA M1-1124)



Washing day at Zonnebloem homestead, c.1847, by George French Angus. At this time the farm was prosperous, stocked with sheep and cattle and producing wheat and wine. (William Fehr Collection, Iziko Museum of Cape Town)



MAPPING: Natural Resources 1862 & 1888

Mapping scale 1:2000 @ A3




MAPPING: Natural Resources 1934 & 1944

Mapping scale 1:2000 @ A3



MAPPING: Natural Resources 1958 & 1960

Mapping scale 1:2000 



MAPPING: Natural Resources 2010

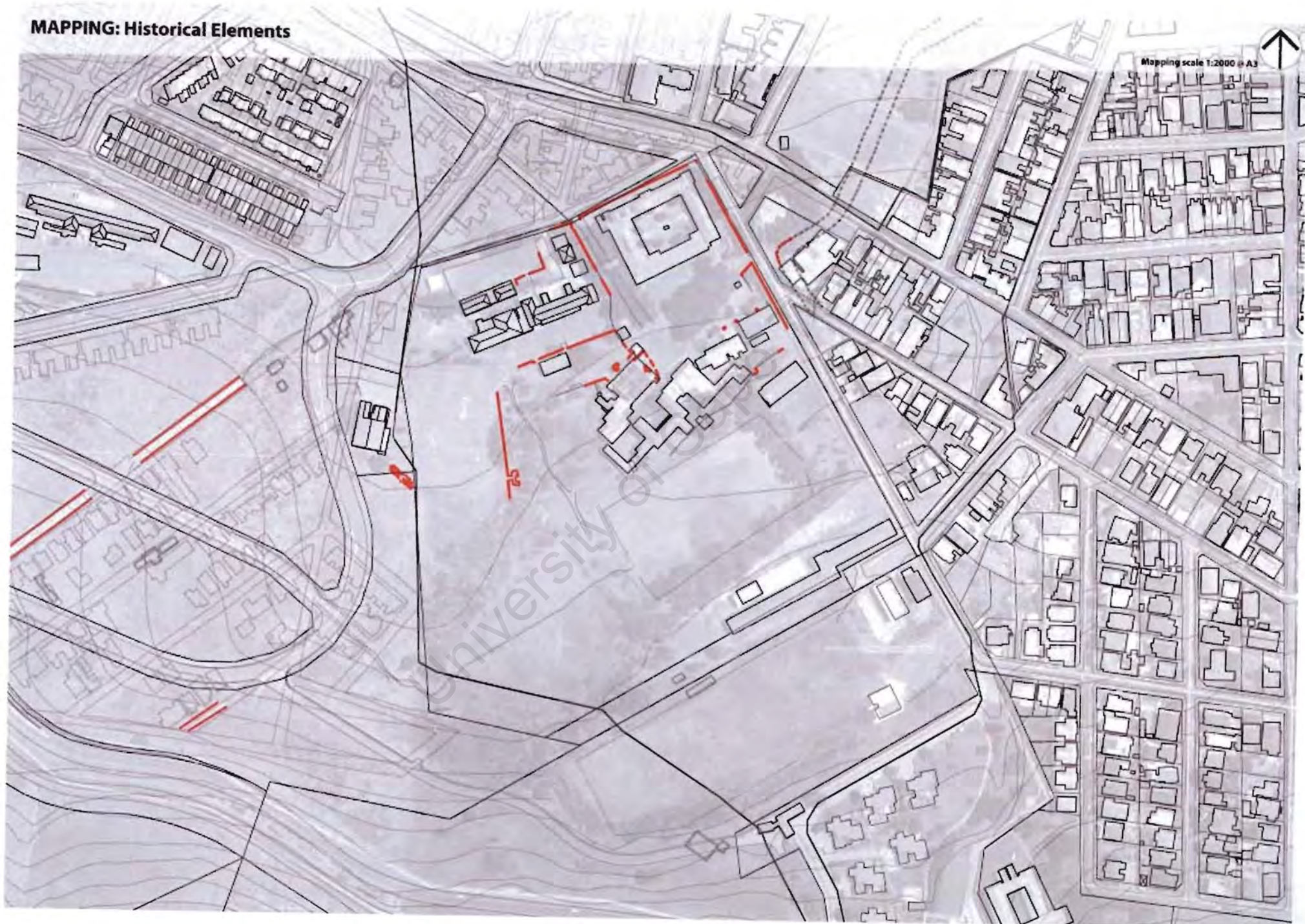


MAPPING: Roads & Pathways Overlayed Layers

Mapping scale 1:2000 @ A3



MAPPING: Historical Elements



Zonnebloem College celebrates 150 years

JOHN RAMSDALE

On the 11th March 1858, a school opened its doors for the first time in the out houses of the farm Protea, the home of the first Anglican bishop of Cape Town, Robert Gray. Situated on the lower slopes of Table Mountain, just above Claremont (now called Bishops Court).

The school was a joint venture between Bishop Robert Gray and Sir George Grey (Governor of the Cape Colony) and was intended primarily but not exclusively to be a place where the children (Princes and Princesses) of the Chiefs mostly from the border region of the Eastern Cape Colony could come and be educated and Christianised. The school opened with 39 pupils, 36 boys and 3 girls but by the end of 1859, the numbers had grown so tremendously that the Bishop was forced to seek new and larger premises for his school. About this time the farm, Zonnebloem (the place of the sunflowers) situated on the slopes of Devil's Peak just above the City of Cape Town came onto the market and the Bishop and the Governor pooled their resources and purchased the farm as the new home for the school.

The school moved there in 1860. It took the name of the farm, adopted as its emblem the sunflower and created the Latin motto, Et Fili Lucis Ambulate (Walk as the children of the light).

Within 20 years, the black pupils from the Eastern Cape and surrounds ceased to enroll at Zonnebloem as educational institutions were being built in the rural areas. The school now began to reflect the demographics of the area which surrounded it which was completely multi racial, cosmopolitan and upmarket.

As the area began to change and buildings became neglected and run down, all the grander and wealthier folk (mostly white) chose to move to the Southern Suburbs or around the mountain to the new areas of the Gardens, Fresnaye and Oranjezicht. Once again, the school began to reflect the community around it (those who remained mainly coloured and the poor).

The next phase was that of a teacher training college and it was from this institution that teachers went not only to places of learning in South Africa but to



the whole sub continent of Africa. (i.e. the Rhodesias, Nyasaland, Bechuanaland, Basutoland, Swaziland and South West Africa).

With the advent of the nationalist government and apartheid, the school came under the Department of Coloured Affairs and now consisted of a teacher training college for women, a secondary school (std 6 - 8), a boys primary school and a girls primary school. In 1971, the Children's Art Centre which was situated at St Philip's Chapel Street was threatened with closure by the education department because it stood in Victoria Walk Woodstock (a white group area) was offered a reprieve by the Zonnebloem authorities by providing it with accommodation on the Zonnebloem Estate where continues to this day to produce quite magnificent work.

At present the school consists

of a high school (Zonnebloem NEST), the two primary schools (Boys and Girls) and a Children's Art Centre which provides art classes for all the primary schools in the area.

This then is the story of Zonnebloem in a nutshell but there is so much more to this amazing history and I trust that one day it will be told.

On Tuesday 11th March 2008, this institution will be celebrating 150 years. A service of thanksgiving will take place at St George's Cathedral, Wake Street, Cape Town at 10h00. It is hoped that all past pupils, students and members of staff, and all who have had any association with Zonnebloem in the past will join the principal, staff members and present student body in this service of Thanksgiving.

For more information contact John Ramsdale on 021 465 1557.



First pupils at Zonnebloem

Zonnebloem Estate in the larger Cape Town context



Walmer Estate Primary School



Current street edge condition

Design Approach - Building a community through the architecture of learning

As mentioned previously, Zonnebloem Estate offers many advantages such as the extensive views overlooking the city, the harbour, signal hill; the steep slope, North-West orientation, landmark trees, including the benefits of being within the city center and possessing a rich historical context, described in the section above. These aspects were considered through-out the design process and will be highlighted where appropriate.

To define the programme of the new learning environment for the site it was necessary to get hold of the current accommodation schedule of public primary schools and to talk to the right people to identify what the current needs are. The post occupancy evaluation, questionnaires filled in by WEPS staff, learners and School Governing Body members, interview with the current principal of WEPS, and with a current and ex-caretaker of the Zonnebloem Estate, helped to inform what the primary needs are.

Art Centre



Current classrooms used for dance classes



Current art classrooms



Programme – identifying the need

From the previous research and studies it was evident that WEPS needs to be re-designed to allow for better learning conditions. Because it is a public school, the new learning environment needs to have all the functional spaces as stipulated in the WCED accommodation schedule. Refer to appendix to see what these requirements are.

The aim of the new layout of the school is to translate these abstract specifications of WCED into workable solutions and to add functional spaces that would allow for better learning conditions. Part of the process was to loosen the educational constraints and specifications to have a more flexible appropriate environment.

Information of WEPS currently (2012):

Total amount of classrooms = 12

- 1 for computers
- 1 which is the hall
- 9 normal classrooms

Total amount of learners = 317

Average amount of learners per class = 31.7

New design of WEPS:

Total amount of classrooms = 18

Average amount of learners per class = 25

Amount of learners = 450*

**Note: there is space for more learners but with a smaller teacher to learner ratio, more personal attention can be given to the children.*

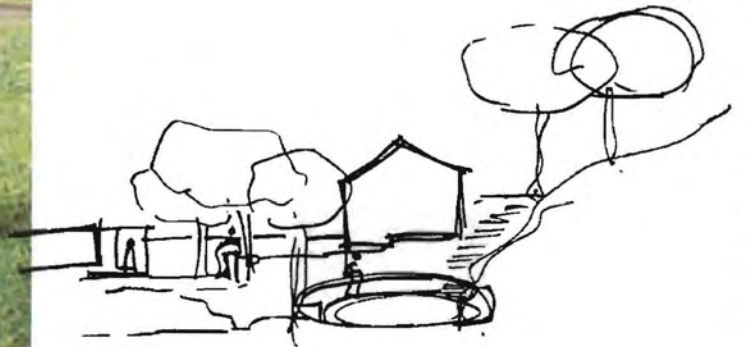
Additional spaces that are added to the WCED accommodation schedule are:

- 2 housing units for staff (on top of the administration centre)
- Library which is mainly for children between the ages of 5-13, with a small magazine and computer section for adults
- An informal computer lab next to the formal computer teaching lab
- The feeding kitchen (refer to accommodation schedule) is made bigger and turned into a cafeteria space adjacent to the forum
- A lecture theatre space and a forum is provided that will be shared with the community (additional income can be generated from these spaces)
- 3 x 120m² team teaching space
- 3 x 48m² digital/ presentation room
- 3 x 24m² social break-out space
- 3 x 24m² kitchen space (decentralization of big central kitchen)
- Each classroom has its own toilets and wash-hand-basin (decentralization of the central ablution block)
- Individual teacher office space with additional data keeping area and space to privately meet with parents or child.
- Age appropriate courtyard spaces
- Disabled access at the back classrooms

Current Walmer Estate Primary School



Special place in front of existing art classrooms



Programme – identifying the need (continue)

Art and Music Centre (Re-design of prefabricated structure linked to Apartheid identity and history)

One of the measures of a successful learning environment and its related functional spaces is whether extra curricula activity spaces are provided or not. Such spaces would include arts and culture facilities, sport fields and facilities, agricultural/ environmental science facilities, and other. These three specific co-curricula facilities have been identified as facilities that are needed on the Zonnebloem Estate. Specific nodes have been identified for these facilities as will be seen in later mappings/ drawings.

From the interviews with the caretakers of Zonnebloem Estate it was evident that appropriate spaces are especially needed for art, music and dance

classes. Apartheid had a big part to play in what these structures look like today for various reasons. See images on page 67.

An art and music centre was planned and drawn up for Zonnebloem Estate in previous years, but due to Apartheid-related reasons it never realized. (Ramsdale, 2012)

From this investigation, some of the key areas for design intervention include, the current music and art studios which in turn present an opportunity to address the street edge which is at present a dead space with little or no opportunity for pedestrian interaction. See image on page 65-66.

Furthermore, the idea for greater integration between the historic Zonnebloem buildings and WEPS became an important ordering strategy for the overall design scheme (see image on page 75) that is intended to achieve safer links and easier movement for a more unified landscape of learning.

New art centre programme:

- 6 x Art and music classrooms
- 3 x Multi-purpose units on street edge. These units can be used as housing units, study hubs, meeting places, shops, etc.
- Art exhibition space
- Coffee shop
- Permanent display area of Zonnebloem history and reception area.
- Community art/ workshop space
- 3 x display/ selling kiosk spaces



MAPPING: All Layers Overlaid



Mapping scale 1:1000 @ A1



The theoretical background, discussed before, has helped to set out the design process:

The following drawings and images are not placed in chronological order, but under each theoretical topic, design development ideas and changes during the design process are highlighted.

1. School as the heart of the community:

A school needs to function as the heart of the community, as was discussed earlier, and therefore it was important to do an in-depth analysis of the existing context as well as understanding the historical background of the area. The mapping on the opposite page shows the important layers that have helped to understand the specific site.

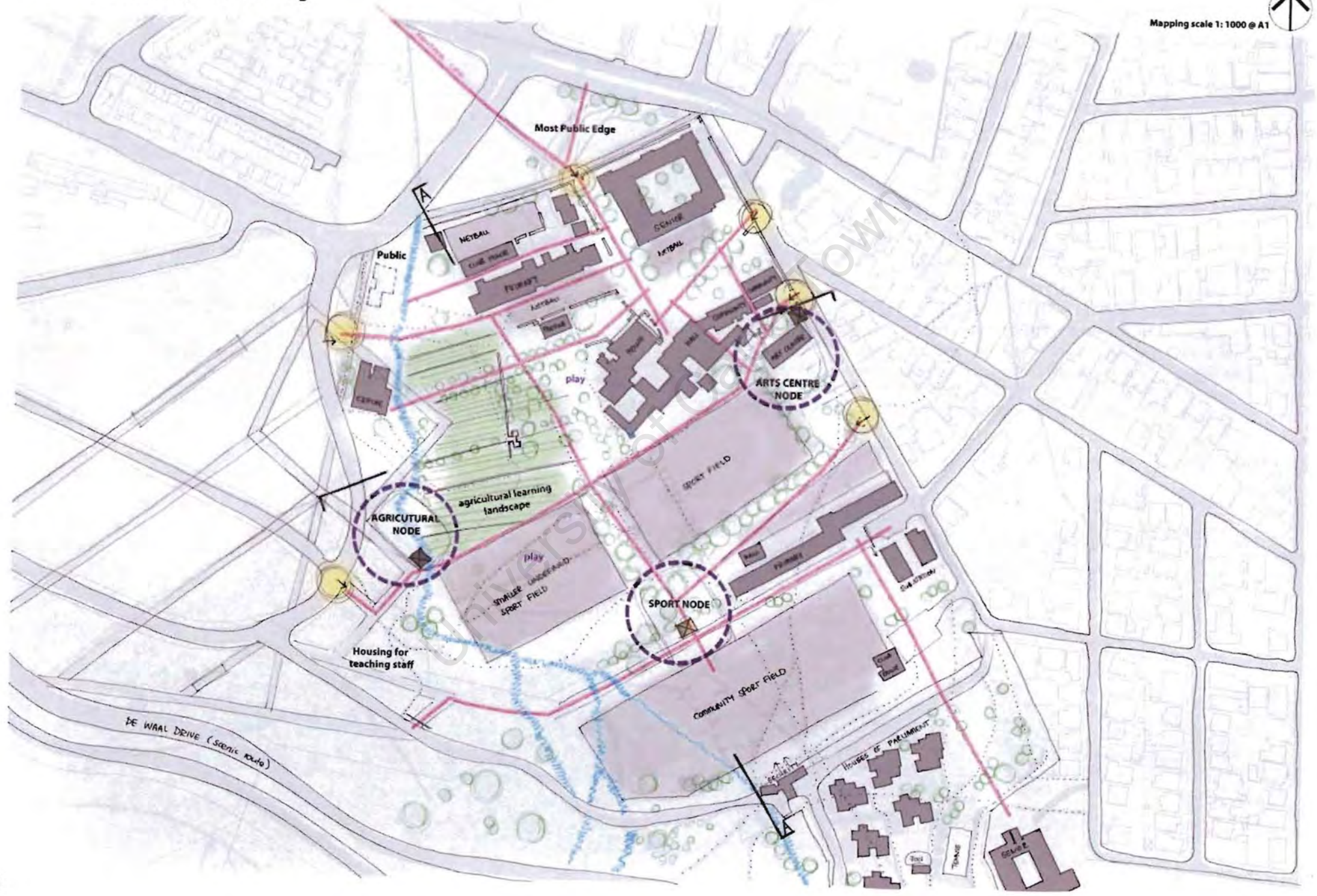
1. These landmark trees contribute to the special character of the place.
2. They provide shade and protection against strong winds.
3. The two tree-lined edges of the sport field gives a sense of enclosure which is desired for on such a big site.
4. In the past these trees have been used as fire-breaks around agricultural land, it can still serve this purpose.
5. In addition, these trees are green throughout the year and contribute to making the individual have a special connection with the outdoors.

Stitched elevation of the landmark trees



Ideas for Landscape of Learning

Mapping scale 1: 1000 @ A1



School as the heart of the community (continue):

From the historic layers mapping it was possible to identify important elements and specific areas that helped to set up a design framework/master plan that guided the process of creating an integrated landscape of learning.

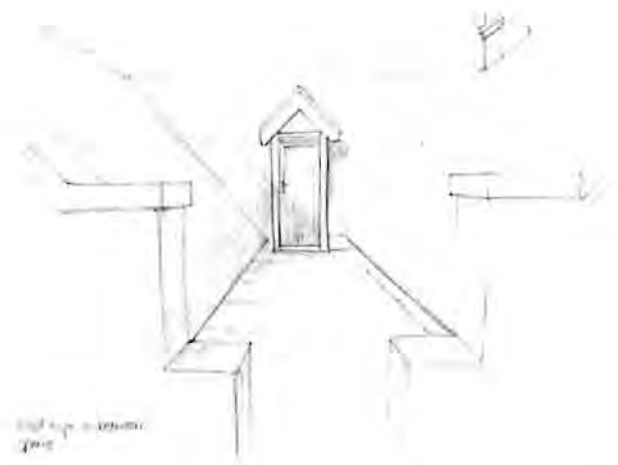
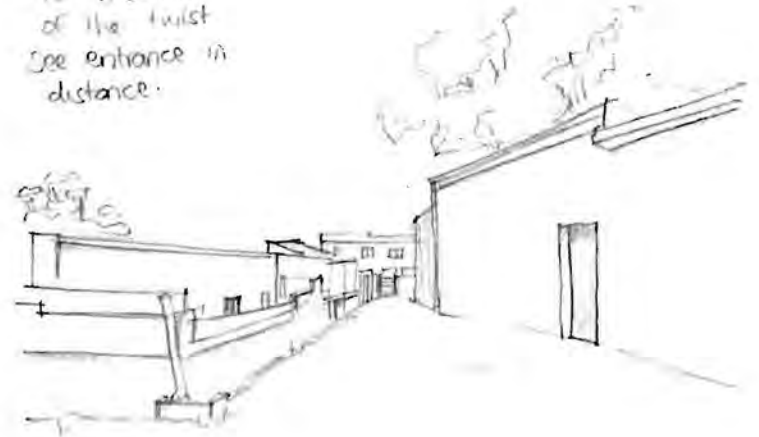
Key design ideas that are shown in this drawing are the three nodes on three edges of the site to set up a development framework where community integration can start by activating the edges and then begin to activate what happens on the rest of the site. Controlled entry points, better linkages and shared use of facilities are all main considerations of the design.

This drawing also shows areas where social interaction can occur outside of the classroom, these spaces include main entry points, sport fields and pathways.

The drawing on the left is a very diagrammatic sketch of ideas and does not resemble the special character of the place, therefore the following sketches have been added to get a sense of what the spatial quality of the space is. The historic farm-like quality is still very present. These sketches have helped to inform the architectural language of the project, where specific architectural elements are used in a more modern manner. See 3d images on pages 95-98.



The pinch
the twist
of the twist
see entrance in
distance.



The walk between buildings

MASTERPLAN: Landscape of Learning & Community Integration

Mapping scale 1:2000 @ A3



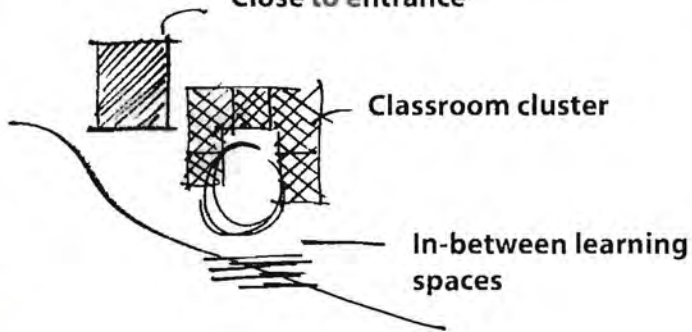
2. Small learning communities on the Zonnebloem Estate:

The previous drawings and mappings, as well as the information from the District Six development framework 2011 by Lucien le Grange helped to set out a master plan for Zonnebloem Estate portraying historical linkages, addressing current needs of the users and community, as well as potential future needs.

Each school on site has its own common space, a hard surface with adjacent greenery. This idea relates to the theory of SML'S as discussed before. In the new master plan, the historic buildings form part of an integrated public open space system and also has specific boundaries which will allow for improved maintenance and management.

Furthermore, within the new layout of WEPS and the Art centre, the classrooms are divided in such a way that maximum 150 students share a common space. This common space allows for a positive outdoor connection and opens towards North sunlight.

Community - Shared Use Space Close to entrance



LANDSCAPE PLAN: In-between places of learning

Mapping scale 1:500 @ A1



Legibility, accessibility and controlled entry points:

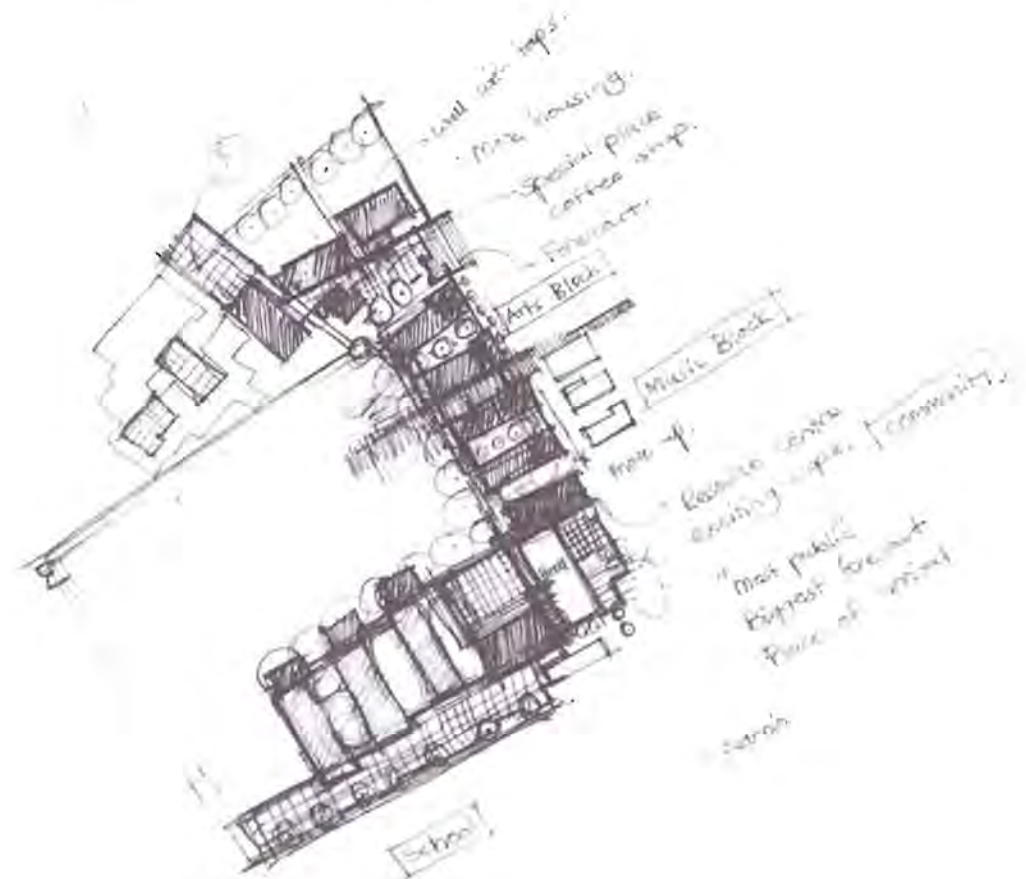
The landscape plan on the left shows how the public and private spaces have been arranged in order to create a more legible learning environment.

The main public parts, "the heads", are the Forum-Research Centre and the Art Exhibition Centre. These spaces have been given a more appropriate public architectural language. This can especially be seen in the development of the sections on pages 83-86. The social spaces related to these heads are designed to be of a bigger scale as these spaces are the main entry points and therefore allow for bigger groups of people to interact. These spaces function as the forecourts of the learning environment.

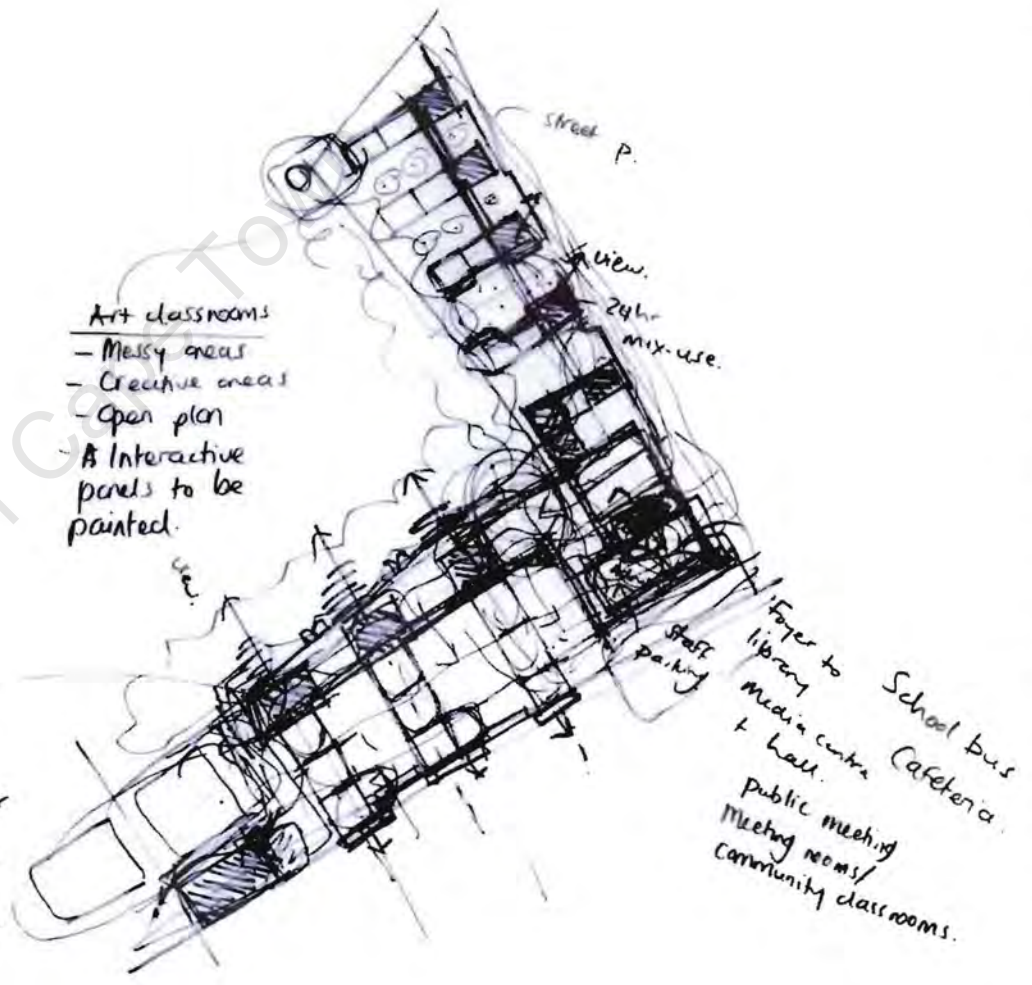
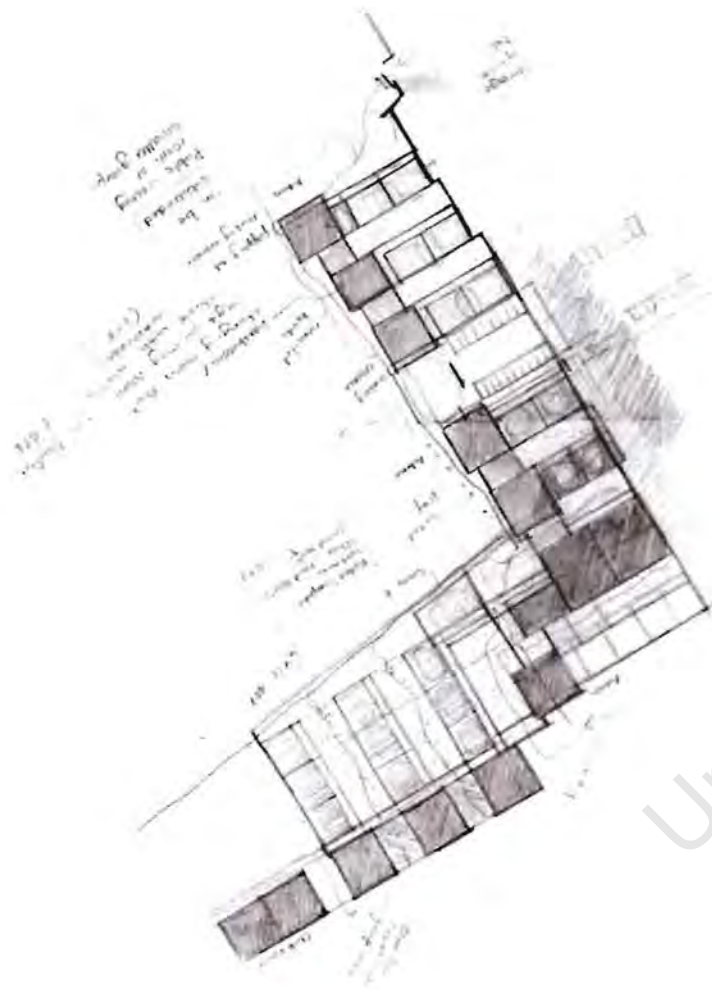
The forecourts and inner courts relates to the programme that takes place adjacent to it, and helps to create a clear hierarchy of space. A different architectural language have been used on different edges. On the street edge a more urban architectural language have been used, and on the tree edge a more natural timber tree-like language have been used.

Safe 'controlled' entry points are achieved by having less main entrances, activated by additional public components, such as sport courts, forecourts, coffee shops, cafeteria's, etc. and by having permanent 'eyes' on the area by means of an office and/or reception area or residential living units overlooking the space.

Sketching ideas for street integration



The position of the public parts of the school system (the heads), have changed to relate to more appropriate conditions:

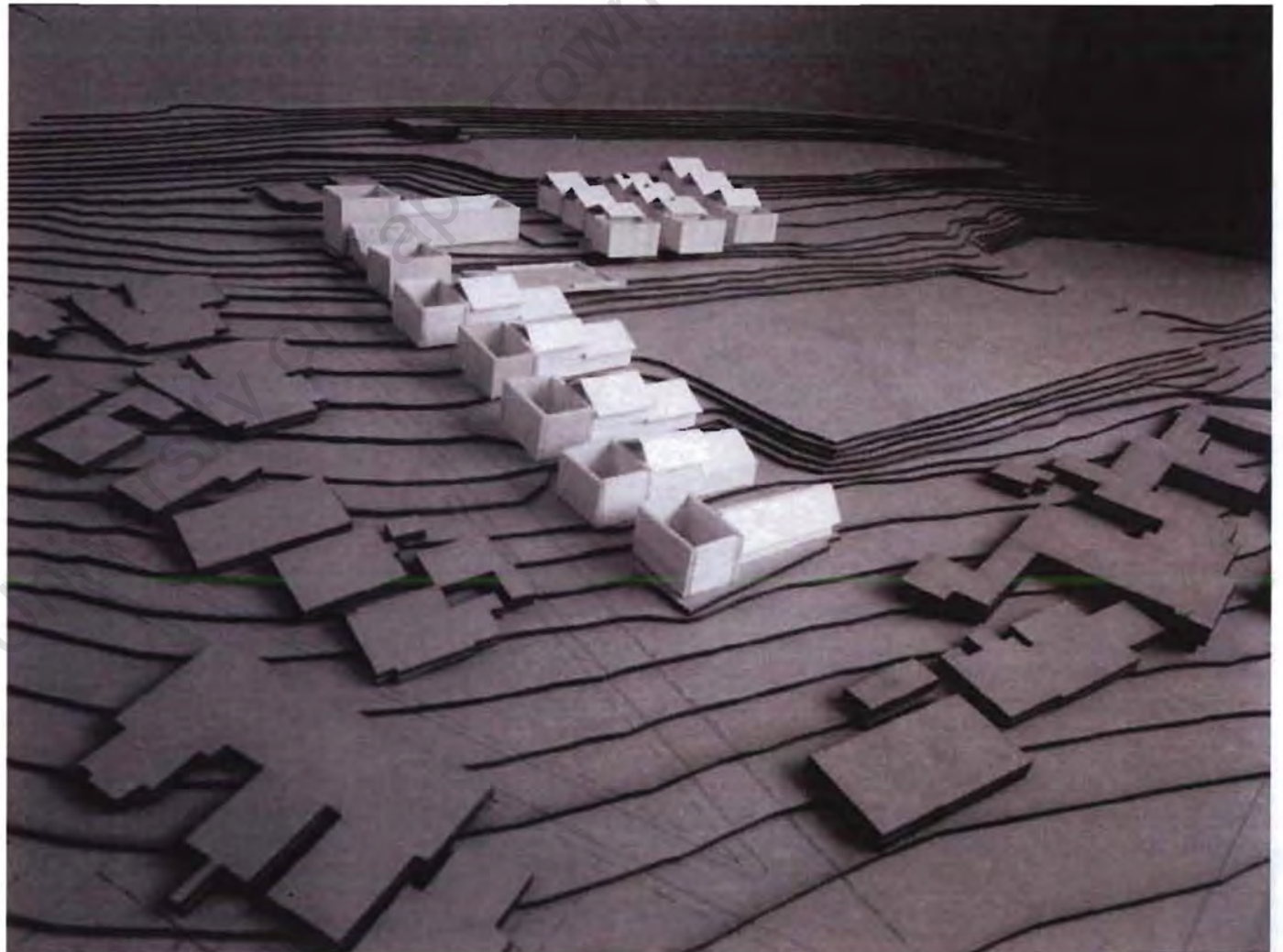


- School public boxes:
- Informal computer lab
 - Formal learning spaces
 - Play space

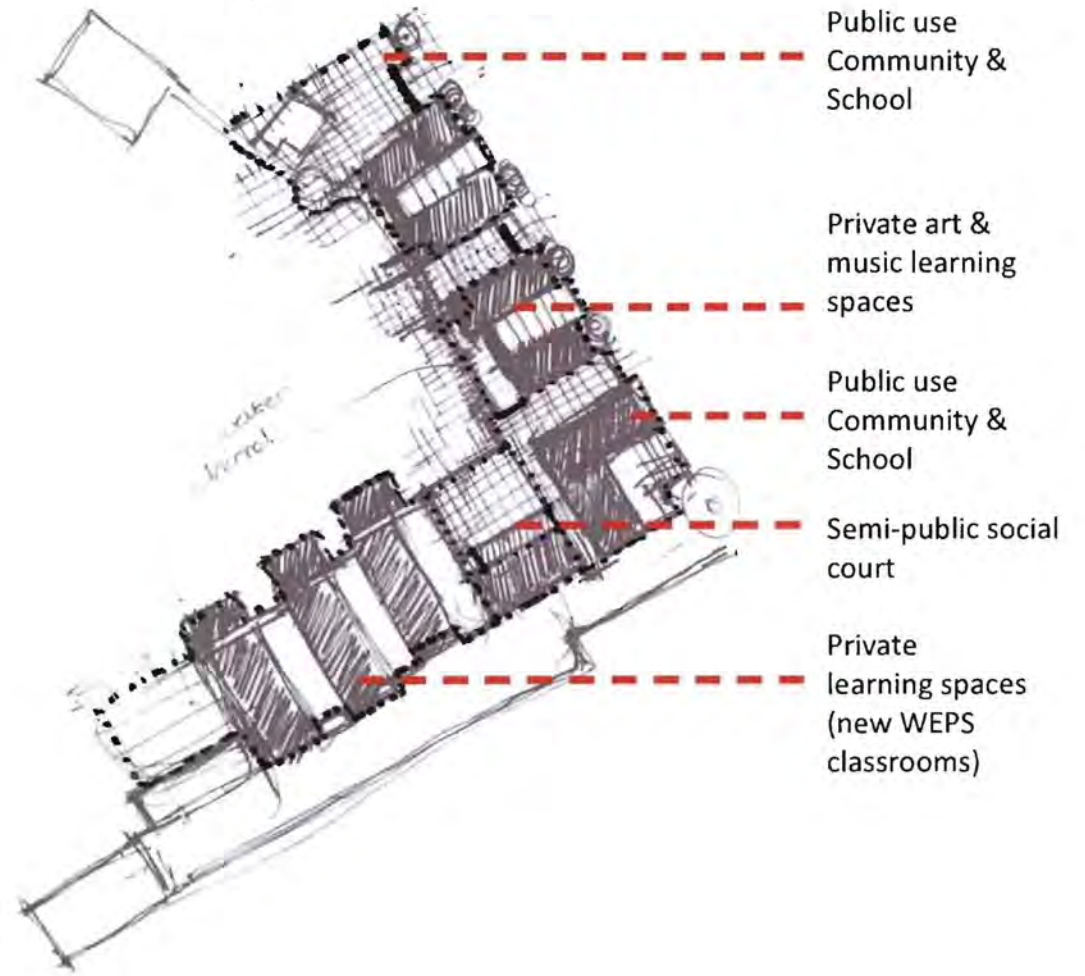
- Art classrooms
- Messy areas
 - Creative areas
 - Open plan
 - Interactive panels to be painted.

- Staff parking
- Foyer to library
- Medicine centre
- School bus
- Cafeteria
- Hull
- Public meeting
- Meeting rooms/Community classrooms.

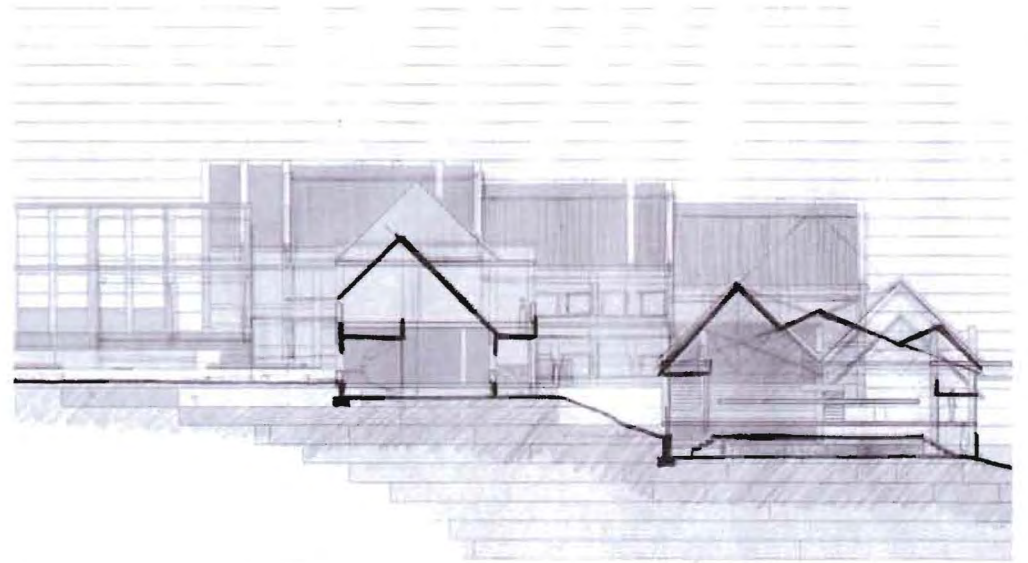
The heads have a different architectural language to the classroom spaces
as can be seen in this process model



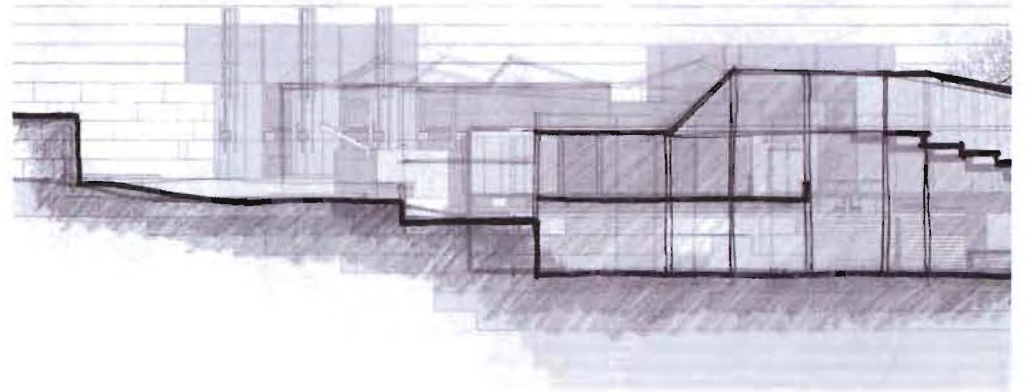
The idea of lockable zones can be seen in this diagram

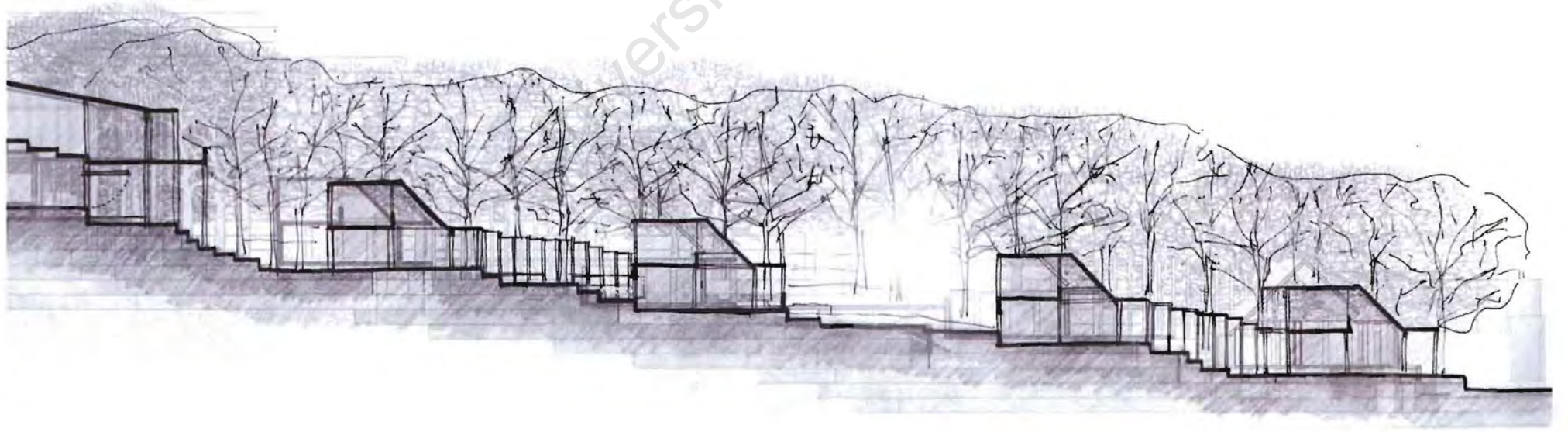


Section 1: Initial layout of WEPS and Zonnebloem link



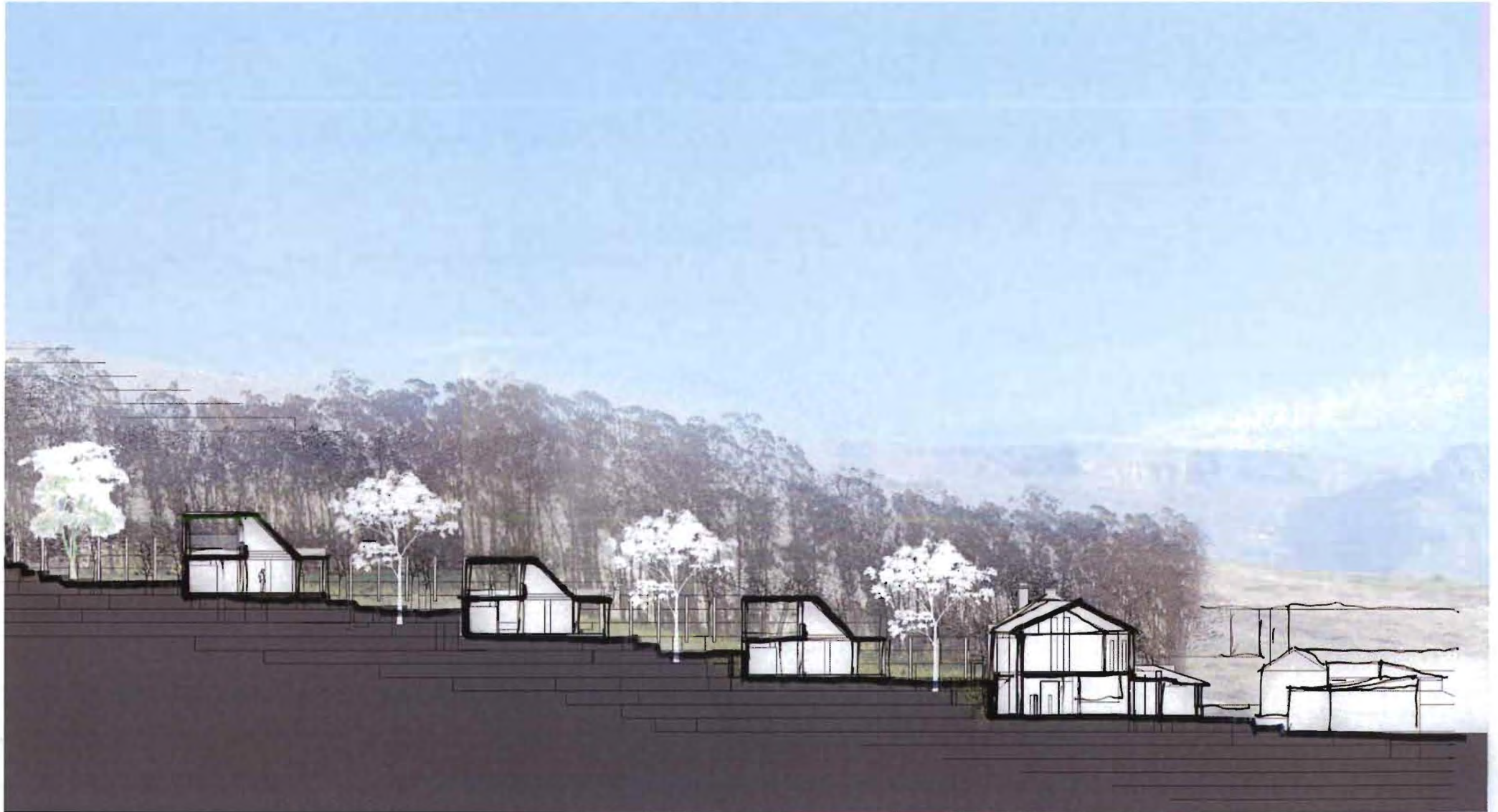
Section 2: Designing a more public Forum-Resource Centre



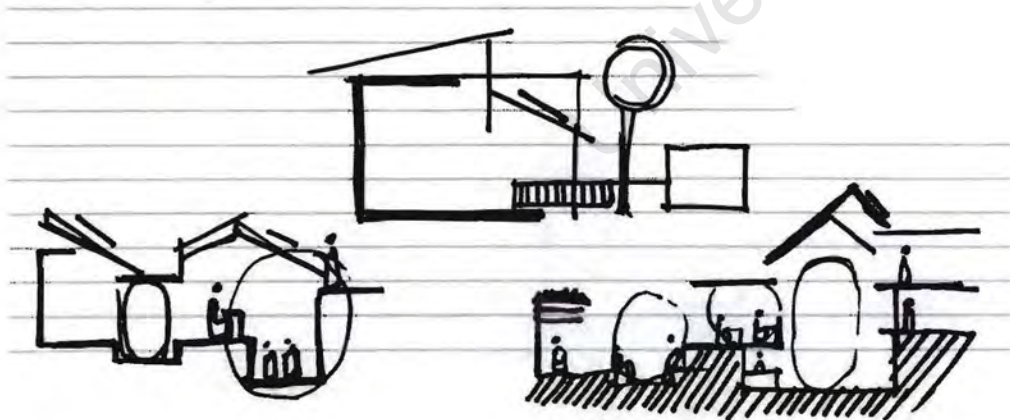


Section 3: Forum-Resource Centre and Art Exhibition Space more legible and public architectural language relating to different edge conditions





Sketches indicating different spatial conditions for positive social interaction



Concept model: light-weight, flexible collaborative space next to traditional classroom

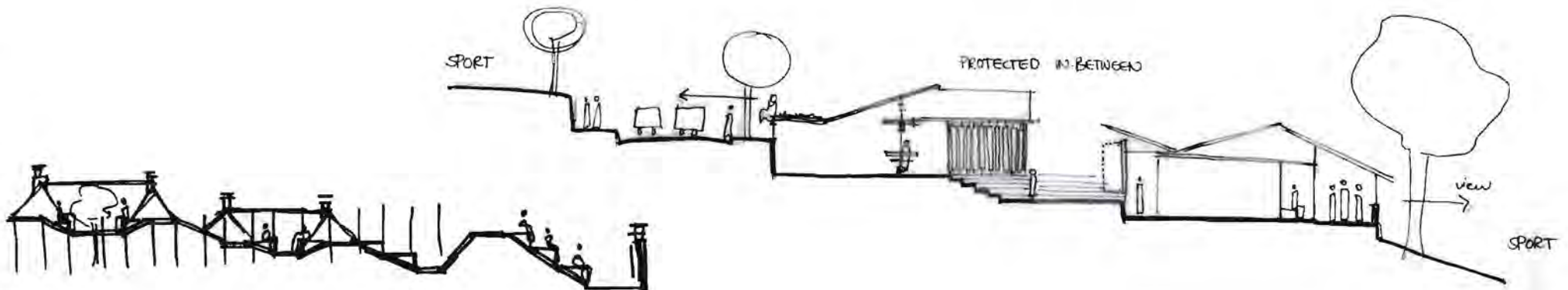
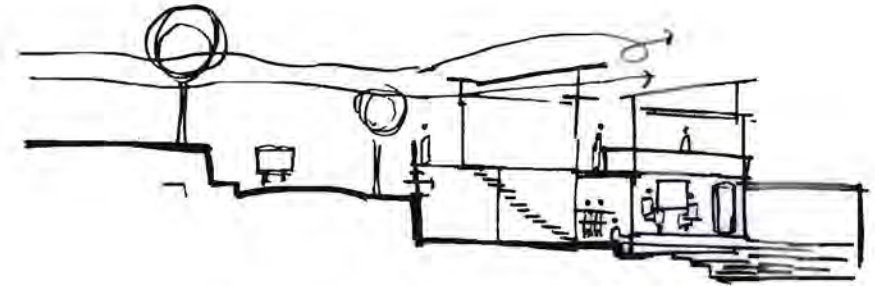


Collaborative Learning Spaces:

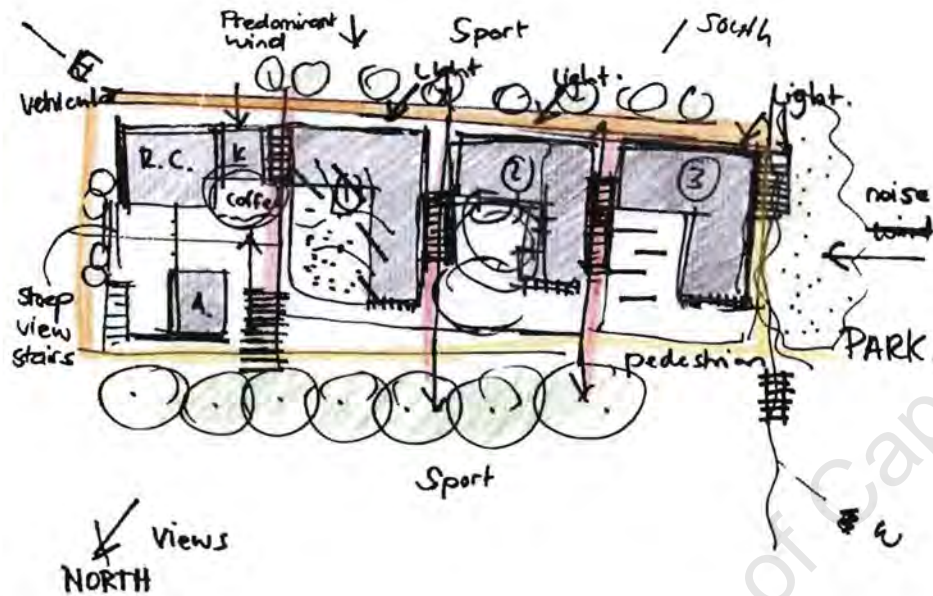
As part of the design process, additional functional spaces that are not part of the required spaces of WCED are proposed for the new WEPS as mentioned before. Spaces that allow for group learning activities and positive social interaction, such as team teaching spaces, presentation spaces, bigger forum space, etc. were added. In addition, comfortable seating areas, individual-study and group learning spaces as part of the circulation space are proposed.

In the design project an architectural language that is more "loose" and flexible are used for the group/ collaborative spaces. This idea can be seen in sketches and process model on the opposite page.

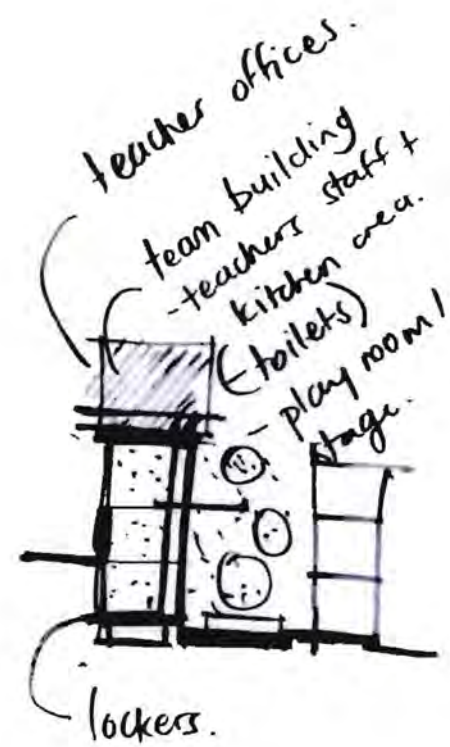
For reasons mentioned before, outside collaborative learning spaces are very important for learning. Therefore, in the project these spaces needs to be comfortable spaces that will make individuals want to be there. These spaces have therefore been designed to be sheltered from predominant strong winds, orientated towards North and in its spatial arrangement 'belong' to certain individuals.



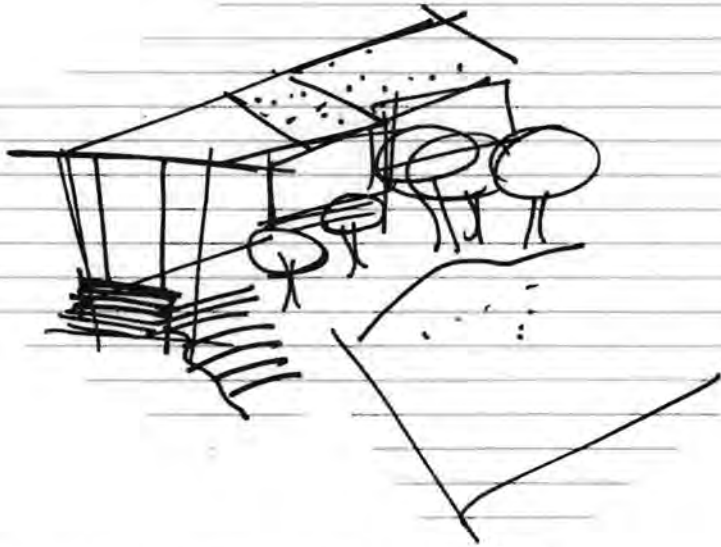
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Courtyards of the new learning environment designed differently to be appropriate for the children making use of it. Comfortable and protected social space.

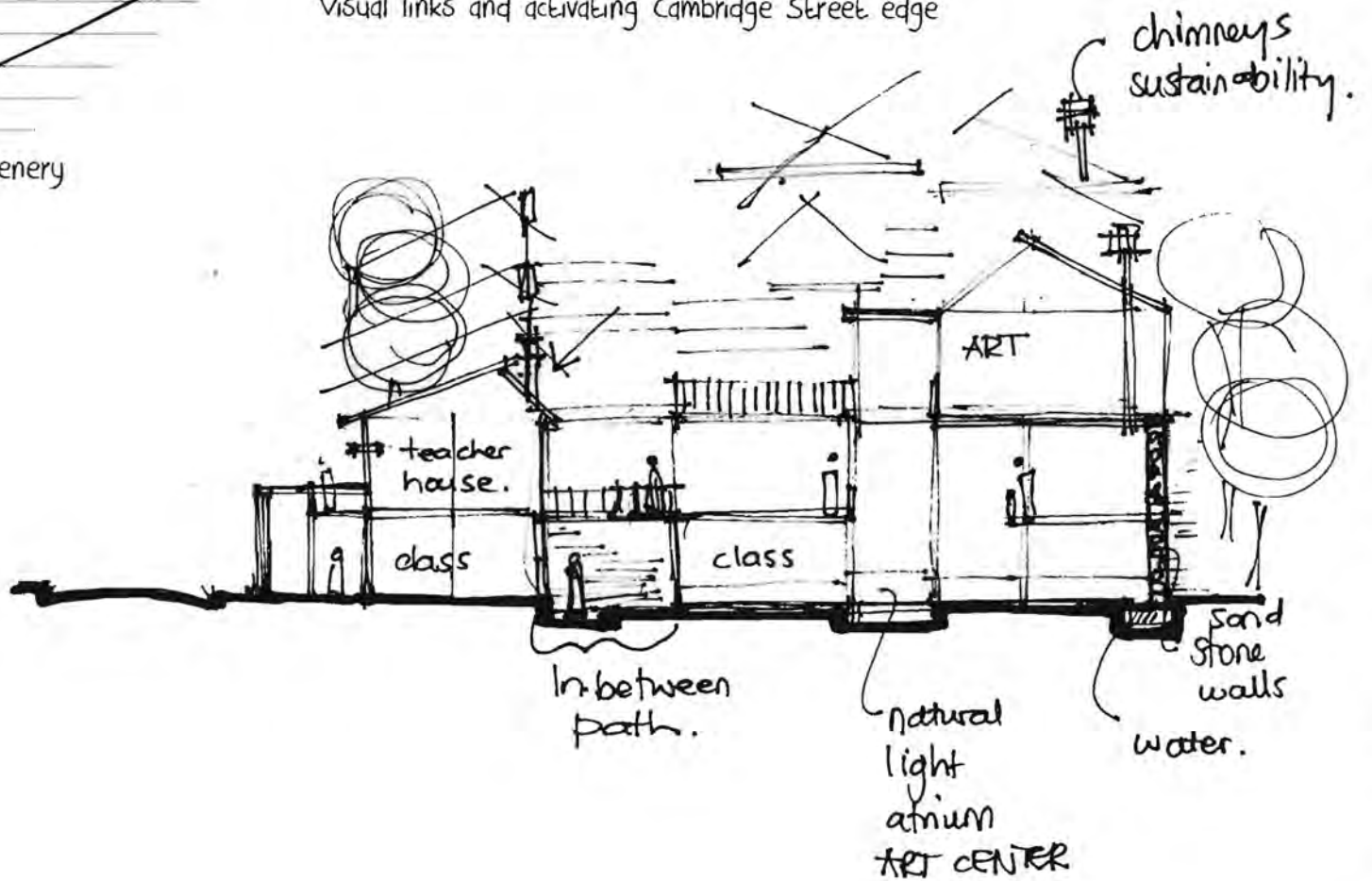


Developing the concept of "the head" as the public part of the small learning community. Collaborative learning can take place in this space.



In-between spaces - different levels and greenery

Visual links and activating Cambridge Street edge

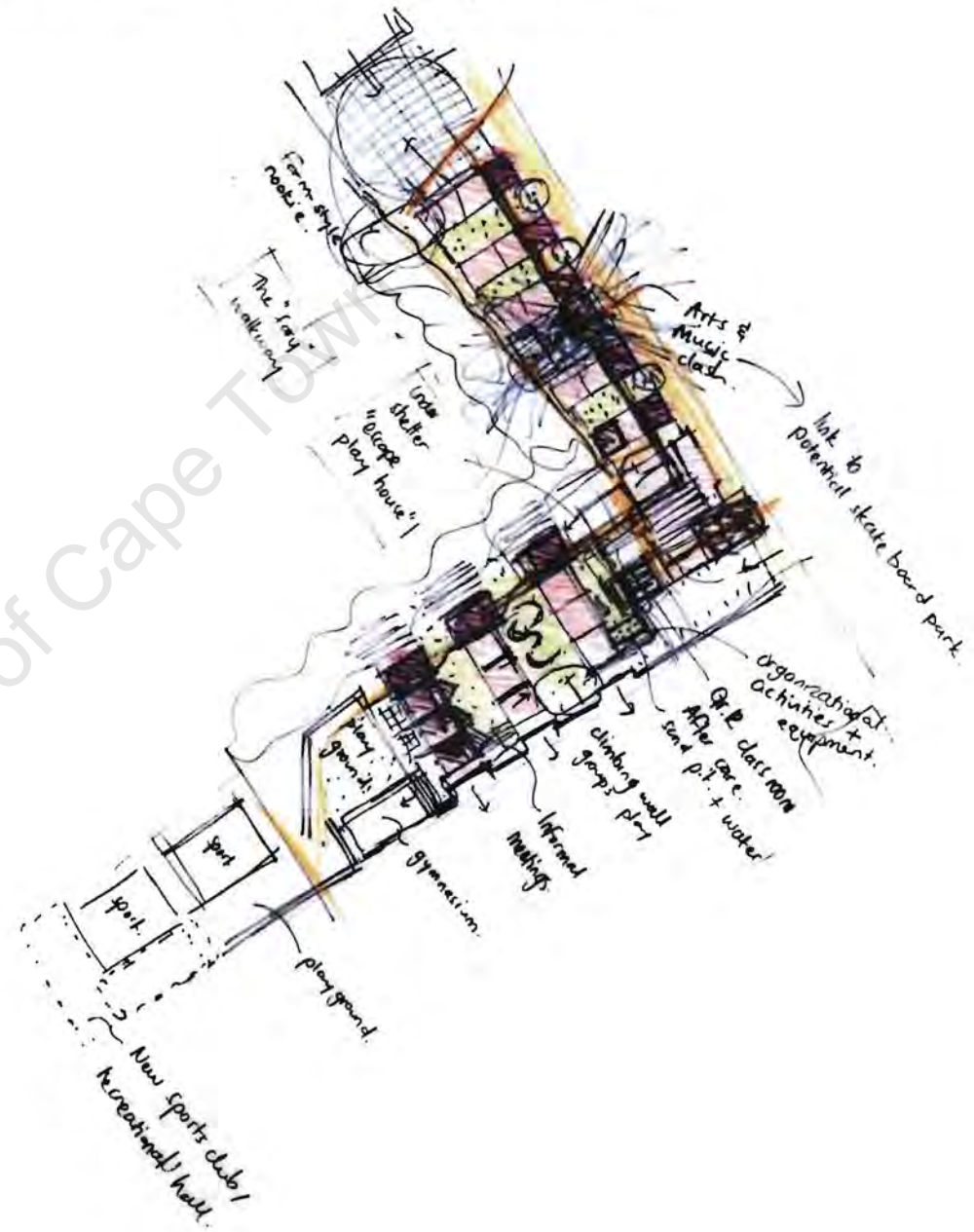


In-between Learning Spaces:

One of the aims of this project was to propose ways of designing in-between spaces, such as corridors, pathways and courtyards, to be more conducive for learning. As identified in the theoretical section, important architectural design elements were considered when designing these in-between spaces. These design elements includes the use of level changes, visual links, openings towards views, connection to nature and protection from external factors such as sun, wind and rain.

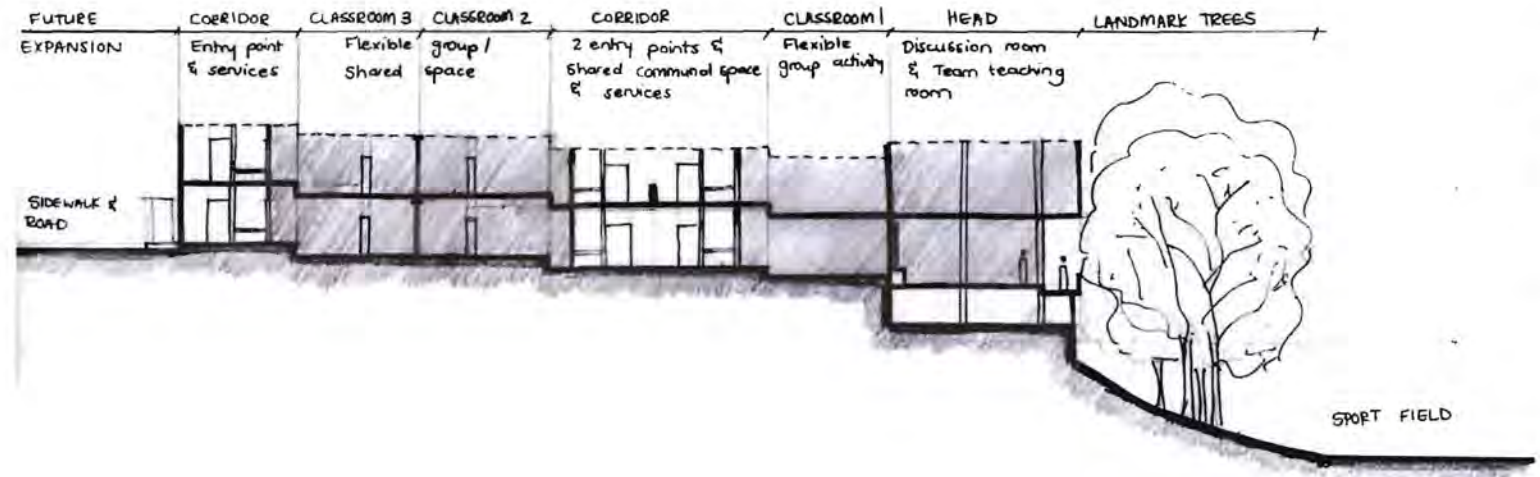
In the initial design proposal (see page 94), the in-between corridor space for the 'new' WEPS classrooms did not offer much more than what the existing classrooms of the school offer. Working out the inside classroom space and specifically the group activity area allowed opportunity for the circulation space to become more exciting.

The head, body and circulation system proposed in the project will be explained on the following pages.

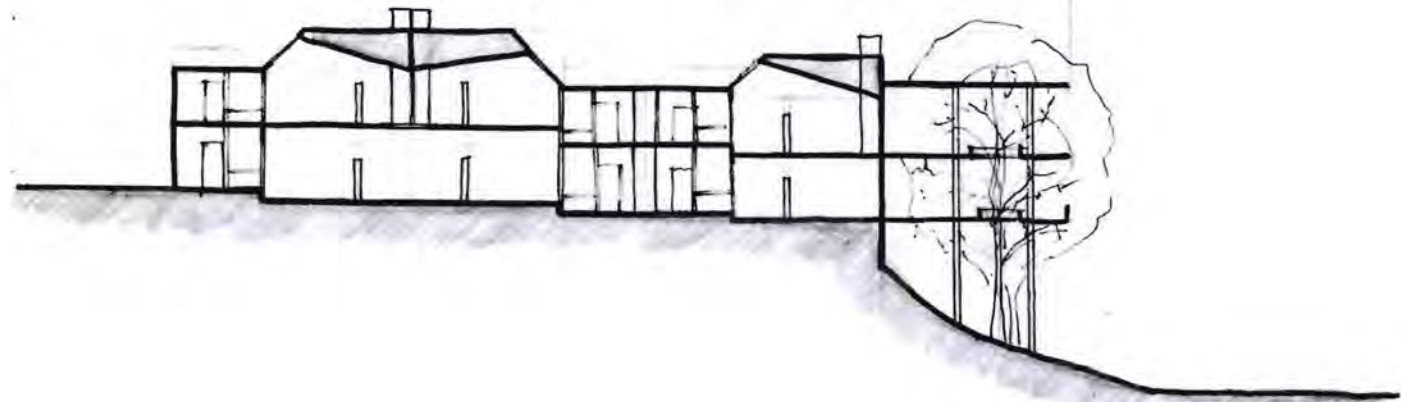


Section 1: Short section between existing sport field and landmark trees.

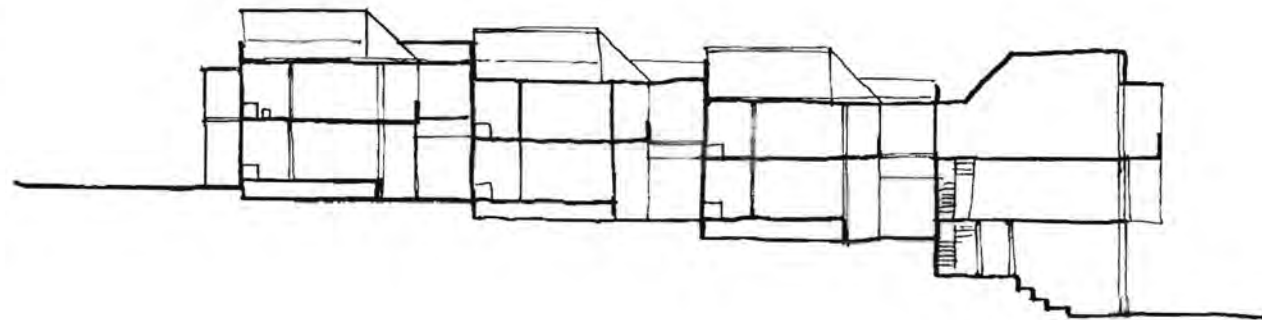
This section indicates how the classroom model 2 system work. (This will be discussed later on)



Section 2: A better connection is formed by shifting the 'head' into the trees to overlook Zonnebloem Estate & the sport field.



Section 3: The section gradually steps down towards the sport field. This allows for exciting ground spaces. The roof design has improved and opens towards the surrounding views.



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Initial Ground Floor Plan

The head, body and circulation system of the new WEPS classrooms

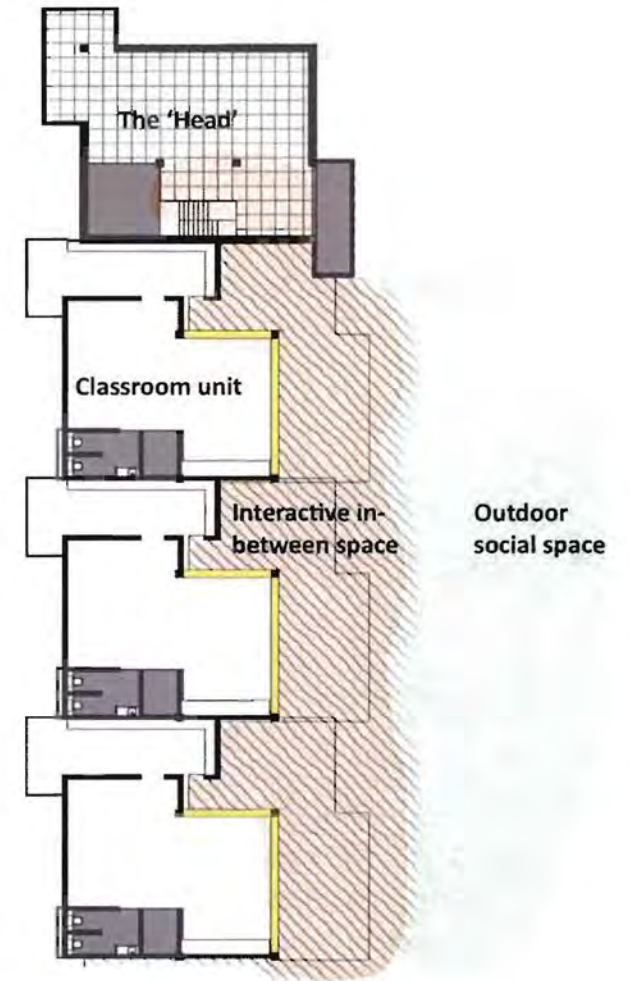
3D view looking at the interactive in-between space



Concept sketch for head & body system
informed by ideas of Hertzberger and Scharoun



6 classroom units forming the body with a 'head' at the end

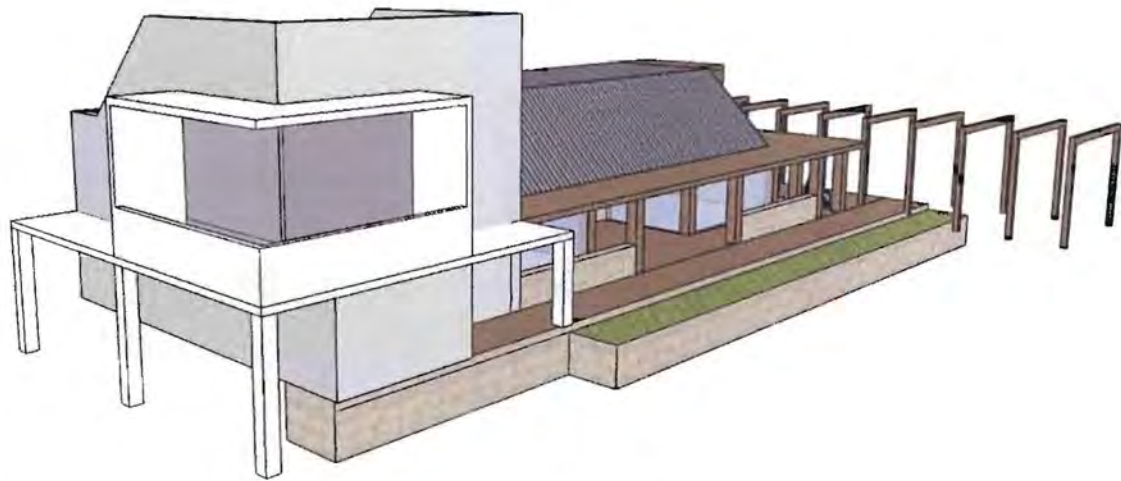


The yellow walls indicate the interactive walls that relate to the in-between spaces. These type of walls will be discussed in the design development section.

The head, body and circulation system of the new Art & Music classrooms

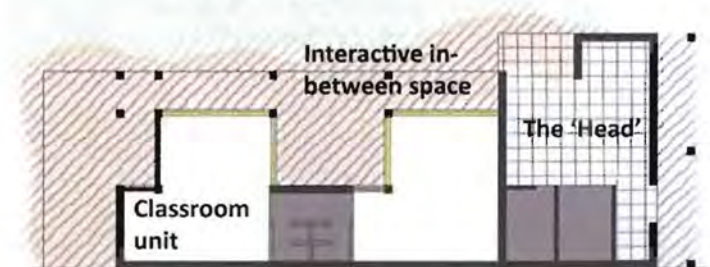
3D view looking at the interactive in-between space

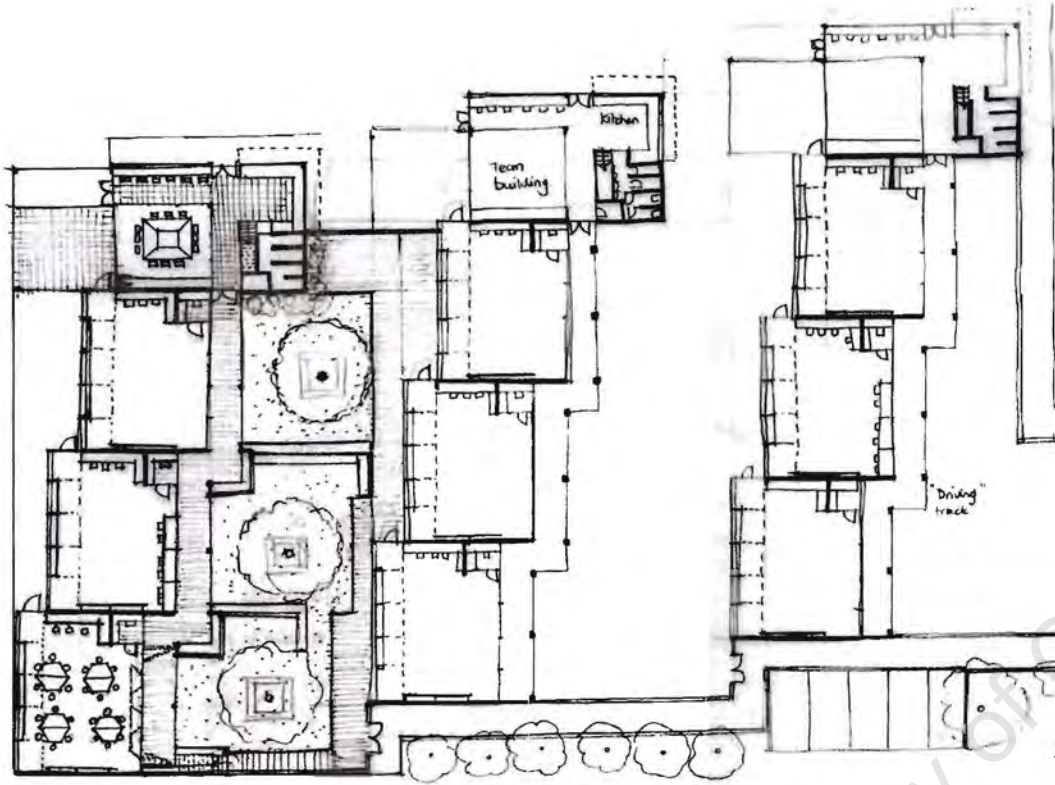




2 classrooms with mezzanine levels and a shared space forming the body with a 'head' at the end

Outdoor
social space





Initial classroom layout



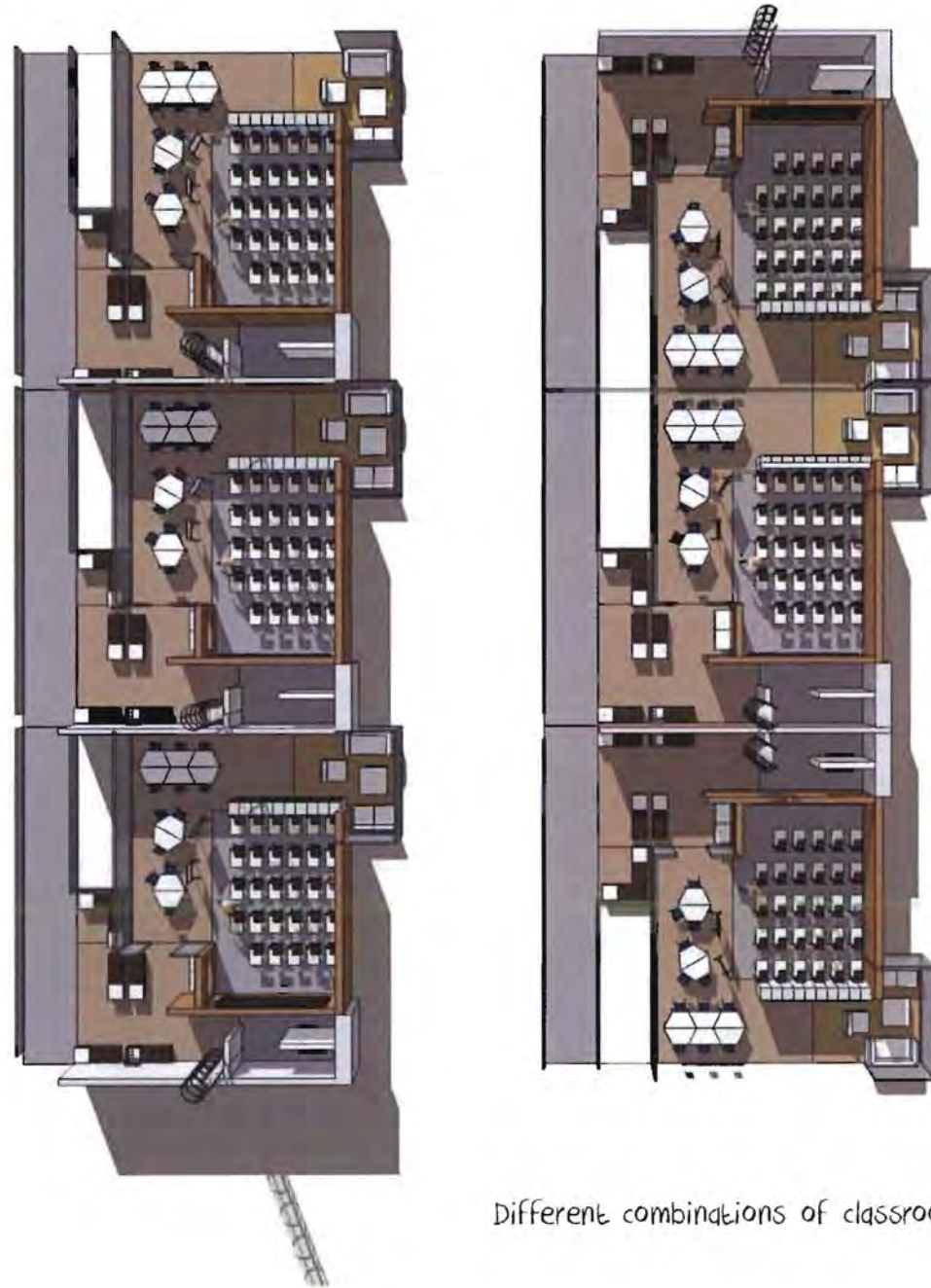
Classroom model 2

Internal Learning Spaces:

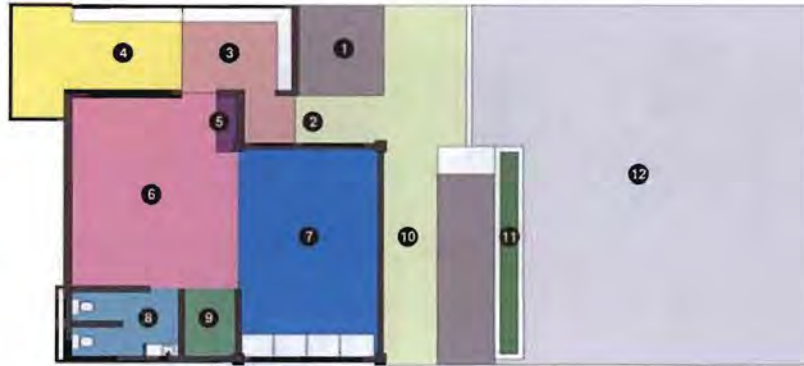
Seeking to design better internal learning spaces, especially for WEPS, the design proposal went through a series of changes. Initially the classroom was designed as a traditional rectilinear box (a product of assembly-line mentality). It then developed into a L-shaped classroom which was informed by Walden's idea of the Learning Suite, to allow for multiple modes of learning activities.

One of the problems of the second model was that the flexible group activity space was disconnected from the corridor.

The second model was modified into a third model to allow for more functional areas (see zoned plan on page 101), to have a better connection with the circulation area, to allow for better outside and inside interactive learning opportunities among other improvements.



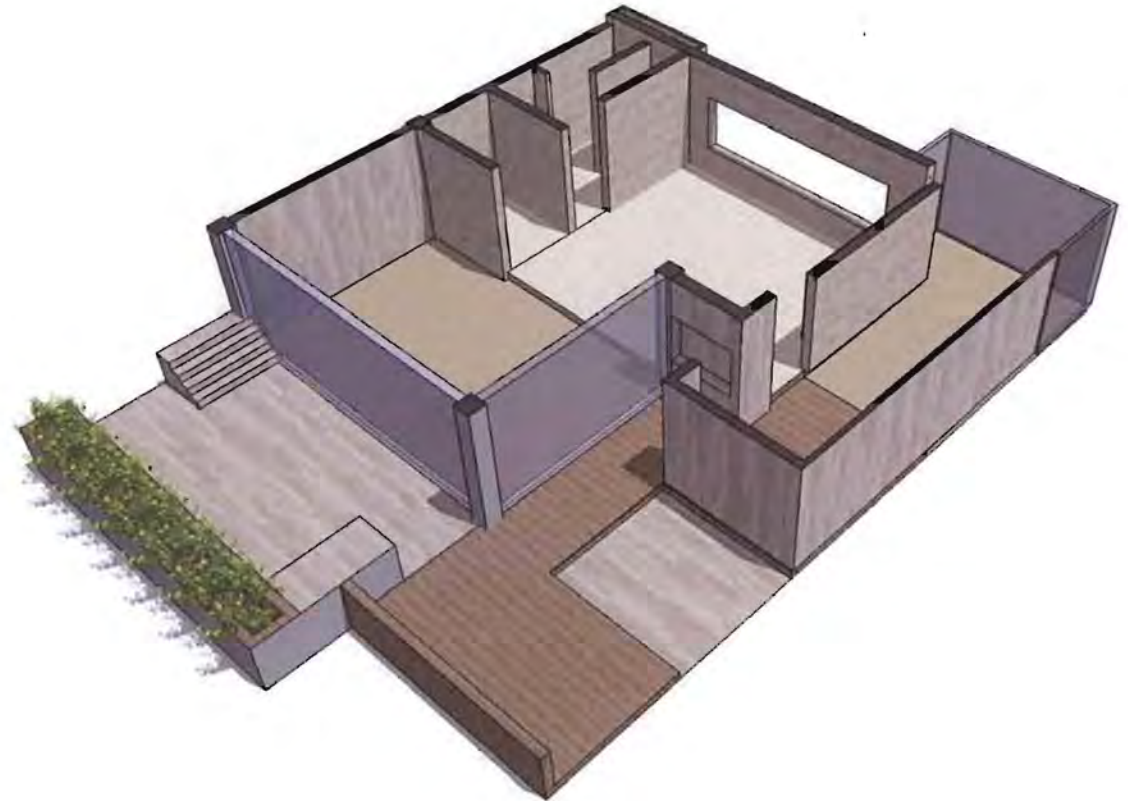
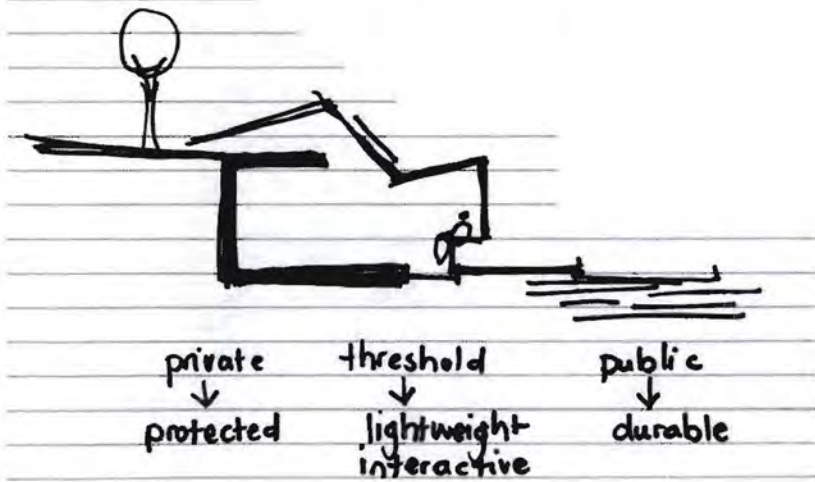
Different combinations of classroom model 2



1. Covered social area
2. Classroom entrance
3. Book bag/coat area
4. Teacher and data keeping area
5. Notification area
6. Traditional teaching
7. Flexible group learning
8. Bathroom
9. Time-out area
10. Circulation
11. Planted area
12. Open social area

Classroom layout 3

Sketch indicating different material use of the classroom:
 Solid, heavy for the individual academic area
 Light-weight for the interactive in-between space



The classroom layout is flexible enough to allow for different age groups to be educated within the space:

Grade R-2

- Reading nook
- Carpet play and sleep area with pillows
- Small tables for focused activities
- Interactive wall
 - puppet shows
 - informal performances
 - news box



Grade 3-5

- Workshop/ lab space for practical experiments
- Grouping together important therefore round tables for academic teaching
- Outside lounge space and group tables
- Interactive wall - part of workshop space



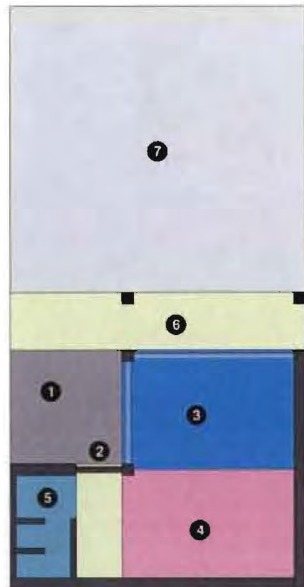
Grade 6-7

- Individual desks in focused academic area
- Flexible group discussion room
- Individual study spaces inside and outside
- Interactive wall
 - additional study spaces
 - displaying current projects

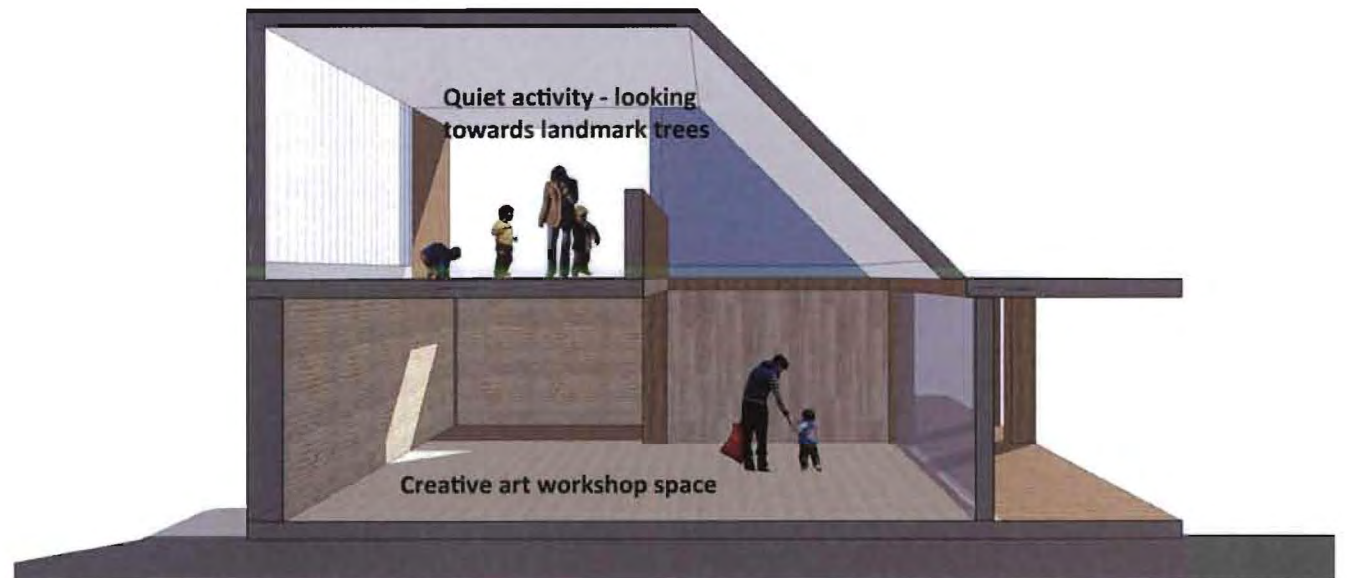


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Art & music classroom layout



- 1. Covered social area
- 2. Classroom entrance
- 3. Flexible group learning
- 4. Individual academic activity
- 5. Bathroom/ wash-up area
- 6. Circulation
- 7. Open social area

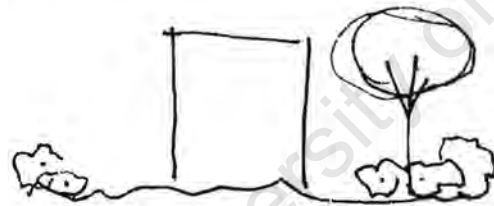


Ownership & appropriation of space:

The use of plants, a bathroom and a particular social space (courtyard or roof terrace) assigned to each classroom unit, locker space, individual desks, home-like stoeps and front yards, kitchen space and age appropriate architecture are all design elements that have been incorporated in the project which can allow individuals to take ownership of the space.

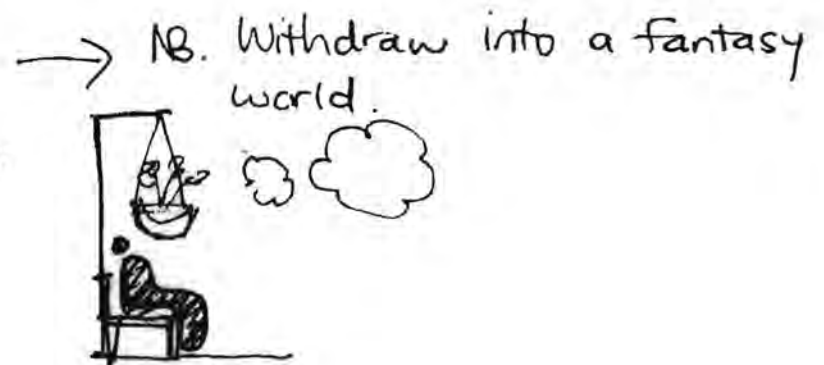
In addition, the design proposal provide spaces that are flexible and adaptable and therefore will make appropriation more achievable.

Human environments for learning.



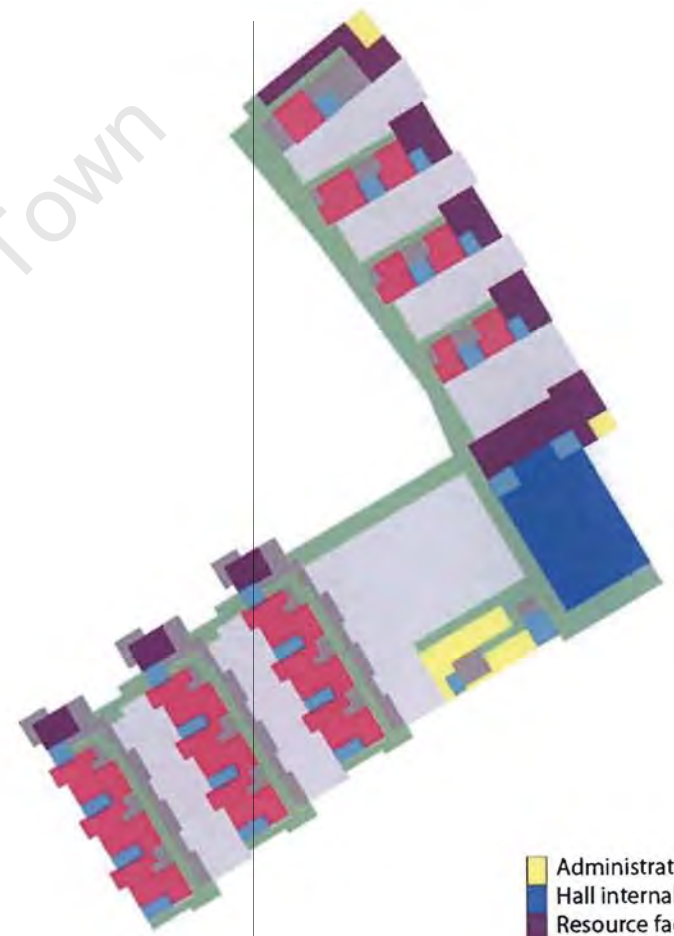
Building's relationship with garden
NB for social development of pupil body.
(p.38, Archi. of schools).

Shelter formed by
furniture / garden bower
(symbolic characteristics
of his / her home)





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- Administrative
- Hall internal forum
- Resource facilities
- Bathrooms
- Classrooms
- Circulation
- Internal social space
- External social space

Comparative study:

It is evident to see in the spatial layout of the new learning environment, that there is a better connection between public parts of the project and the street. The circulation of the project is linked to internal and external social space in a simplified, yet interesting manner and can allow for positive social interaction. Overall this project provides much better learning conditions than what the existing environment does.

In the following design development section, the technological aspect of the project will be discussed.

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Design Development

The following is the summarised information from the initial investigation of interactive technologies:

The South African learning context and architectural detail and materiality:

The current building systems and materiality that the WCED and other South Africa education government departments are implementing in school buildings make sense in the economic circumstances of today. Local fast building techniques and “cheaper” materials are used to build schools as fast as possible in order to address the current backlog in school provision. The problem is that these standardised learning environments are not conducive for successful, well-rounded learning for reasons stated before. It is not a sustainable model of school building and it does not address the needs of present and future learners.

It is evident to see in the example of WEPS and other Cape Town schools that the predominant perception of building public schools is so fixed in the production line mentality where schools are built as industrial institutional buildings to educate the masses. By being more informed about the problems of the current school building model, and with a little extra time dedicated to the design process and with a little more creativity and innovation, ordinary building materials and simple detailing can be used in an inventive way to create better learning environments.

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The Active Learning Interface:

In the process of developing the design project it was important for me to look at a technology and materiality that can enhance the process of learning within the school environment. The investigation of an interactive skin and the individual understanding and using his/her own bodily movement and actions to interact with it, was of particular interest.

Kinaesthetic learning is a learning style where students learn through moving, doing and touching. "Kinaesthetic students learn best through a hands-on approach, actively exploring the physical world around them...through interacting with the space around them, they are able to remember and process information" (LdPride, N.D.) By incorporating an interactive skin within the school environment, it can stimulate the kinaesthetic learning sense of the learners.

In Schools for the Future, Walden notes that "learning opportunities can be woven into the structure of a school, making it an active space rather than a passive space housing a disarray of 'things.'" (Walden, 2009)

The skin can therefore become a central element which can provide added value to the users of the building, especially when interactive and stimulating systems such as movable wall partitions, sliding and folding screens, adjustable and flexible working spaces, etc. are integrated into it. An interactive skin/façade can serve both as a toy and a functional tool. It can be a didactic element that helps children to get acquainted with colours, forms, shapes, numbers, abstract terms such as 'over', 'under', 'between', etc. and it can help to improve their memory. An interactive system can therefore help to develop both organizational and physical skills of children.

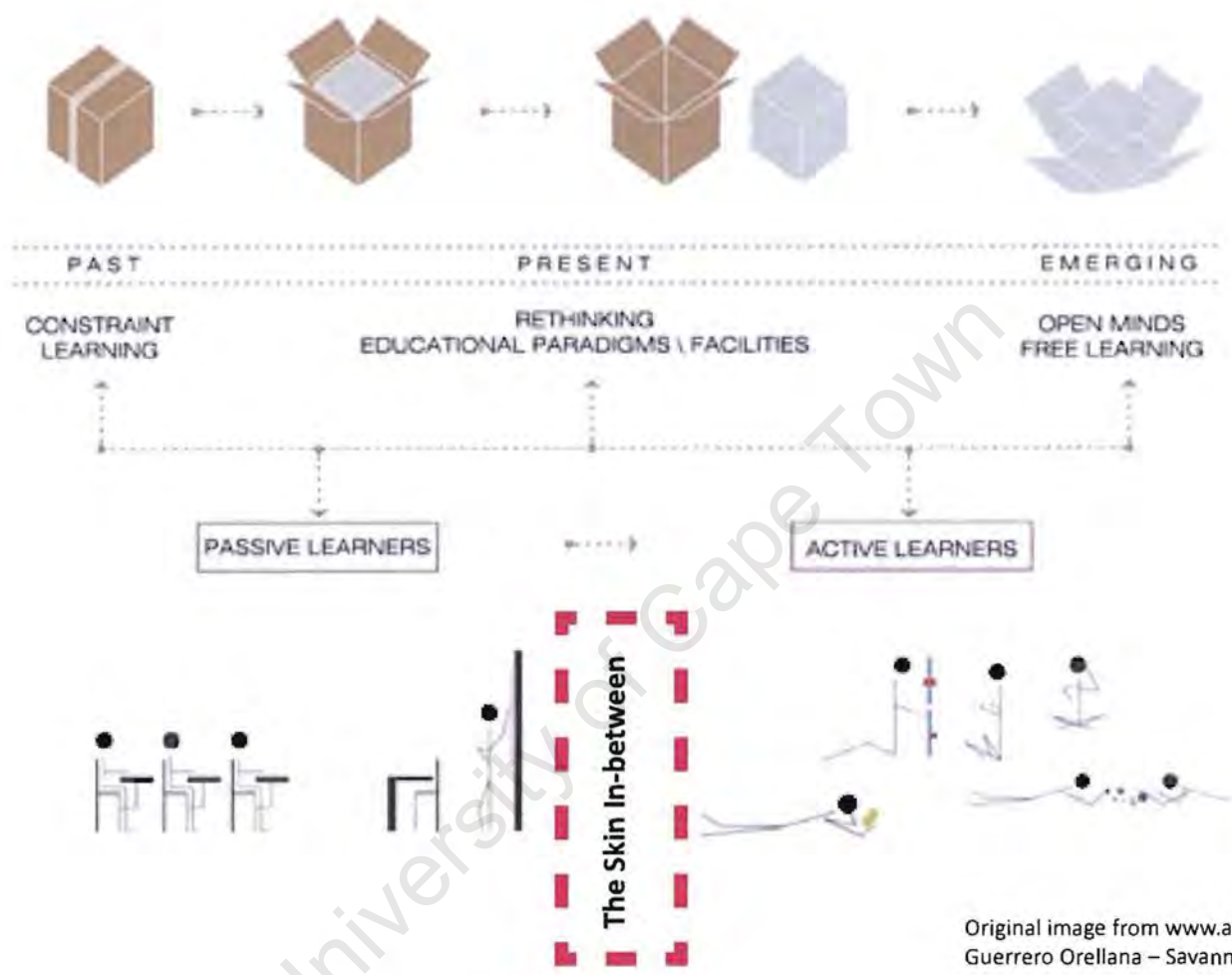
Many schools in South Africa are marked by their dilapidated fabric, by insufficient thermal insulation, and dull classrooms that fail to comply with modern pedagogic standards. Curricula and pedagogical reforms have led to the South African government policy for learning to be more focused on learners gaining knowledge and critically engaging with it. A well-designed, durable interactive skin within the learning environment can therefore be used as a functional means and contribute to the process of learning where children can actively and critically engage with it.

According to the Neufert Architect's Data, educational experts maintain that, during conscious learning, people best retain information that they have obtained themselves, more precisely:

- 10% of what they read,
- 20% of what they hear,
- 30% of what they see,
- 50% of what they hear and see,
- 70% of what they say themselves,
- 90% of what they do themselves involving their actions.**

Therefore it is important that children physically interact with their environment to stimulate all senses and so the process of learning is activated.





Original image from www.arquillano.com, 2011. Autor: Marilaura Guerrero Orellana – Savannah College of Art and Design.

The skin in-between

The interactive skin can function as a filter and a mediating skin between external and internal space that provides the opportunity for traditional ways of learning as well as active creative ways of learning.

The Active Learning Interface (continue):

As mentioned before, this thesis is looking specifically at primary public education. In *Design for Fun: Playgrounds*, Marta R. del Alamo identified what type of (learning) activities children between the ages of 0-13 are interested in.

She has grouped children according to their age and specified what type of play habits she has observed in each growth stage:

Between 3 and 6 years of age, and with the beginning of social awareness, children usually play in groups, thereby fostering interpersonal relationships and sociability. Children in this age group enjoy activities which represent something else; they generally play with abstract elements and movable equipment.

From age 6 to 8 children gravitate toward activities which involve movement and action; activities which develop both organizational and physical skills. Children in this age group enjoy testing their skill with more or less complex structures that call upon different motor responses.

As adolescence nears, age 8 to 10 and upward, children opt for grouping together, but without adult supervision or interference from younger children. They generally like to demonstrate their powers of balance and coordination in more complex climbing equipment. (Alamo, 2006, p. 268)

This information was helpful to understand what the needs and interests of children are at different ages and makes it possible for the designer

to know what appropriate architectural systems can be used that will challenge the children into thinking.

The architectural interactive skin should be playful and fun as it will then become an important element used by the children as part of their 'work' for the day. As noted on one of the doors on Zonnebloem Estate: "Children's work is their play. Children learn from everything they do."

The skin of the school building can function as a three-dimensional textbook that stimulates learning and interactivity. This is especially important for the 'in-between' spaces of learning environments. The skin can be the architectural device that shapes and encloses the in-between space, providing more opportunities for the individual with regards to social interaction and learning than the static wall would.

The diagram on the opposite page shows diagrammatically how the architectural skin can be incorporated in the learning environment:



Image from: www.riko-hise.si



Image from architekten24.de



Image from www.openbuildings.com, 2011. Photo: Miran Kambic.



Image form (Falkenberg, 2008, p. 113)

Different interactive skins types – case studies:

After I have done an investigation into the theory and relevance of the interactive skin, I had to see how interactive/movable systems have been implemented in other built projects. Different material usage was also of interest to me. The following three buildings have been analysed:

Jure Kotnik Architecture, Kindergarten Kecec

Hascher Jehle Architectur, LSV Landshut

Steven Holl, NYC Galleria Shop Front

From the examination of three different types of building skins the Steven Holl case study with the solid one-shell interactive facade was the most appropriate type of interactive system and material choice for the specific site and climate of Cape Town. This case study is a very inspiring precedent for learning environments, and with the use of additional materials such timber and glass this interactive wall system can surely help to create exciting and more functional learning environments.

The warmth of timber, as in the Kecec kindergarten, and natural daylight of glazed components, as in the LSV building, are needed in Steven Holl's facade for the interactive system to work well in the new learning environment.



Image from www.flickr.com. Author unknown. 2007



Image from www.stevenholl.com

Image from designingyen.wordpress.com

It is clear to see in this picture that the system can allow for different seating and working spaces, among other possibilities.



Image from 2011.think-space.org

Adding colour to the skin can make it even more interesting for children.

Different interactive skins types – case studies:

Project Information:

Name: Storefront for Art and Architecture
Architect: Steven Holl (architect) with Vito Acconci (artist)
Construction system: Vertical and horizontal hinge connections

The series of hinged panels are arranged in a puzzle-like configuration which stimulates curiosity of people. This interactive façade, with 10 different sized pivoting panels, have enabled curators to use the architectural skin as doors, windows, seating and shelves in endless combinations. (Holl, 1993) Each panel's unique shape, its relation to other panels, and open or closed condition creates, in effect, a different facade each day. This type of flexibility is also needed in learning environments.



Image from nyc-architecture.com



Image from nyc-architecture.com

“ ”

Steven Holl: “The interactive dynamic of the gallery argued for an inside-out façade... Hinged walls rotate on both axes, which allow some to become tables and benches. The body is linked to wall forms in the crude way that the shoulder is needed to push space out or pull it in. Rather than pure, minimal space, this space is crossbred. It can be exact and then suddenly change into dynamic combinatorial space...” Steven Holl, 2000 (nyc-architecture.com)



Images from nyc-architecture.com

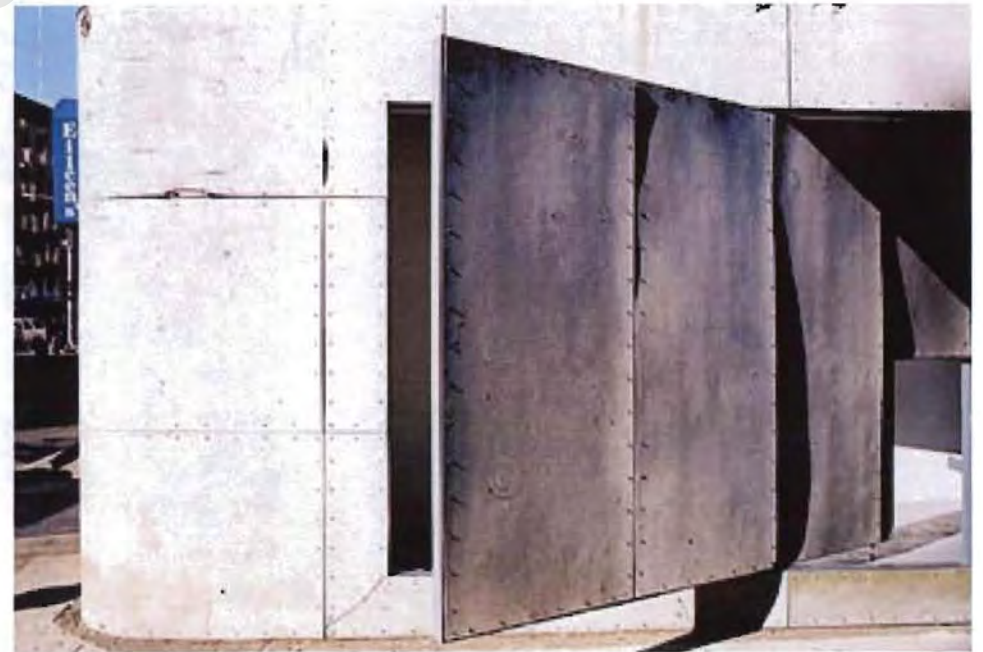
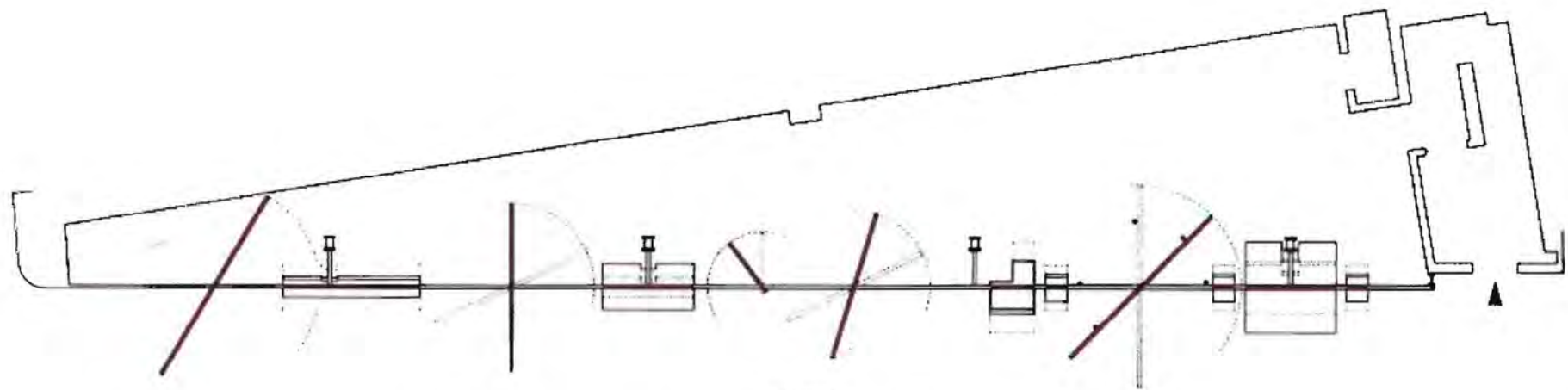


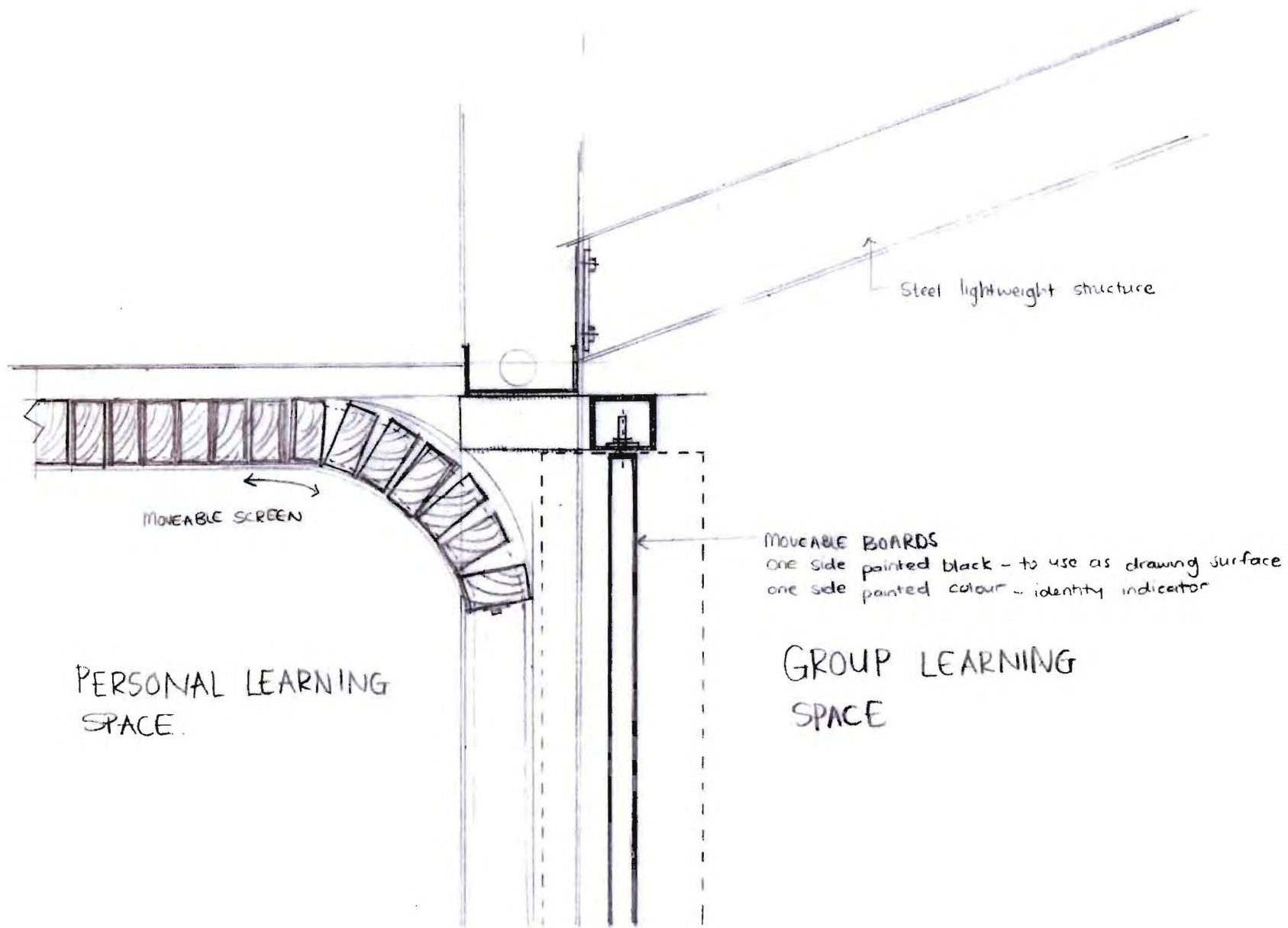
Image from www.flickr.com, taken by Hager Stier, 2007.



pianta/*plan*

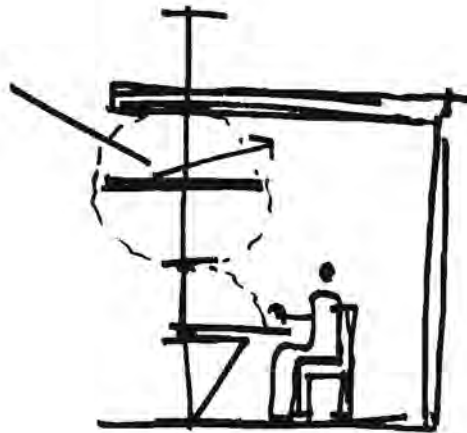
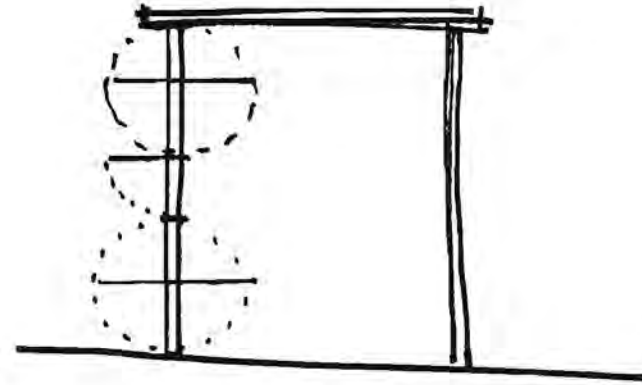
in colore i pannelli basculanti secondo assi verticali e orizzontali/*in colour the vertically and horizontally tilting panels*

Floor plan from Abitare, Nov 1994. Vol.334, p.190.



Conclusion:

By designing for kinaesthetic learning processes in spaces that are often disregarded by designers, such as the in-between spaces, architectural design and technology can bring about a change and make learning environments more learner-friendly, sustainable and stimulate interactivity which in the end can have a positive effect on the users' well-being and performance within the building.



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CONCLUSION

The aim from the beginning of this MArch process was that this project would not only be another design for a school on a specific site, but a project that would critique how we are currently designing public schools and point out that our perceptions about learning spaces and specifically our production line mentality need to change.

What was inspiring and enriching about this process was to see that there are ways for architecture to be used as a means to create positive 'happy' places for people. Design and architectural knowledge can help to stimulate positive learning processes and encourage social interaction amongst people.

Valuable lessons were learnt from Rotraut Walden's Schools for the Future, as well as from the two well-known architects, Hans Scharoun and Herman Hertzberger, but there is still much more to be learnt and to be discovered as to what makes up successful learning environments.

The value of this project lies in that it can be used as a model that shows what can happen on the rest of the Zonnebloem Estate, how other community buildings within District Six can be given new life and be integrated within the existing and new community, as well as showing how other new public schools in the rest of Cape Town can be designed.

Furthermore, this project shows that by integrating an interactive wall/skin system within the learning environment, it can help to activate the process of learning as well as help in making schools fun and exciting places to be at. An interactive system can also be applied to existing school buildings and so rejuvenate the old...

The lessons learnt from this project have sparked new thoughts and ideas for future projects. This was an intriguing journey and I have enjoyed it thoroughly.

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APPENDIX

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Special thank you

A special thank you to the following experts for their advice, time and support during the year:

Nic Coetzer
Jo Noero
Anya van der Merwe
Ryan van der Vyver
Noel Botha

University of Cape Town

University of Cape Town

Major Role Players:

Western Cape Education Department (WCED)

- Written permission
- Questionnaire, interview questions, research proposal
- Interview with Deputy Director for Infrastructure and lived in old District Six (Ismail Jakoet)
- WCED Accommodation Schedule

Provincial Government of the Western Cape (PGWC)

- Specialist Architect – Works: Education (thanks to Kobus Stofberg)
- Plans of Walmers Estate Primary School

Walmer Estate Primary School

- Interview with the principal
- Questionnaires filled in by staff and learners (wish list for the school)
- Newspaper articles and photos

Zonnebloem Estate Care Takers

- Ivan (current care taker and lived in old District Six)
- John Ramsdale (ex-care taker and also lived in Old District Six)

Newspaper articles and historic images

- SAHRA (South African Heritage Agency)



Directorate: Research

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APPLICATION TO CONDUCT RESEARCH IN
PUBLIC SCHOOLS WITHIN THE WESTERN CAPE

Dear Mr Sir/Madam

Before research can be approved the following must be provided:

1. Concise description of the research project/proposal.
2. If questionnaires/interviews/tests are to be used in the investigation, copies of such questionnaires/structured questions/test questions to be provided.
3. A letter from your supervisor/project head must accompany the application stating that you are registered at a tertiary institution (for students only).
4. The names of the departmental institutions (schools) where the research will be conducted.
5. Who are the Respondents (i.e. learners, parents, educators, etc.)?
6. The period during which the research will be conducted.
7. **No research can be conducted during the fourth term (October – December) as schools are preparing and finalizing syllabi for examinations.**
8. Approval for projects should be confirmed by the District Director of the schools where the project will be conducted.
9. Complete the Research Application Form (attached with letter).

The above information can be faxed or e-mailed. If further assistance is needed, please contact Dr Audrey Wynngaard, telephone number 021 467 9272, e-mail audrey.wynngaard2@pawc.gov.za

Yours in Education

Signed: A. T WYNGAARD
for: HEAD: EDUCATION
DATE: 17th January 2012

Lower Parliament Street, Cape Town, 8001
Tel: +27 21 467 9350 fax: +27 21 425 7445
Safe Schools: 0800 45 46 47

Private Bag X9114, Cape Town, 8000
Employment and salary enquiries: 0861 92
www.westerncape.gov.za

Applicant details			
Title:	Miss	Surname:	Botha
First name(s):	Lezanne	Gender:	Female
Name of organisation (directorate if WCED): University of Cape Town			
Telephone number: 021 976 7289 Cell number: 082 040 5401			
Fax number:	E-mail address:		zaanbotha@imweb.co.za
Name of institution: University of Cape Town			
Student number:	BTHLEZ001	Degree/ Diploma:	MArch
Supervisor's name: Jo Noero		Tel no of supervisor: 021 472 1840	
Year of registration:	2012	Year of completion:	2012
Specialisation:	Architecture	Faculty:	EBE - Built Environment
Title of research: The Architecture of Learning Environments - Woodstock/ District Six			
Research question: How can design and architectural knowledge inform the physical form/ structure and spatial dynamics of educational buildings in the Cape Town region so that these buildings can function as sustainable integrated community buildings which allow individuals to better their current situations by means of learning and therefore gaining more knowledge?			
Respondents: Principal, Educators and Learners			
Name(s) of education institution(s): Walmer Estate Primary School (Interview & questionnaire) Zonnebloem School(s) (photo study)			
Research period in education institutions:			
Start date:	28/03/2012	End date:	30/09/2012
Signature:	Date:		26/03/2012
FOR OFFICIAL USE ONLY			
Date approved:	Approved by:		
Reference number:			



REFERENCE: 20120326-0007

ENQUIRIES: Dr A T Wyngaard

Miss Lezanne Botha
Department of Architecture
UCT

Dear Miss Lezanne Botha

RESEARCH PROPOSAL: THE ARCHITECTURE OF LEARNING ENVIRONMENTS – WOODSTOCK / DISTRICT SIX

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Approval for projects should be confirmed by the District Director of the schools where the project will be conducted.
5. Educators' programmes are not to be interrupted.
6. The Study is to be conducted from **28 March 2012 till 28 September 2012**
7. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
8. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
9. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
10. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
11. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
12. The Department receives a copy of the completed report/dissertation/thesis addressed to:

**The Director: Research Services
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000**

We wish you success in your research.

Kind regards.

Signed: Dr Audrey T Wyngaard

for: **HEAD: EDUCATION**

DATE: 28 March 2012

Interview questions:

Walmer Estate Primary School – Principal/ Head of Department

History and heritage:

1. What is the history of the school?
2. Who constructed and designed the building?
3. How did it change over the years?
4. How has educational policy influence the way of teaching and the specific space requirements for it?
5. How did the forced removals of District Six influence the school?
6. Does the school have heritage value? And would one need to have a permit to make changes to the building?

Community and community facilities:

1. What is the culture of the surrounding community and what is the culture of the learners?
2. Community demographic: Age? What do most people do for a living? (Jobs)
3. Is Walmer Estate Primary on the government's resource targeting list? School poverty score – measure of immediate community?
4. Are there shared facilities that the school and the community use? I.e. sport fields, art centre, library, etc.
5. What and where are the community facilities within the area?
6. Is there a link between the school and a church? (Mission school history of District Six)
7. Do people from the community use any of the school facilities? The hall?
8. How involved are the parents with the school and education of the learners?
9. Safety and security? Are there crime and gangs within the area? Good and bad?

Transport:

1. Where do most of the learners and staff come from?
2. Mode of transport: Taxis, bus, train, IRT system, private, bicycles?
3. On average how long does it take learners to get to school in the morning and vice versa in the afternoon?
4. What is the cost of travelling for learners from further away? I.e. Langa, Nyanga, Khayelitsha, etc.

Existing context:

1. What works well in the school and what are problems?
2. Curriculum and its required facilities?
3. Classroom size? Noise? How many entrances? Colour? Light? Ventilation? Social/gathering spaces? Inclusive design? (LSEN)
4. Wind, slope and De Waal Drive?
5. How does the school deal with different age groups? Bullying?
6. Is there a need to physically connect Walmer Estate Primary to other school/community buildings in the area? I.e. Zonnebloem school or Walmer Estate Secondary.
7. Is there a sustainable management plan for ICT usage in the school?

Future of the school:

1. Need for expansion: Would you say extension of existing building or a completely new school building?
2. If development in District Six takes place, i.e. new housing development, would this affect the school? Would more classrooms be needed?
3. What is your opinion on the following aspects and/or would you say it is needed for the successful educational development of the school learners?
 - Counselling rooms
 - Science laboratory (Dinaledi schools)
 - More sport facilities (Gymnasium)
 - Inclusive design – Learners with special educational needs? Grade R?
 - Idea of a food garden where learners learn about agriculture and the fruit and vegetables can be used to feed the learners. Animals on the school ground?
 - New technology: changing curriculum, interactive learning tools.
 - Does your school make use of online information? I.e. the Thutong Education Portal?
 - Informal learning spaces. Outside amphitheatre? Outside classrooms?
 - Materiality. Timber, brick, steel, IBR sheeting, concrete?
 - Double storey. Multiple levels.
 - Building as a landmark.
 - Is the school on the NEIMS (National Education Infrastructure Management System, previously School Register of Needs) list?

Others:

What do others think of Walmer Estate Primary? Who are the major role players in the education and the built environment of the school?

- Learners
- Staff
- Government/ District Six committees
- Funders
- Heritage

Additional:

Questionnaire for learners and staff.

Table 1: WHAT DO YOU THINK OF THE SCHOOL FACILITIES?

QUALITY	GOOD	AVERAGE	NOT SURE	POOR
Classrooms				
Playing grounds				
Bathrooms				
Sport fields				
Library				
Computer lab				
Entrance				
Hall				
Circulation spaces				
Storage spaces				

Table 2: COMFORT IN CLASSROOMS AND CIRCULATION AREAS?

WHEN	SUMMER MORNING	SUMMER AFTERNOON	WINTER MORNING	WINTER AFTERNOON
Hot				
Cold				
Good temp. °C				
Noise				
Windy				
Wet (rain)				

Table 3: GENERAL QUESTIONS

	YES	NO	WHY?
Do you like your school building?			
Would you mind if other people of the community make use of your classrooms in the evening i.e. for adult classes?			
Would you mind if the local government make use of your school building at times outside of school teaching hours?			
Will you or your parents be willing to pay a higher school fee for better facilities?			
Do you feel the school has enough playing and social areas?			
Would you like your school to have a physical			

link (i.e. a pathway) that connects it to surrounding buildings or fields: i.e. Zonnebloem school, sport fields, secondary school, art centre?			
Would you like your school to have a roof garden?			

Table 4: In order of preference what facilities/resources do you think would be required to improve your learning environment and make the school a better place for you? Use numbers 1 – 5. 1 being the top priority. Only choose 5.

	NUMBER 1-5
More computers (digital textbooks)	
Food (one meal a day)	
Food garden and animals in the property	
Laboratory equipment (Science)	
Lockers	
Individual learning spaces	
Outside stage-like/ amphitheatre spaces	
Improved car park	
Teachers	
Sport fields	
Excursions	
School bus	
Café/ Hall/ Cafeteria	
Insurance	
Seminar room	
Audio visual/cinema room	
Shop (i.e. display and or sell things such as artworks that are made within the school)	
Textbooks	
Library	
Furniture	
Stationary	
Safety and security	
Playgrounds	
Better classrooms	
Roof garden	

Table 3: ANY GENERAL COMMENTS

ACCOMMODATION SCHEDULE FOR PRIMARY SCHOOLS

REQUIRED ACCOMMODATION

Amended : 04-06-2008

SPACE USE CATEGORY	UNIT	NO. OFF	AREA / UNIT	TOTAL AREA IN SQUARE METRE (m ²)	AS PER WCED REQUIREMENTS	
LEARNERS		1120				
1 BUILDING(S)						
2 ADMINISTRATION:						
3 Secretary's Office	Rooms	1	9.00	9.00		
4 Principal	Rooms	1	15.00	15.00		
5 Vice-Principal	Office	2	12.00	24.00		
6 Record Room	Rooms	1	9.00	9.00		
7 Safe	Rooms	1	3.00	3.00		
8 Staff Room & Tea Kitchennette	Rooms	1	44.00	44.00		
9 Sick Room & Toilet	Rooms	1	6.00	6.00		
10 General Store	Rooms	1	12.00	12.00		
11 Book Store	Store	1	12.00	12.00		
12 Male Staff Toilets	Rooms	1	6.00	6.00	1 wc: 1 whb & 1 urinal	
13 Female Staff Toilets	Rooms	1	6.00	6.00	2 wc's & 1 whb	
14 Disabled Toilet	Rooms	1	3.00	3.00	1 wc & 1 whb	
15 Department Head & Offices	Office	3	12.00	36.00		
16 TEACHING FACILITIES:						
17 Foundation Phase Classroom	Rooms	10	60.00	600.00		
18 Intermediate Phase Classroom	Rooms	10	54.00	540.00		
19 Senior Phase Classroom	Rooms	8	54.00	432.00		
20 Prefab : Foundation Phase Classroom	Rooms	0	58.00	0.00		
21 Prefab : Intermediate Phase Classroom	Rooms	0	54.00	0.00		
22 Prefab : Senior Phase Classroom	Rooms	0	56.00	0.00		
23 Media Centre	Centre	1	72.00	72.00		

ACCOMMODATION SCHEDULE FOR PRIMARY SCHOOLS

REQUIRED ACCOMMODATION

Amended : 04-06-2008

SPACE USE CATEGORY	UNIT	NO. OFF	AREA / UNIT	TOTAL AREA IN SQUARE METRE (m ²)	AS PER WCED REQUIREMENTS	
24 Media Office / Store	Rooms	1	8.00	8.00		
25 Media apparatus store / workroom	Rooms	1	10.00	10.00		
26 Computer room	Rooms	1	60.00	60.00		
27 Handwork- / Art room	Rooms	1	70.00	70.00		
28 H/work- / Art store	Rooms	1	12.00	12.00		
29 Music Room	Rooms	1	70.00	70.00		
30 Music store	Store	1	12.00	12.00		
31 Forum	Learnings	1120	0.50	560.00		
32 Stage area		1	60.00	60.00		
33 Boys cloakroom		1	20.00	20.00		
34 Girls cloakroom		1	20.00	20.00		
35 Feeding Kitchen		1	18.00	18.00		
36 Food store		1	12.00	12.00		
37 ABLUTION FACILITIES:						
38 Junior Boys	Rooms	1	40.00	40.00	8 wc's & 3 whb	
39 Junior Girls	Rooms	1	40.00	40.00	8 wc's & 4 whb	
40 Senior Boys	Rooms	1	45.00	45.00	4 wc's, 4 whb & 8 urinals	
41 Senior Girls	Rooms	1	60.00	60.00	13 wc's & 7 whb	
42 Prefab : Junior Boys	Rooms	0		0.00		
43 Prefab : Junior Girls	Rooms	0		0.00		
44 Prefab : Senior Boys	Rooms	0		0.00		
45 Prefab : Senior Girls	Rooms	0		0.00		
46 Garden - / Sports equipment store	Store	1	12.00	12.00		
47 Caretaker	Rooms	1	12.00	12.00		
48 SUB-TOTAL : BUILDING AREA (excl. circulation and structure)				2,970.00		
49 CIRCULATION & STRUCTURE:						
50 Circulation Approximately (Note : Foyer is part of circulation area)		22.00%	653.40	653.40		
51 Structure Approximately		10.00%	297.00	297.00		
52 TOTAL BUILDING AREA (incl. Circulation and structure)				3,920.40		
53 SPECIAL SERVICES:						

ACCOMMODATION SCHEDULE FOR PRIMARY SCHOOLS

REQUIRED ACCOMMODATION		Amended : 04-06-2008		
SPACE USE CATEGORY	UNIT	NO. OFF	AREA / UNIT	TOTAL AREA IN SQUARE METRE (m ²)
		AS PER WCED REQUIREMENTS		
54	Electrical Installation	Item	1	
55	Steam Installation	Item	0	
56	Gas Installation	Item	0	
57	SITE WORKS & SERVICES			
58	SITE WORKS:			
59	Site Preparation, including stabilization of remainder of site not occupied by building structures or sportsfields	Site	1	20,000.00 20,000.00
60	Foot Paths (open)	Item	1	
61	Covered Walkways (covered walkways refer to covered links/passages/foot paths between buildings)	Item	0	
62	Aprons, 1 metre wide, Around Buildings	Item	1	
63	Open Parking	Parking Area	1	513.00 513.00
64	Access road from fence to parking area	Item	1	
65	Fencing	Metre	1	600.00 600.00
66	SITE SERVICES:			
67	Stormwater Drainage	Item	1	
68	Sewerage	Item	1	
69	Water Supply	Item	1	
70	Landscaping	Area	1	
71	SPORT FACILITIES:			
72	Concrete PT Slabs	Slabs	2	513.00 1,026.00
73	Levelled and stabilised sport surface	Sportsfield	1	4,500.00 4,500.00
74	Trees	Item	16	
75	Grassing	Area	1	350.00 350.00

SCHOOL PROFILE**PRIMARY SOURCE: MASTER LIST****INFRASTRUCTURE: LAST RELEVANT ANNUAL SURVEY**

EMIS	0103310379
Name	WALMER ESTATE PRIM.
Education District (Circuit)	METRO CENTRAL (02)
EMDC (Old Circuit)	Metropole Central (03)
Status	Open
Sector	ORDINARY
Control	PUBLIC
School Type	Primary School
District Council / Municipality	CITY OF CAPE TOWN / CITY OF CAPE TOWN
Magisterial District	CAPE
Physical Address	Cambridge Street, Walmer Estate, WOODSTOCK
Telephone	021-4476760
Fax	021-4470528
Email	weps@hotmail.co.za
2nd Email	admin@walmerestateps.wcape.school.za
Principal	MR. M. I. KAMISH
Principal Mobile	0825740845
Instruction Rooms	13 (Ratio: 23.5)
Classrooms	12 (Ratio: 25.5)
Quintile / No Fee School	Q5 / No
Ave Annual School Fee per Learner (Gr1-12)	R 790.00
Section 21	No
Ex Dept	HOR
ISAMS School	Yes
Primary Language of Teaching	English
Electricity Status	
Water Status	
Wall Type	
Community Poverty Index	0.530657600 (Least Poor)
Per Learner Allocation	301
Total Allocation	82,173
ED Director	Barry Volschenk
Circuit Team Manager	Vanessa Minnaar
IMG Head	
IMG Manager	

STAFF ESTABLISHMENT**SOURCE: ANNUAL STAFF ESTABLISHMENTS**

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Staff Est: # Principals	1	1	1	1	1	1	1	1	1
Staff Est: # Deputies	0	0	0	0	0	0	0	0	0
Staff Est: # Dept Heads	1	1	1	1	2	2	2	2	2
Staff Est: # Educators	5	5	5	5	5	5	6	6	5
Staff Est: # Adhoc Posts	0	0	0	0	0	0	0	0	0
Staff Est: Total	7	7	7	7	8	8	9	9	8
Number of Learners	257	283	280	256	282	298	286	273	274
Additional Post Allocation	0	0	0	0	0	0	0	0	0

LEARNER NUMBERS PER GRADE (TOTAL1: GR1-GR12+LSEN TOTAL2: PREGRR-GR12+LSEN+PMATRIC)**SOURCE: SNAP SURVEY 2011**

GENDER	PREGRR	GRR	GR1	GR2	GR3	GR4	GR5	GR6	GR7	GR8	GR9	GR10	GR11	GR12	PMATRIC	LSEN	TOTAL1	TOTAL2
Female	0	12	36	26	22	23	18	16	16	0	0	0	0	0	0	0	157	169
Male	0	15	26	14	15	16	16	13	22	0	0	0	0	0	0	0	122	137
TOTAL	0	27	62	40	37	39	34	29	38	0	0	0	0	0	0	0	279	306
CLASS GROUPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ROOM TYPES**SOURCE: ANNUAL SURVEY 2010**

CLASSROOM	SCIENCELAB	SPECIALIST	WORKSHOP	COMPUTER	LIBRARY
12	0	0	0	1	0

SANITATION STATUS**SOURCE: LAST RELEVANT ANNUAL SURVEY**

FLUSH SEWER	FLUSH SEPTIC TANK	VENTILATED PIT	PIT BUCKET	NO SANITATION
0	0	0	0	0

PROJECTS AT SCHOOLS**SOURCE: DATA SUPPLIED BY DIRECTORATE MANAGING PROJECT**

PROJECTID	SUBPROJECTID
ISAMS	100 School Pilot
KHANYA	
LITNUM	METRO NUMERACY

PROMOTION RESULTS**SOURCE: PROMOTION SURVEY 2011**

Please note that the enrolment in this report refers to numbers as per CEMIS at the end of 2011.

This enrolment will differ from the enrolment as per Annual Survey 2011.

CATEGORY		GRR	GR1	GR2	GR3	GR4	GR5	GR6	GR7	GR8	GR9	GR10	GR11	LSEN	TOTAL
TOTAL ENROLLED	Male	17	27	14	15	16	16	13	22	0	0	0	0	0	140
	Female	10	34	25	22	24	20	17	17	0	0	0	0	0	169
Total		27	61	39	37	40	36	30	39	0	0	0	0	0	309
PROMOTION	Male	17	22	12	15	11	16	13	22	0	0	0	0	0	128
	Female	10	30	23	21	22	20	17	17	0	0	0	0	0	160
Total		27	52	35	36	33	36	30	39	0	0	0	0	0	288
TOTAL PROMOTIONS	Male	17	22	12	15	11	16	13	22	0	0	0	0	0	128
	Female	10	30	23	21	22	20	17	17	0	0	0	0	0	160
Total		27	52	35	36	33	36	30	39	0	0	0	0	0	288
%		100.00	85.25	89.74	97.30	82.50	100.00	100.00	100.00	.00	.00	.00	.00	.00	93.20
MORE TIME NEEDED	Male	0	5	2	0	5	0	0	0	0	0	0	0	0	12
	Female	0	4	2	1	1	0	0	0	0	0	0	0	0	8
Total		0	9	4	1	6	0	0	0	0	0	0	0	0	20
%		.00	14.75	10.26	2.70	15.38	.00	.00	.00	.00	.00	.00	.00	.00	6.49

GRADE 3 COMPETENCY**SOURCE: GR3 LEARNER COMPETENCY 2011**

Numeracy	Grade 3	
	Ave Mark %	Pass %
School: WALMER ESTATE PRIM.	32.6	13.9
Circuit: 2	49.3	52.9
ED: METRO CENTRAL	48.9	51.7
Province: Western Cape	46.3	47.2

Literacy	Grade 3	
	Ave Mark %	Pass %
School: WALMER ESTATE PRIM.	29.0	13.9
Circuit: 2	44.3	39.9
ED: METRO CENTRAL	42.1	36.6
Province: Western Cape	38.7	30.4

Assessment	2010	2011	Difference	Results
Numeracy Results	35.1	13.9	-21.2	Substantial decrease
Literacy Results	51.4	13.9	-37.5	Substantial decrease

GRADE 6 COMPETENCY

SOURCE: GR6 LEARNER COMPETENCY 2011

Literacy	Grade 6	
	Ave Mark %	Pass %
School	40.0	26.7
Circuit: 2	45.7	40.7
District: METRO CENTRAL	44.4	38.3
Province: Western Cape	40.9	31.5

Numeracy	Grade 6	
	Ave Mark %	Pass %
School	43.7	30.0
Circuit: 2	43.5	35.5
District: METRO CENTRAL	41.7	31.7
Province: Western Cape	37.6	23.4

Assessment	2010	2011	Difference	Results
Numeracy Results	28.2	30.0	1.8	Minor Improvement
Literacy Results	25.6	26.7	1.1	Minor Improvement

POTENTIAL SITE: Place of Learning

Woodstock - Trafalgar Green Strip





Walmer Estate Primary

gets a helping hand

NAIVE CHRISTIANS

As drive down Cambridge Road, in Woodstock, by businessman Robert Berry, has helped a primary school in more ways than one.

Mr Berry's company, Berry and Donaldson, adopted the school as part of its social upliftment programme. Now the school boasts a renovated hall, which was officially opened last week.

According to Lance Reuter, who taught there for seven years and who is one of the teachers who spearheaded the renovation, Mr Berry was driving in the neighbourhood when he noticed children who attend the school. He then did some research finding out everything he could about Walmer Estate Primary.

"He went on the internet and then contacted the principal, Idress Kamish, in December 2008 and wanted to know what we needed," said Mr Reuter, who now teaches at another school.

At that stage the school hall was in dire need of renovation.

"The building was extremely dilapidated. It was used as a Grade 7 classroom but it wasn't fit for use.

At one stage, one whole section of the wall was blown over and we had no roof and none of the windows was working.

"Because the wall was broken, we had a lot of break-ins and people stole the copper fittings," said Mr Reuter.

But these problems are now a thing of the past.

Mr Berry, who was not at the opening, was represented by members of his company.

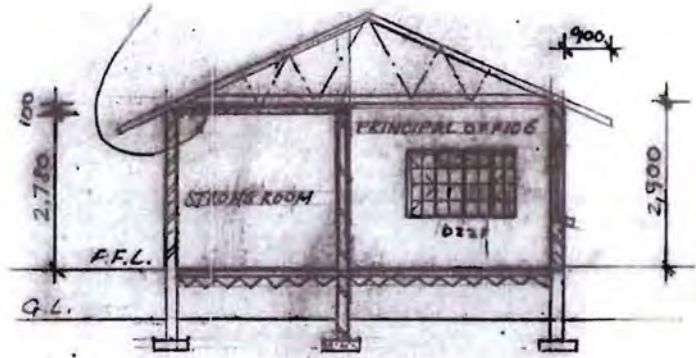
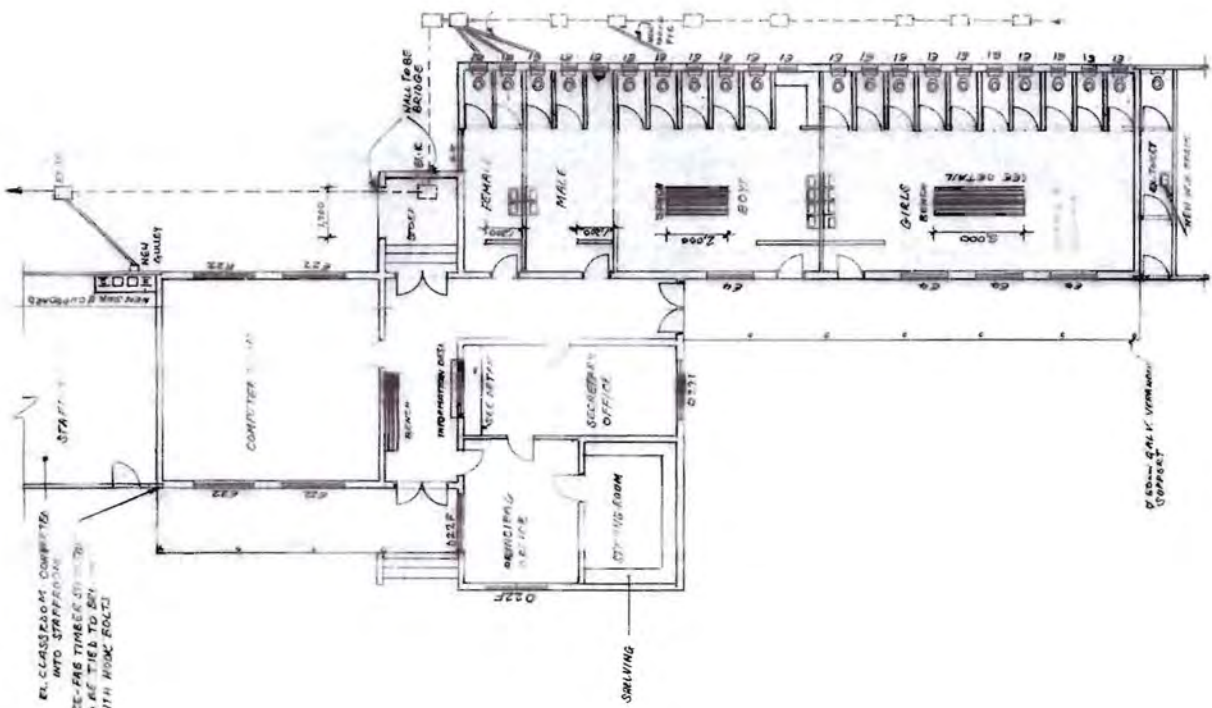
Simon Williams, marketing manager, said they had always supported charities but "on a very ad hoc basis".

"This time we decided to focus on one cause and we chose the school. We also provided it with computer equipment and a container for storage," said Mr Williams.

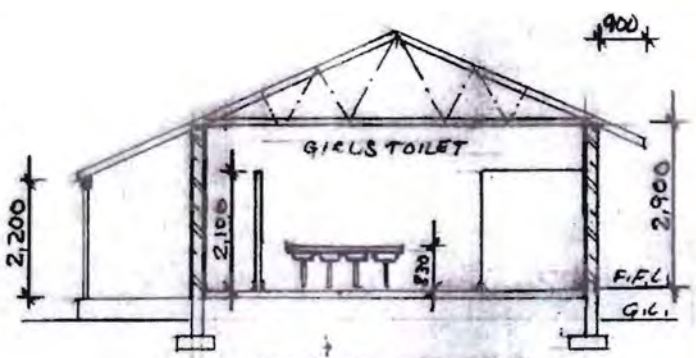
"We have an ongoing commitment to assist the school where we can, and we intend to help in the future."

Repairs to the hall amounted to R45 000 and Mr Kamish said he was thankful for all the help received.

"The hall itself is a much needed venue for us. We use it for meetings, sports programmes and gatherings," he said.



SECTION A-A



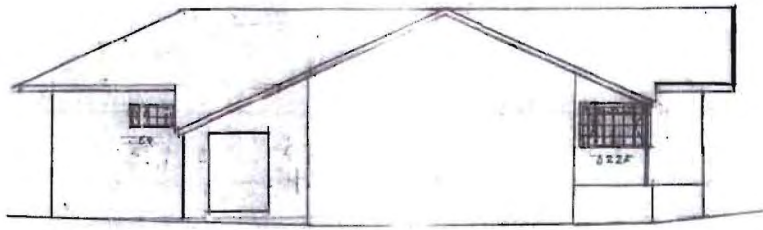
SECTION B-B



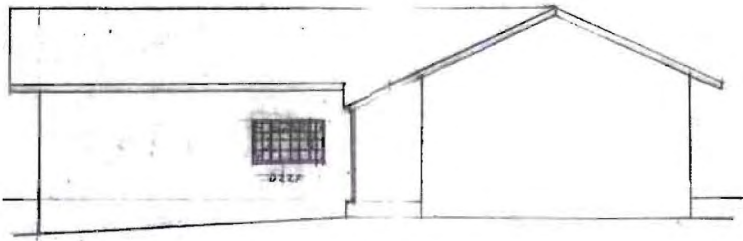
■ The Walmer Estate Primary School hall.

Mr Reuter added: "When I dreamt of when I started there, I am seeing one of my dreams come to fruition."

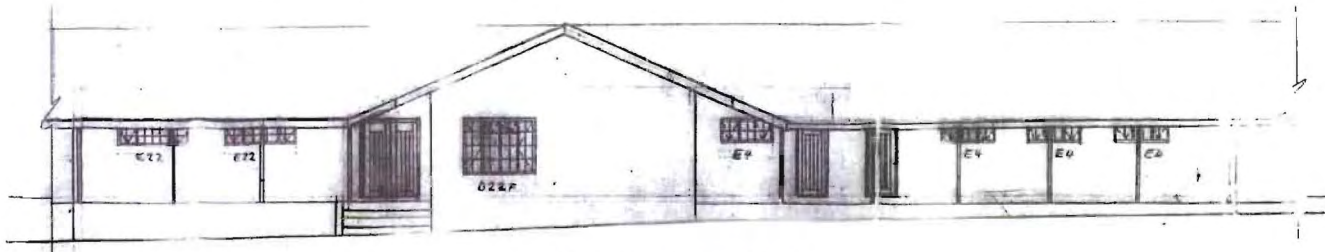
● The school has 30 teachers who come from outside Woodstock.



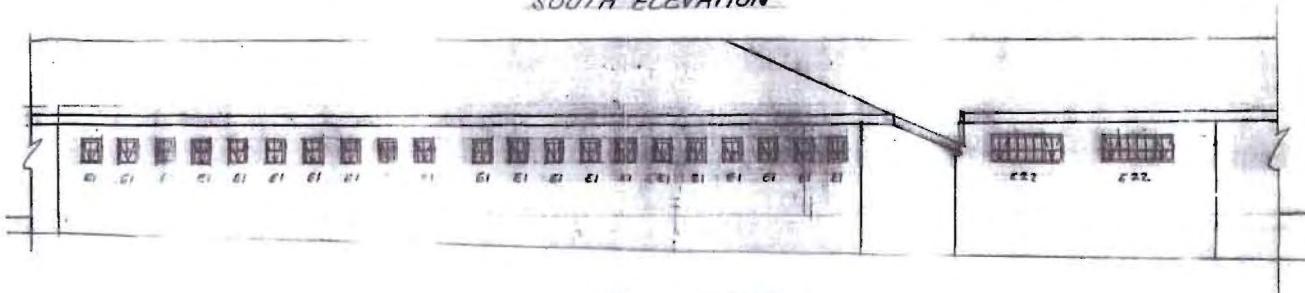
WEST ELEVATION



EAST ELEVATION



SOUTH ELEVATION



NORTH ELEVATION



STAFF 2012

PRINCIPAL

M.I. KAMISH

SECRETARY

Z. ABRAHAMS

EDUCATORS

GRADE	EDUCATOR	ROOM
R	Mrs C. Heuvel	11
1	Ms S. St Jerry	10
2a	Mrs V. Pavitt	8
2b	Ms H. Nyamajiwa	9
3	Ms D. Everts	7
4	Mrs L. Maliti	3
5	Mr T. Titus	5
6	Mrs I. Reuter	1
7	Mr L. Reuter	2
LSEN	Mrs N. Mboniswa	Hall

FOREMAN

Mr N. Salie

New Library

LIBRARY PROJECT AT WALMER ESTATE PRIMARY

Tuesday 8 March 2011 was a very special day at Walmer Estate Primary School (WEPS). We had special visitors at school from the **Waterfront Rotary Club**: Michelle Whitehead, David Catling, Jenny Howard and Karin Lawrenz. They came to administer the induction of our very own Early Act Club at WEPS Primary. Mr Edrees Diedericks of **Berry and Donaldson** also attended, since we awarded 26 learners with Behaviour and Academic Bursaries – sponsored by them.

After all formalities were concluded, we discussed some of the needs of the school. Ms Howard then proposed to assist us in obtaining a container, which would be developed into a **school library**. We obviously welcomed this suggestion, since we do not have a library; neither do we have any spare rooms to use towards such a development. Mr Catling took it upon himself – our school's liaison with WRC - to see that this idea would become a reality.

After a number of further meetings with the WRC and myself, they finally managed to secure a container for our school. This was delivered to our school on 6 June 2011.

David and his team then started to investigate the costs involved in turning this huge steel box into a library. He would often visit me to discuss proposals, developments and the astronomical costs involved in realizing this project. He always assured me not to worry, since "we (WRC) will find the necessary funds..."

To us just having a group of people thinking about us and trying their best to make a difference was already wonderful – since we've become so used to asking and begging for donations and assistance, that we've decided to stop sending hundreds of letters to companies in order to get some funds to keep the school going.

The day when the (would be library) container was delivered to WEPS was a great day. This was the day that our dream of one day having a real library for the benefit of all the (disadvantaged) learners at our school (who are mostly from Khayelitsha, Cross Roads, Langa and Gugulethu) would become a reality. We were all very excited at this prospect.

KHANYA SCHOOLS

Walmer Estate Prim



At the foot of Lion's Hill, within walking distance of Central Cape Town, with a view of the mountain and the ocean, lies Walmer Estate Primary. Like the area in which it is situated, the school has undergone demographic changes. What started as a preparatory school rapidly evolved into a full primary school that caters for learners from impoverished areas such as Khayelitsha, Nyange, Langa, Cross Roads and Philippi. Only a small percentage of learners are drawn from the immediate vicinity of the school.

Walmer Estate Primary is not new to the world of technology. They received a Tuxlab from the Shuttleworth Foundation in 2005. Here their learners were able to receive the necessary exposure to technology, but the Tuxlab has many limitations and real technology integrated curriculum delivery has never been a reality.

A Khanya computer laboratory will address this need. The Tuxlab has been relocated and initial hurdles like an inadequate electricity supply have been addressed and a Khanya computer laboratory has been installed.

Educators and learners at Walmer Estate Primary are extremely excited about their new computer laboratory. Educators are particularly enthused about the training they will now receive, both in general computer literacy and in the use of the technology for curriculum delivery. They eagerly anticipate being able to manage all their administrative work electronically and being able to prepare interesting, relevant and interactive content to their learners.

Learners will hardly recognise the learning process when they get to the laboratory environment. Gone will be teacher 'chalk and talk', replaced instead with interactive, vibrant lessons that resonate with current information geared at their own individual level of ability.

Walmer Estate Primary has waited a long time and worked through many frustrations on their road towards technology. With the much dreamed of and hard worked for laboratory now installed it is up to the educators and learners to ensure that their dream of technology integrated education is brought to life.

School Details: (as at 2011-03-11)

Area:	Cape Town
Language:	English
Project Stage:	Curriculum delivery
Type:	Primary School
Number of PCs:	26
Educators:	11
Learners:	309
Learner/PC Ratio:	12:1
Facilitator:	Tim Mulangaphuma



Educators undergo training with Khanya facilitator



The laboratory is already having a huge impact on learning!

Basic Information

Founded

1957

Location

Cambridge Street, Walmer Estate, 7925 Cape Town, South Africa

Description

VISION STATEMENT

We at Walmer Estate Primary School, are committed to create a warm, friendly and safe environment which is conducive to the promotion of positive growth and the holistic development of all our learners and staff. We shall strive to equip our learners with critical thinking and entrepreneurial skills so that they can contribute to the upliftment of society.

Mission

MISSION STATEMENT

1. Implement the outcomes based curriculum according to departmental policy – in order to serve and develop the varied talents of our learners.
2. Provide opportunities for staff development in support of management and the delivery of the curriculum expectations.
3. Establish additional policies, procedures and structures that would support the teaching and learning process in a safe, warm environment.
4. Encourage involvement from parents and interested individuals to aid our programmes at school in order to ensure steady growth and development.

University of Cape Town

Heritage Assessment of Walmer Estate Primary School:

Information from drawings and interview

Context:

Walmer Estate Primary School was designed and constructed in the old District Six area (now Woodstock/ Zonnebloem) in 1957 by the Cape Provincial Architect's Department soon after the beginning of Apartheid*. It was designed as a prefabricated preparatory school building. The same building structure is now used as a primary school.

The intention of the architect of the government was to design a low-budget school with only the basic spaces required for teaching. No hall, administration area, separate staff bathrooms, multi-use facilities, library, informal learning and self-study spaces were initially designed or proposed for the school or even part of the future plans.

**Note: The National Party, which was the ruling party of Apartheid, was elected in 1948.*

What is the history of the school?

7 709.78 m² (77 770 Cape Feet²) of the Zonnebloem land, Erf 592, owned by the Anglican Church have been leased to the Provincial Administration (Government) in 1956 as an area designated for the Zonnebloem Coloured Preparatory School site. There seemed to have been various names for the school building: Cape Zonnebloem Coloured Preparatory Prefabricated School and/ or Walmer Estate Preparatory School. By 1977 the name of the school is indicated as Walmer Estate Primary School for Coloureds. Now the school is known just as Walmer Estate Primary School.

Who constructed and designed the school?

The initial plan for the school was drawn up by an architect of the Provincial Architects Department - Cape Provincial Administration in 1956. Presumably it was also constructed by the Cape Provincial Administration. It was constructed as a prefabricated school and so far it is unclear if there were any plans of making it a more permanent structure. The school was established in 1957.

How did it change over the years?

Over the years the school have changed from a preparatory school to a primary school.

1956

Two small buildings indicated on the land leased to Provincial Administration. These seemed to have been demolished when the school was built.

1957

Initially the school was designed with 10 classrooms, 3 store rooms, a staff room, principal's office, a kitchen, and separate boys and girls bathrooms. (No hall, admin area, separate staff bathrooms, multi-use facilities, library, informal and self-study spaces). A covered stoep were built on the north-west side of the building. This stoep was built with a brick base and a concrete floor.

1960

Two additional prefabricated classrooms: a kindergarten classroom and a primary classroom were added. Earth had to be excavated. The drawing indicates that these two classrooms were designed with folding partitions that separate them in order to open them when more open space is required.

1977

A drawing indicates that the fencing was replaced in this year. It is suspected that two extra classrooms were proposed and built around this time,

as there is no date on the drawing. These classrooms were built separately from the rest of the building.

1982

Repairs and renovations were done to the prefabricated classrooms built in 1960.

2001

Fire destroyed the bathrooms, principal's office, the staff room, kitchen, and a store room around 2000/2001. This part of the building was rebuilt with a more permanent wall structure i.e. facebrick. These new spaces included new male and female staff bathrooms, a secretary's office, a new principal's office, a store room, girls and boys bathrooms, a front stoep, information desk and a computer room. An existing classroom was converted to a staff room. Another kitchen was not built.

2008

The hall, which was the converted classrooms that were constructed around 1977, were destroyed by fierce winds. In 2009 the hall was replaced by the sponsorship of Berry & Donaldson company. It is now a multi-functional hall which can be used as a classroom, extramural activities and for meetings. The school also received another container for storage from this company.

2011

Walmer Estate Primary School received a container from the Waterfront Rotary Club and this is currently being changed into a habitable library space.

University of Cape Town

Post Occupancy Evaluation – summarized information from interviews, questionnaires and site visits*:

Post occupancy evaluation of WEPS made it clear that the physical built spaces are not working well for the users. First of all, the school does not offer spaces that can be easily appropriated by individuals; basically the only evidence of appropriation is the painted graphics on the tarmac surface adjacent to the circulation area.

Secondly, problems with the existing structure, especially with the prefabricated classrooms, are such that it does not offer enough thermal insulation, noise protection, passive heating in the winter and passive cooling in the summer; there is also not enough natural daylight entering the spaces, and it will be difficult to adapt or to extend from the existing design and structure, among many other problems.

From the questionnaires, 70% of the children indicated that there is not enough social space and 95% of them want improved links between Zonnebloem Estate, the art centre and WEPS. This clearly shows that the school is not functioning as an integrated community building and that it is completely disconnected from its surrounding context. Additionally, most children feel that the bathrooms are designed poorly, that it does not function well and is not age appropriate. Recently the school, with the help of an NGO, have converted a classroom that was used as a staff room to a computer lab. All the children that filled in the questionnaires were happy about this as they can now learn and do more with the help of computers.

Furthermore, part of the questionnaires was

that the children had to identify from a 'wish list' what is most important or most needed for them in the school environment – from this list most children identified that they want lockers, better classrooms, a school bus, sport fields, safety and security, and more computers (digital textbooks).

Having conducted an interview with the principal and through questionnaires filled in by learners, staff and School Governing Body (SGB) members as well as information from the theoretical and technical research I have done, the most feasible option to improve current learning conditions and to integrate the community of Walmer Estate and old District Six would be to design and construct a complete new school building. Therefore this thesis will look at redesigning the public primary school (WEPS) as a critical means to evaluate and propose new thoughtful improved ways of designing learning environments and aim to provide solutions/recommendations for the above mentioned problems.

**Note: See appendix for more information.*

Table 1: WHAT DO YOU THINK OF THE SCHOOL FACILITIES?

QUALITY	GOOD	AVERAGE	NOT SURE	POOR
Classrooms	10 +1	16 +5		3 +4
Playing grounds	13	7 +5	8 +1	1 +4
Bathrooms		2	5	21 +10
Sport fields	16	3	5 +2	4 +8
Library	11	5	13 +7	+3
Computer lab	29	+8	+1	+1
Entrance	8	15 +4	6	+6
Hall	14 +1	14 +7	1 +2	
Circulation spaces		12 +1	16 +1	1 +8
Storage spaces	6	5	4 +1	14 +9

Table 2: COMFORT IN CLASSROOMS AND CIRCULATION AREAS?

WHEN	SUMMER MORNING	SUMMER AFTERNOON	WINTER MORNING	WINTER AFTERNOON
Hot	15 +7	26 +10	2	2
Cold	1	1	23 +9	10 +7
Good temp. °C	12 +4	13 +1	3 +1	4
Noise	1 +4	9 +2	2 +1	3 +1
Windy	+9	1 +7	15 +8	16 +7
Wet (rain)	+2	+3	15 +6	15 +7

Table 3: GENERAL QUESTIONS

	YES	NO	WHY?
Do you like your school building?	24 +4	5 +7	
Would you mind if other people of the community make use of your classrooms in the evening i.e. for adult classes?	14 +2	15 +8	
Would you mind if the local government make use of your school building at times outside of school teaching hours?	9 +2	13 +7	
Will you or your parents be willing to pay a higher school fee for better facilities?	20	9 +8	
Do you feel the school has enough playing and social areas?	7	21 +9	
Would you like your school to have a physical	27	2	

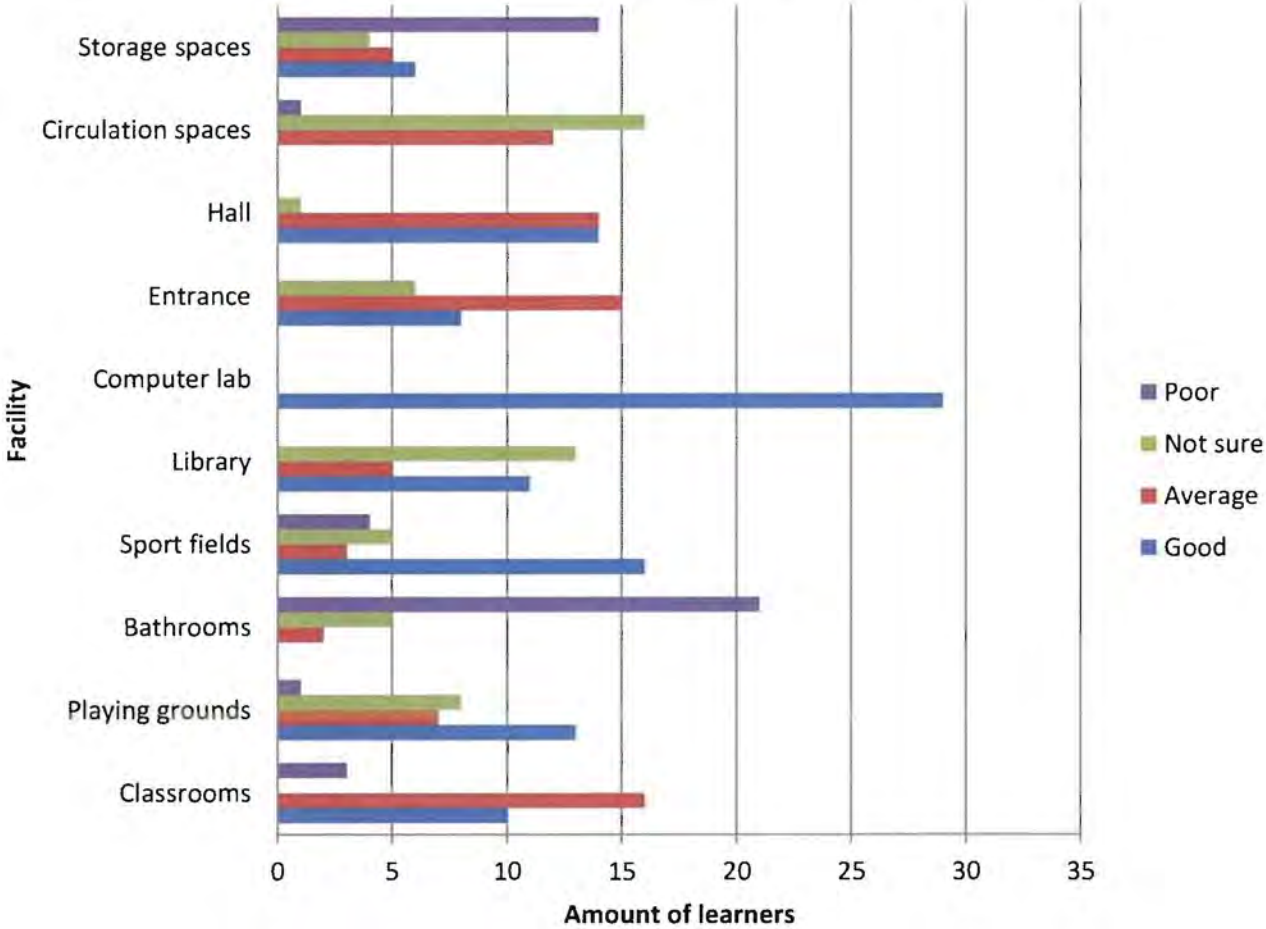
link (i.e. a pathway) that connects it to surrounding buildings or fields: i.e. Zonnebloem school, sport fields, secondary school, art centre?	+10	+1	
Would you like your school to have a roof garden?	7 +2	21 +8	

Table 4: In order of preference what facilities/resources do you think would be required to improve your learning environment and make the school a better place for you? Use numbers 1 - 5. 1 being the top priority. Only choose 5.

	NUMBER 1-5
More computers (digital textbooks)	121333443445131
Food (one meal a day)	22115
Food garden and animals in the property	2
Laboratory equipment (Science)	31155131115
Lockers	5251334441451212111423
Individual learning spaces	35
Outside stage-like/ amphitheatre spaces	52
Improved car park	44352334
Teachers	212311
Sport fields	344442233332253534
Excursions	4114
School bus	43111254223342225422
Café/ Hall/ Cafeteria	35253425
Insurance	421
Seminar room	3
Audio visual/cinema room	154435554
Shop (i.e. display and or sell things such as artworks that are made within the school)	
Textbooks	455411211
Library	521111
Furniture	522
Stationary	23
Safety and security	23231114454311
Playgrounds	533
Better classrooms	555544222554511541
Roof garden	

Table 3: ANY GENERAL COMMENTS

School Facilities



QUESTIONNAIRE FOR LEARNERS

Table 1: WHAT DO YOU THINK OF THE SCHOOL FACILITIES?

QUALITY	GOOD	AVERAGE	NOT SURE	POOR
Classrooms		✓		
Playing grounds	✓			
Bathrooms			✓	
Sport fields	✓			
Library			✓	
Computer lab	✓			
Entrance		✓		
Hall	✓			
Circulation spaces			✓	
Storage spaces			✓	

Table 2: COMFORT IN CLASSROOMS AND CIRCULATION AREAS?

WHEN	SUMMER MORNING	SUMMER AFTERNOON	WINTER MORNING	WINTER AFTERNOON
Hot	✓	✓		
Cold			✓	✓
Good temp. °C		✓		
Noise		✓	✗	✓
Windy			✓	✓
Wet (rain)			✓	

Table 3: GENERAL QUESTIONS

	YES	NO	WHY?
Do you like your school building?	✓		because they are busy renovating our school
Would you mind if other people of the community make use of your classrooms in the evening i.e. for adult classes?		✓	because if we don't let the people use our class they will say bad things about us
Would you mind if the local government make use of your school building at times outside of school teaching hours?		✓	because they would make a difference to our school
Will you or your parents be willing to pay a higher school fee for better facilities?	✓		because the extra fee will help extend our school and classes
Do you feel the school has enough playing and social areas?		✗	because we have a small property
Would you like your school to have a physical			

QUESTIONNAIRE FOR LEARNERS

link (i.e. a pathway) that connects it to surrounding buildings or fields: i.e. Zonnebloem school, sport fields, secondary school, art centre?	✓		Because our property will be much better
Would you like your school to have a roof garden?		✓	Because it is high maintenance

Table 4: In order of preference what facilities/resources do you think would be required to improve your learning environment and make the school a better place for you? Use numbers 1 - 5. 1 being the top priority. Only choose 5.

	NUMBER 1-5
More computers (digital textbooks)	
Food (one meal a day)	
Food garden and animals in the property	
Laboratory equipment (Science)	1
Lockers	2
Individual learning spaces	
Outside stage-like/ amphitheatre spaces	
Improved car park	3
Teachers	
Sport fields	5
Excursions	
School bus	4
Café/ Hall/ Cafeteria	
Insurance	
Seminar room	
Audio visual/cinema room	
Shop (i.e. display and or sell things such as artworks that are made within the school)	
Textbooks	
Library	
Furniture	
Stationary	
Safety and security	
Playgrounds	
Better classrooms	
Roof garden	

Table 3: ANY GENERAL COMMENTS

more sitting arrangements in the play ground.
Small toilets for the little ones.

QUESTIONNAIRE FOR LEARNERS

link (i.e. a pathway) that connects it to surrounding buildings or fields: i.e. Zonnebloem school, sport fields, secondary school, art centre?	<input checked="" type="checkbox"/>	Because it will be much more bigger.
Would you like your school to have a roof garden?	<input checked="" type="checkbox"/>	Because it it will be better if we can look after it every time.

Table 4: In order of preference what facilities/resources do you think would be required to improve your learning environment and make the school a better place for you? Use numbers 1 – 5. 1 being the top priority. Only choose 5.

	NUMBER 1-5
More computers (digital textbooks)	
Food (one meal a day)	
Food garden and animals in the property	
Laboratory equipment (Science)	
Lockers	1
Individual learning spaces	
Outside stage-like/ amphitheatre spaces	
Improved car park	
Teachers	
Sport fields	3
Excursions	
School bus	2
Café/ Hall/ Cafeteria	
Insurance	
Seminar room	
Audio visual/cinema room	
Shop (i.e. display and or sell things such as artworks that are made within the school)	
Textbooks	
Library	
Furniture	
Stationary	
Safety and security	4
Playgrounds	
Better classrooms	5
Roof garden	

Table 3: ANY GENERAL COMMENTS

We need a lot of sport equipment and clothes we need. Rugby, Netball, Soccer, Table Tennis, Printer, table and small tables for the gym 45 over 15
--

QUESTIONNAIRE FOR LEARNERS

Table 1: WHAT DO YOU THINK OF THE SCHOOL FACILITIES?

QUALITY	GOOD	AVERAGE	NOT SURE	POOR
Classrooms		<input checked="" type="checkbox"/>		
Playing grounds	<input checked="" type="checkbox"/>			
Bathrooms				<input checked="" type="checkbox"/>
Sport fields				
Library			<input checked="" type="checkbox"/>	
Computer lab	<input checked="" type="checkbox"/>			
Entrance			<input checked="" type="checkbox"/>	
Hall		<input checked="" type="checkbox"/>		
Circulation spaces			<input checked="" type="checkbox"/>	
Storage spaces				<input checked="" type="checkbox"/>

Table 2: COMFORT IN CLASSROOMS AND CIRCULATION AREAS?

WHEN	SUMMER MORNING	SUMMER AFTERNOON	WINTER MORNING	WINTER AFTERNOON
Hot	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Cold			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Good temp. °C			<input checked="" type="checkbox"/>	
Noise	<input checked="" type="checkbox"/>			
Windy			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Wet (rain)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Table 3: GENERAL QUESTIONS

	YES	NO	WHY?
Do you like your school building?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Because it is making our school representative
Would you mind if other people of the community make use of your classrooms in the evening i.e. for adult classes?	<input checked="" type="checkbox"/>		Because it helps this community.
Would you mind if the local government make use of your school building at times outside of school teaching hours?			
Will you or your parents be willing to pay a higher school fee for better facilities?	<input checked="" type="checkbox"/>		Because it gives us a better education
Do you feel the school has enough playing and social areas?	<input checked="" type="checkbox"/>		
Would you like your school to have a physical			

QUESTIONNAIRE FOR LEARNERS

Table 1: WHAT DO YOU THINK OF THE SCHOOL FACILITIES?

QUALITY	GOOD	AVERAGE	NOT SURE	POOR
Classrooms				✓
Playing grounds			✓	
Bathrooms				✓
Sport fields				✓
Library		✓		
Computer lab	✓			
Entrance		✓		
Hall		✓		
Circulation spaces		✓		
Storage spaces				✓

Table 2: COMFORT IN CLASSROOMS AND CIRCULATION AREAS?

WHEN	SUMMER MORNING	SUMMER AFTERNOON	WINTER MORNING	WINTER AFTERNOON
Hot		✓		
Cold			✓	
Good temp. °C	✓			
Noise				
Windy				✓
Wet (rain)				

Table 3: GENERAL QUESTIONS

	YES	NO	WHY?
Do you like your school building?		✓	No because its made out of wood and in winter its so cold.
Would you mind if other people of the community make use of your classrooms in the evening i.e. for adult classes?		✓	No because maybe they can leave the class dirty will have to clean or damage our things.
Would you mind if the local government make use of your school building at times outside of school teaching hours?		✓	
Will you or your parents be willing to pay a higher school fee for better facilities?	✓		Yes so that we can be in a better standard for anything.
Do you feel the school has enough playing and social areas?		✓	No we don't have enough.
Would you like your school to have a physical			

QUESTIONNAIRE FOR LEARNERS

Table 1: WHAT DO YOU THINK OF THE SCHOOL FACILITIES?

QUALITY	GOOD	AVERAGE	NOT SURE	POOR
Classrooms				✓
Playing grounds			✓	
Bathrooms				✓
Sport fields				✓
Library		✓		
Computer lab	✓			
Entrance		✓		
Hall		✓		
Circulation spaces		✓		
Storage spaces				✓

Table 2: COMFORT IN CLASSROOMS AND CIRCULATION AREAS?

WHEN	SUMMER MORNING	SUMMER AFTERNOON	WINTER MORNING	WINTER AFTERNOON
Hot		✓		
Cold			✓	
Good temp. °C	✓			
Noise				
Windy				✓
Wet (rain)				

Table 3: GENERAL QUESTIONS

	YES	NO	WHY?
Do you like your school building?		✓	Because it is very small and cold.
Would you mind if other people of the community make use of your classrooms in the evening i.e. for adult classes?		✓	No, because because people may steal your things.
Would you mind if the local government make use of your school building at times outside of school teaching hours?		✓	
Will you or your parents be willing to pay a higher school fee for better facilities?	✓		Yes, because if there is more education they will be willing to pay.
Do you feel the school has enough playing and social areas?		✓	No, because I think we need a place that we can play netball.
Would you like your school to have a physical	✓		

QUESTIONNAIRE FOR LEARNERS

Table 1: WHAT DO YOU THINK OF THE SCHOOL FACILITIES?

QUALITY	GOOD	AVERAGE	NOT SURE	POOR
Classrooms		✓		
Playing grounds		✓		
Bathrooms				✓
Sport fields				
Library	✓			
Computer lab	✓			
Entrance		✓		
Hall	✓			
Circulation spaces		✓		
Storage spaces	✓			

Table 2: COMFORT IN CLASSROOMS AND CIRCULATION AREAS?

WHEN	SUMMER MORNING	SUMMER AFTERNOON	WINTER MORNING	WINTER AFTERNOON
Hot		✓		
Cold			✓	
Good temp. °C	✓			✓
Noise				
Windy				
Wet (rain)				

Table 3: GENERAL QUESTIONS

	YES	NO	WHY?
Do you like your school building?	✓		It is a perfect size and shape.
Would you mind if other people of the community make use of your classrooms in the evening i.e. for adult classes?		X	Because it is a school ground.
Would you mind if the local government make use of your school building at times outside of school teaching hours?			
Will you or your parents be willing to pay a higher school fee for better facilities?	✓		If the school gets better they'll pay more.
Do you feel the school has enough playing and social areas?		X	
Would you like your school to have a physical			

QUESTIONNAIRE FOR LEARNERS

link (i.e. a pathway) that connects it to surrounding buildings or fields: i.e. Zonnebloem school, sport fields, secondary school, art centre?	✓	✓	Yes we can take an easy way out, cause now you can be reached by a car.
Would you like your school to have a roof garden?	✓	✓	

Table 4: In order of preference what facilities/resources do you think would be required to improve your learning environment and make the school a better place for you? Use numbers 1 - 5. 1 being the top priority. Only choose 5.

	NUMBER 1-5
More computers (digital textbooks)	
Food (one meal a day)	
Food garden and animals in the property	
Laboratory equipment (Science)	
Lockers	4
Individual learning spaces	
Outside stage-like/ amphitheatre spaces	
Improved car park	
Teachers	
Sport fields	3
Excursions	
School bus	
Café/ Hall/ Cafeteria	
Insurance	
Seminar room	
Audio visual/cinema room	
Shop (i.e. display and or sell things such as artworks that are made within the school)	5
Textbooks	
Library	
Furniture	
Stationary	4
Safety and security	1
Playgrounds	
Better classrooms	2
Roof garden	

Table 3: ANY GENERAL COMMENTS

QUESTIONNAIRE FOR LEARNERS

link (i.e. a pathway) that connects it to surrounding buildings or fields: i.e. Zonnebloem school, sport fields, secondary school, art centre?	✓	The field at Zonnebloem is closer to the field on top.
Would you like your school to have a roof garden?	✓	Yes for a quiet place in the school.

Table 4: In order of preference what facilities/resources do you think would be required to improve your learning environment and make the school a better place for you? Use numbers 1 – 5. 1 being the top priority. Only choose 5.

	NUMBER 1-5
More computers (digital textbooks)	
Food (one meal a day)	
Food garden and animals in the property	
Laboratory equipment (Science)	5
Lockers	1
Individual learning spaces	
Outside stage-like/ amphitheatre spaces	2
Improved car park	
Teachers	
Sport fields	
Excursions	4
School bus	
Café/ Hall/ Cafeteria	
Insurance	
Seminar room	3
Audio visual/cinema room	
Shop (i.e. display and or sell things such as artworks that are made within the school)	
Textbooks	
Library	
Furniture	
Stationary	
Safety and security	
Playgrounds	
Better classrooms	
Roof garden	

Table 3: ANY GENERAL COMMENTS

QUESTIONNAIRE FOR LEARNERS

link (i.e. a pathway) that connects it to surrounding buildings or fields: i.e. Zonnebloem school, sport fields, secondary school, art centre?	✓	Yes because if you want to go to the art centre.
Would you like your school to have a roof garden?	✓	Yes because it is on the roof.

Table 4: In order of preference what facilities/resources do you think would be required to improve your learning environment and make the school a better place for you? Use numbers 1 – 5. 1 being the top priority. Only choose 5.

	NUMBER 1-5
More computers (digital textbooks)	
Food (one meal a day)	
Food garden and animals in the property	
Laboratory equipment (Science)	
Lockers	2
Individual learning spaces	
Outside stage-like/ amphitheatre spaces	
Improved car park	
Teachers	
Sport fields	
Excursions	
School bus	
Café/ Hall/ Cafeteria	3
Insurance	4
Seminar room	
Audio visual/cinema room	
Shop (i.e. display and or sell things such as artworks that are made within the school)	
Textbooks	
Library	
Furniture	
Stationary	
Safety and security	
Playgrounds	
Better classrooms	5
Roof garden	

Table 3: ANY GENERAL COMMENTS

QUESTIONNAIRE FOR LEARNERS

link (i.e. a pathway) that connects it to surrounding buildings or fields: i.e. Zonnebloem school, sport fields, secondary school, art centre?	✓	Because it would make it safer and more shelter to go the Art centre and the sport fields.
Would you like your school to have a roof garden?	✓	Because the roof flowers can grow more roots and maybe the roots can cover out windows

Table 4: In order of preference what facilities/resources do you think would be required to improve your learning environment and make the school a better place for you? Use numbers 1 – 5. 1 being the top priority. Only choose 5.

	NUMBER 1-5
More computers (digital textbooks)	
Food (one meal a day)	
Food garden and animals in the property	
Laboratory equipment (Science)	5
Lockers	3
Individual learning spaces	
Outside stage-like/ amphitheatre spaces	
Improved car park	
Teachers	
Sport fields	2
Excursions	
School bus	
Café/ Hall/ Cafeteria	
Insurance	1
Seminar room	
Audio visual/cinema room	
Shop (i.e. display and or sell things such as artworks that are made within the school)	4
Textbooks	
Library	
Furniture	
Stationary	
Safety and security	
Playgrounds	
Better classrooms	
Roof garden	

Table 3: ANY GENERAL COMMENTS

QUESTIONNAIRE FOR LEARNERS

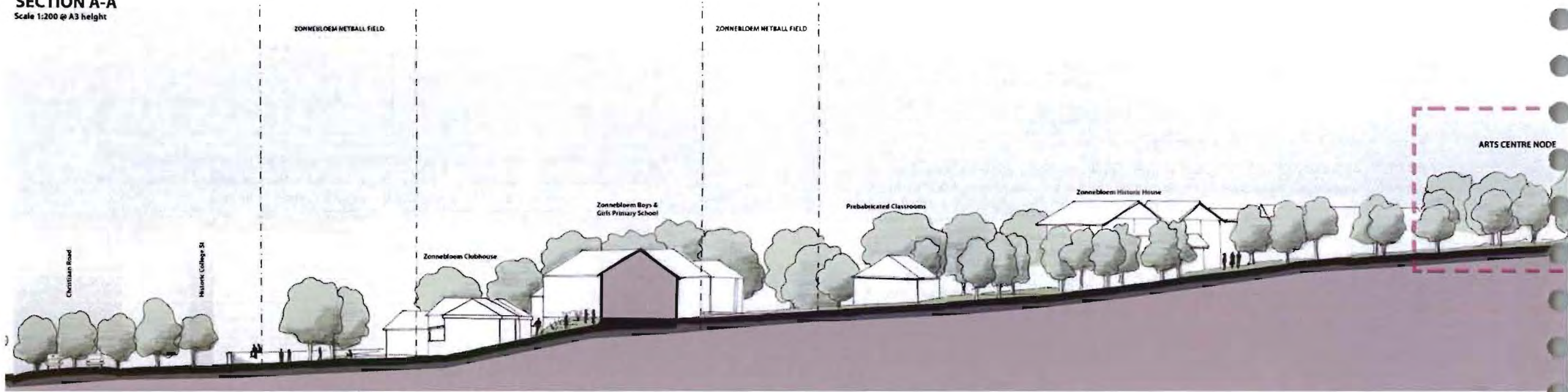
link (i.e. a pathway) that connects it to surrounding buildings or fields: i.e. Zonnebloem school, sport fields, secondary school, art centre?	✓	to make it easier and it won't take a lot of time
Would you like your school to have a roof garden?	✓	

Table 4: In order of preference what facilities/resources do you think would be required to improve your learning environment and make the school a better place for you? Use numbers 1 – 5. 1 being the top priority. Only choose 5.

	NUMBER 1-5
More computers (digital textbooks)	
Food (one meal a day)	
Food garden and animals in the property	
Laboratory equipment (Science)	
Lockers	
Individual learning spaces	
Outside stage-like/ amphitheatre spaces	
Improved car park	3
Teachers	
Sport fields	2
Excursions	
School bus	4
Café/ Hall/ Cafeteria	
Insurance	
Seminar room	
Audio visual/cinema room	
Shop (i.e. display and or sell things such as artworks that are made within the school)	
Textbooks	5
Library	1
Furniture	
Stationary	
Safety and security	
Playgrounds	
Better classrooms	
Roof garden	

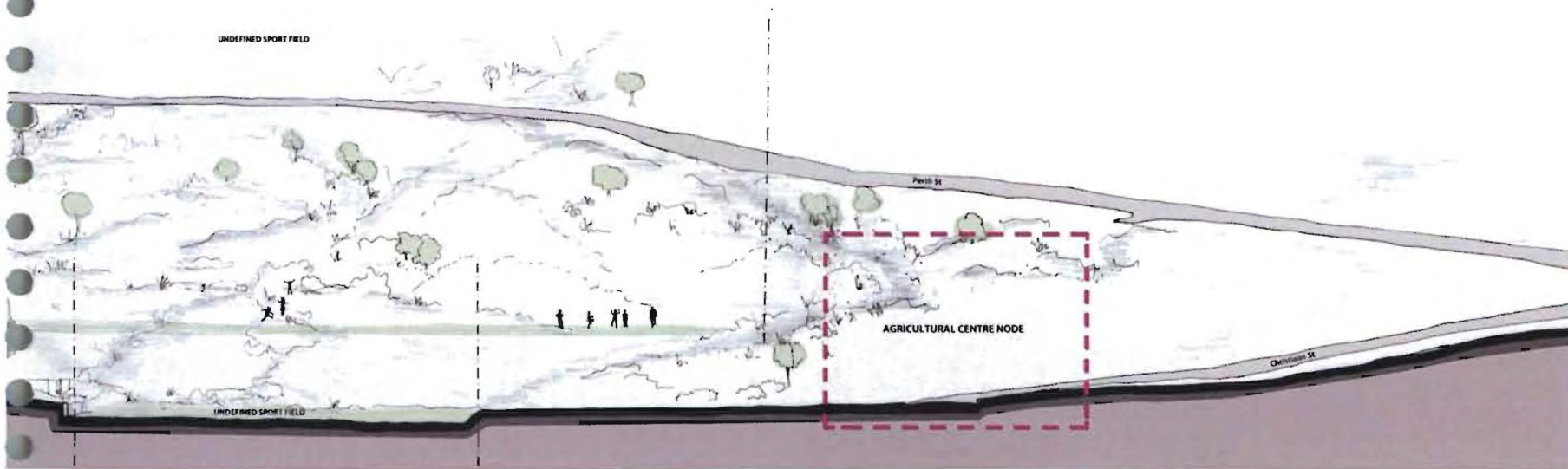
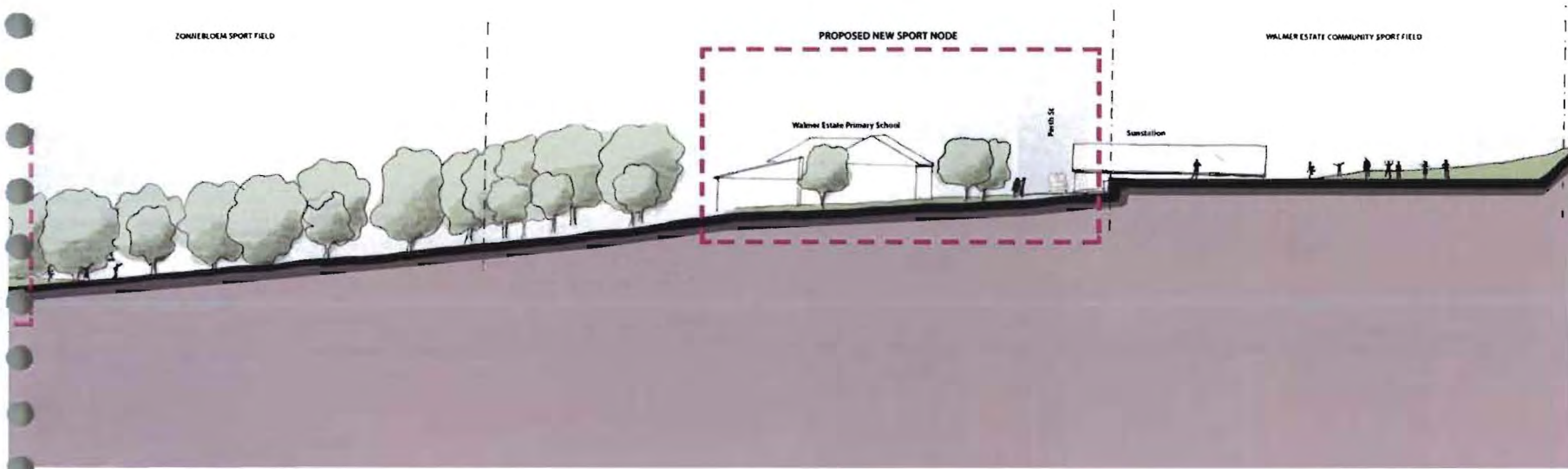
Table 3: ANY GENERAL COMMENTS

SECTION A-A
Scale 1:200 @ A3 height



SECTION B-B
Scale 1:200 @ A3 height





The In Between Spaces: Architecture of Learning

AGE APPROPRIATE ARCHITECTURE:

GRADE R: Age 3 to 6 years

Between 3 and 6 years of age, and with the beginning of social awareness, children usually play in groups, thereby fostering interpersonal relationships and sociability. Children in this age group enjoy activities which represent something else; they generally play with abstract elements and movable equipment. (Alamo, 2006, p. 268)

PLANNING ELEMENTS:

- Abstract elements
- Movable equipment
- Environment

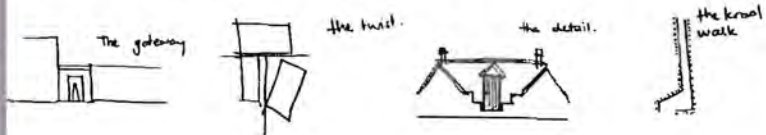


SITE INFORMANTS

Key design informants of site:

- The 'twist' & irregular social pockets
- Transitional spaces defined by gateways, stoeps, steps, low walls, small gardens, gates
- The farm and church architectural character (and D6)
- The detail

The idea of historic Zonnebloem filtrating upwards.



GRADE 1 to 3: Age 6 to 8 years (Foundation phase)

From age 6 to 8 children gravitate toward activities which involve movement and action; activities which develop both organizational and physical skills. Children in this age group enjoy testing their skill with more or less complex structures that call upon different motor responses. (Alamo, 2006)

PLANNING ELEMENTS:

- Movement and action: Movable equipment
- Organizational skills
- Complex structures
- Plenty of sunlight
- Play areas
- Closer to 'guidance', parents' drop off area, kitchen and medical aid room



THE IN BETWEEN & THE GRID

THE GRID - MODULAR STRUCTURE

4m x 4m (classroom size: 8m x 8m = 64m²)

- cannot predict the future
- rooms can easily be added, divide or reconfigured
- save money in the future (changing needs)
- Historic District Six also formed on regular street grid



GRADE 3 to 5: Age 8 to 10 years (Intermediate phase)

As adolescence nears, age 8 to 10 and upward, children opt for grouping together, but without adult supervision or interference from younger children. They generally like to demonstrate their powers of balance and coordination in more complex climbing equipment. (Alamo, 2006)

PLANNING ELEMENTS:

- Independent activities
- Groups
- Complex climbing structures



EXTERNAL WALLS & SKIN

IN BETWEEN SPACES must:

- encourage social interaction
- integration with others (not excluded)
- organic playful spaces that stimulate creativity and that children do not learn in a linear way
- social break-out space
- green linking 'fingers'

GRADE 5 to 7: Age 10 to 13 years (Senior phase)

PLANNING ELEMENTS:

- Relationship with community
- More responsibility
- Individuality
- Debating spaces
- Sport connection
- Less adult supervision
- No interference from younger children



LEARNING ABOUT SUSTAINABILITY

