Architecture as the Background to Collective Life

Design Research Project APG5058S

Submitted in partial fulfilment of the requirements for the degree
Master of Architecture (Professional)

by

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University of Cape Town

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architecture as the background to collective life

anna goldman

glossary

Primary elements

The primary elements of the city are the public buildings, activities and spaces that are provided by the collective for the collective, and can be contrasted with residential areas. (Rossi, 1982, p86)

Urbanity

Urbanity is the generic term used here for the positive qualities which exist in urban areas. (Dewar & Uytenbogaardt, 1945, p7)

Urbane buildings

I use the term 'urbane' to describe buildings that are sensitive to the order and quality of public outside space.

Framing / Siting

Framing and siting refer to the act of framing the project within a given geographical area (in this case within the city of Cape Town), and choosing an appropriate site within that frame.

notes

Drawings / diagrams are not necessarily to scale, check caption for given scale.

North is always towards the top of the page unless explicitly show differently on a drawing.

introduction

This project develops an approach towards the arrangement and design of the primary elements – public facilities and spaces - that necessarily complement the provision of subsidised housing in South Africa.

The historical response to the housing shortage in South Africa has been the provision of a remarkable number of *individual* housing units, but with insufficient funds and attention given to the urban infrastructure, public spaces and facilities that go hand in hand with housing in livable urban environments.

This project considers a subsidy housing project where the social facilities are considered upfront, and are seen as an opportunity to create interesting, people-centred places in the development - this thesis is the search for an architecture which forms the backdrop, and framework for growth, for collective urban life.

This paper is structured around six sections: thinking, siting, urban design, programming, making and designing. These sections explore, respectively, the theoretical proposal with regards to social facilities and public spaces, the strategic siting of an area of subsidised housing and its associated primary elements, an urban design proposal for the whole development, the programming of the whole site and the individual cluster of facilities that I consider in more detail, the spatial and technological realisation of the public fronts of three case study buildings, and finally the exploration and manifestation of these ideas through a design.

My project is being done in conjunction with another student, Rob Richardson, who is looking at creative housing within the limit of the government subsidy. Together we make a proposal for an overall living environment which takes the form of an acupunctural insertion of subsidised housing and the associated primary elements into an area of Wynburg, Cape Town.

The site is 45ha, and will take an approximate population of 9000 people. While Rob considers different housing typologies, I consider a limited number of the array of recommended social facilities, and their relationship with public open space.

This design and research exercise aims to test the possibilities of using social facilities to create the background for collective life, and hopes to contribute to debates around issues of social sustainability, densification, urbanisation, the challenges of housing in South Africa and the role of urban design and the primary elements in the provision of mass housing.

thinking

architecture as the background to collective life

The primary elements of the city can be provided strategically so as to improve the quality and accessibility of the resources and services they offer, at the same time as providing spaces and shelter for collective life.

This proposition is discussed first through a look at the primary elements of existing low income settlements in South Africa, and then through a number of principles that I suggest are central to making social facilities and public spaces that are not only accessible, of a high quality and which have increased resources, but which have the potential to provide the background to a rich, collective, urban life.

the primary elements of South African settlements

the role of the primary elements

The typical benefits of living in a city include increased choices and opportunities in all arenas of life, including, for example, lifestyle, friendships, education and work. Much of this choice and opportunity comes about as a result of large numbers of people living together at a sufficiently high density threshold, which can support a complex web of interconnected, interdependent activities.

The bottom rung of opportunity, however, is provided by the collective, represented by the state, for the collective, in the form of a basic support system for shared urban life.

This urban support system is made up of the social facilities and public spaces that I call here the 'primary elements' of the settlement. (Rossi, 1982, p86) These facilities offer resources and services beyond those which can be created by individuals for themselves. The public spaces are the places where people experience the common world and engage in its collective life and as such, the quality of these public spaces and places impacts on the quality of collective urban life. (Dewar & Uytenbogaardt, 1995)

The positive qualities of urbanity therefore cannot be borne out of housing areas alone, but are dependent on a degree of density of housing, and the co-existence of housing with the primary elements of the settlement.

the reality of the primary elements in low-income South African settlements

Mitchells Plain - showing identical schools built according to standard plans, most of them without halls, outdoor play areas or sports fields. (Google Earth, 2009) The schools sit in the middle of a large plot of land, surrounded by a fence, make no contribution to a positive public environment and present themselves as introverted.

In low-income areas of South African cities the primary elements, where they do occur, are often spread very thinly and are not of a high quality. Government response to the housing shortage has focused on providing houses for individual families, rather than an overall living environment.

Facilities such as schools, clinics and community centres are often provided within stringent budget constraints, often to the detriment of the landscaping of outside spaces, and are not well maintained. Schools, in particular, have often been built to minimum space standards, made of tough, cheap materials and without libraries or halls. (Low, forthcoming) Futhermore, facilities often lack vital resources such as computers, books and equipment.

Facilities are often located on large pieces of land, embedded within neighbourhoods. The result is that they are not accessible to a wide community, which means some facilities are crowded while others are underutilised, and resources cannot be easily shared. (Planning and Development Directorate, 1999, p8)

The quality of the urban public spatial environment is poor in large areas of South African settlements, consisting mostly of left over space between houses or developments, rather than a system of purposefully constructed spaces that accommodate everyday life. (Dewar & Uytenbogaardt, 1995, p10) This despite the fact that people may spend a considerable amount of time outdoors because outdoor spaces absorb many of the activities that cannot be housed by low-income residences, including manufacturing, trading, washing, socialising and so on. (Planning and Development Directorate, 1999, p8)

vision of an urban support system that provides the background to a vibrant collective life

The primary elements have great potential to increase the quality of life of people in low-income settlements. In the context of widespread poverty, unemployment and homelessness, and with limited funding and capacity to cope with these challenges, the primary elements have an important role to play because they can reach the widest range and largest number of people - in other words, they cater to the lowest common denominator.

I propose that the primary elements of the city can be provided strategically so as to improve the quality and accessibility of the resources and services they offer, at the same time as providing spaces and shelter for collective life.

The following ideas inform my re-imagining of social facilities and public spaces, and will be discussed within this chapter: social facilities should be clustered, they should be as multi functional as possible, they should articulate public and intermediate spaces outside and inside the buildings, the relationship between buildings and space should be legible, and the spaces offered should be generous and flexible.

clustering

The first principle is that social facilities should be clustered around transport nodes or along integrating streets. (Planning and Development Directorate, 1999) Clustering facilities presents a number of benefits.

Firstly, it is more convenient for people on foot to be able to access more than one facility at a time.

Secondly, resources and amenities can be shared between facilities, enabling them to be fewer but better. For example, one library with lots of books and providing a good service to two schools and the wider community is better than thee malfunctioning libraries that lack resources and are under-staffed. Also, sharing amenities, such as sports fields, between clubs and schools frees up land and reduces the often high maintenance costs.

Thirdly, a variety of facilities that are grouped along an integrating street or around a transport node, such as a taxi rank, are very easily accessible from a wide variety of neighbourhoods. The ease of access and the diverse range of facilities presents the opportunity for users of different ages and from different neighbourhoods to share facilities in an integrated way, and establishes a natural gathering place within the area.

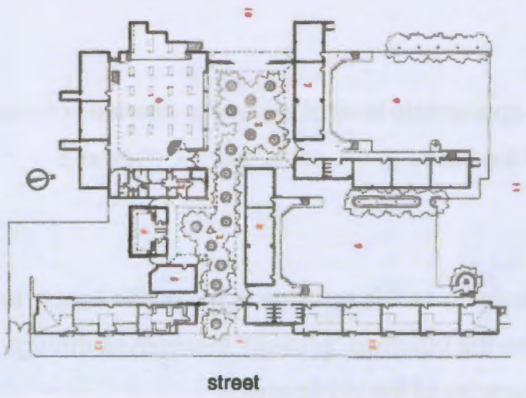
And finally, because of the range of facilities provided, it is likely that the collective outdoor space will be active throughout the day and in the evening, making the facilities less vulnerable to vandalism and crime and the place safer overall.

multi-functionality

The second principle is that all facilities and public spaces should be made as multi-functional as possible, in order to maximise the potential usefulness of these primary elements to the wide community that they serve. This is seen as a strategic imperative in a country with limited resources and capacity to meet the demand for a social support system.

> Halls, sports fields and public spaces, especially, must be generous and flexible enough to accommodate a range of uses, even if it means that they don't accommodate any one use optimally. (Dewar & Uytenbogaardt, 1945, p13)

This principle, like the first principle of clustering, enables facilities to be fewer, but of better quality and better resourced and staffed.



Usasazo School in Khayelitsha, by Noero Wolff Architects, concentrates the buildings against the boundary to articulate the edge of the street, at the same time as offering shade and benches to sit on. (Slessor, 2007, p58 - 59)

Not only do the buildings articulate the public space of the street, but they create an interstitial space between the public space outside and the internal workings of the building by means of a tree lined court, which also connects the street to the soccer field.

collective spaces

The diverse range of activities offered by the cluster, and their exposure and accessibility, creates a natural gathering place in the community. In anticipation of this, the facilities must exceed their own utilitarian requirements because they are for everyone, even those who may never enter them, or use their services directly. (Curtis, 1994) The added responsibility of the clustered facilities is to articulate public and semi-public spaces, inside and outside the building, that accommodate a range of sociability and which are open to any use.

When considered in this way, social facilities and public spaces become inextricably connected and start to constitute a public armature of supportive services reinforced by flexible, generous community spaces.

Positive public space

Public spaces are not left over spaces, but are purposefully constructed spaces which accommodate people and their engagement in collective life. (Jacobs, 1962) The provision of a cluster of facilities in a new development presents not only practical benefits, but also a great opportunity to make really significant, positive outdoor public spaces. The quality of the public space is not dependant on good individual buildings, but on a good relationship between buildings and space (Forjaz, 2000, p5).

Buildings that recognise the importance of their relationship to public space can be thought of as “fragments of the city”. (Curtis, 1994) Fragments of the city are urbane receptacles which respond to the over arching order of public space before arranging programmatic spaces within a largely predetermined envelope.

Aside from outdoor spaces that have a sense of place, there are practical benefits to making clearly defined, unequivocally public spaces.

Firstly, there is a clearly defined domain which can be surveyed by the people in the buildings which face onto, and define, the public space. This visibility makes the place less vulnerable to crime and vandalism, and generally a safer place to be. (Jacobs, 1962, p36)

Secondly, places that are clearly public are less likely to be used for illegal dumping of waste, which happens all over the city in open spaces that are seen as ‘no-mans land’.

Thirdly, the clearly defined public domain creates a focus for activity in the community, which increases the chance of activities overlapping and reinforcing one another.

In order for the public space to have a degree of continuity, the buildings should not be set back from the street edge, because this blurs the boundary between public and private, and nor should the public space of the street be interrupted by private or “nothing-at-all” spaces, for this undermines the unambiguousness of the public space. (Jacobs, 1962, p36)

The role of the interface between the public space and the public buildings which frame it is as the element which both relates and separates people. (Arendt, 1958, p5) The success of this boundary is in the right balance between exposure and privacy. It constrains the extent to which public activities infringe on the

proper functioning of the internal activities, and it affords the appropriate level of privacy to internal activities, while retaining a connection between the collective nature of the inside and outside spaces. (Dewar & Uytenbogaardt, 1945, p12)

Finally, the façade of the building is as much the face of the building as it is an edge to the public space, and therefore the background to the activity in that space. So far as the buildings "present" themselves through their faces (Vidler, 1992), they also determine, to a degree, the character of the public space.

A range of intermediate spaces from very exposed to very intimate

At the same time as defining positive outdoor public space, the interface between the buildings and the public space has the potential to set up a range of intermediate places that accommodate different levels of sociability. These spaces extend the spaces and shelter that is offered to collective urban life, by creating a range of indoor and outdoor places that range from very exposed to very intimate, to which varied activities can respond.

The generous 'porch' of the Red Location Museum in Port Elizabeth is open for anyone to use it. (Photo by author, 2008)

In other words, the boundary between public domain and the buildings, when viewed at a closer scale, becomes a series of lines; instead of a limit it becomes a fringe. These intermediate places are not residual spaces, but the "gaskets" between activities where people meet, wait or socialise, and they are definite enough that they can be used for specific activities by different groups of people. (Guallart, 2003)

Programmatically, the architecture of intermediate places is able to contain simultaneous uses, and constant rearranging, which means that these spaces have great potential to be shared between different facilities in the cluster.

These in-between places, while making generous public spaces inside the building, should connect back to the urban environment as much as possible to ensure their open, collective nature.

The 'porch' of the Red Location Museum in Port Elizabeth is used over a few days a year for a draughts tournament (Kondlo, 2008), a use which never could have been predicated by the architect.

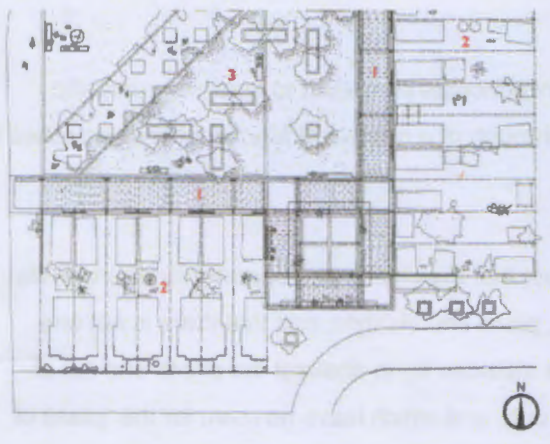
legibility

Thinking about buildings, particularly in terms of their relationship to space, can also be thought of in terms of legibility, or the consideration of the whole environment instead of the individual buildings. This approach turns on its head the modernist tendency to consider the free standing object in space as the building block of settlements, and takes instead the collective public environment as the principal component. (Dewar & Uytenbogaardt, 1995, p5)

Concern with the legibility of the urban structure (the relationship between buildings and space) is promoted in South Africa as a way of building that is meaningful and affordable, because it considers the logic of the overall environment and then provides the minimum that is required to ensure a feeling of completeness, but leaves room for growth and adjustment. In other words, emphasis is put on the overall framework, rather than the perfect completion of its individual parts, which is not necessarily desirable or affordable.

Indeed, in South Africa, where there are frequently insufficient funds to provide all the required facilities, not thinking about the total environment can result in large tracts of empty land which fragment the urban environment and frequently become dangerous places to move through. (Dewar & Uytenbogaardt, 1995, p6)

The clarity of the framework that is provided enables future users to modify and add buildings, thereby channelling the energy of the millions people who actually build the city (non-architects) to meet their own needs and respond to subtle economic and social forces that could not have been predicted by the architect, but in such a way that they contribute to the character and complexity of the area without undermining the overall sense of place.



This idea is particularly relevant in the context of this overall thesis project, which considers the primary elements of an entirely new development, with the potential to house up to approximately 9000 people. In this case, it would be a mistake to provide everything at once for a community of people that does not even exist yet. If all the components were to be provided at once, there would be no potential for the settlement to develop its own character over time, or for the community to have any say in what the most important community facilities should be.

View of public place and site plan (Barac, 2007, p64 - 64)

This public space project in Phillipi, by Suzanne du Toit in association with Jacques Theron, does not try to resolve perfectly all the parts of the building, but sets up the relationship between the buildings and the collective space.

The project creates a public space on the corner of a major crossroad on Landsdowne road, by means of a giant concrete pergola, and at the corner of the major space there is a covered outdoor space, with laundry facilities and pay-phones. The structural pergola is designed so that container shops can 'clip' onto it, opening into the major public space.

Criticism of the project in terms of the lack of interest by shop owners tends not to be about the approach, but about the lack of understanding of everyday conditions, about what makes public space matter to people. (Barac, 2007, p64 - 65)

The scale of the project, and the ability of different activities to reinforce one another and generate a certain dynamism, is also very important, as will be seen in the case study of Walter Sisulu Square of Dedication. In other words, there needs to be a minimum level of activity to attract more activity.

Legibility at the scale of the settlement comes from the perceptible network of important places and spaces which attract differing levels of intensity and types of activity. Spaces which are introverted and not connectable do not contribute to articulating the public domain which structure the settlement. (Safdie, 1984, p.142, 153)

Legibility at the scale of the cluster comes out of clarity in the relationship between buildings and space.

generosity and flexibility

The principle 'collective spaces' expounded the idea that public buildings must exceed their utilitarian role, because they are for everyone, and recommended that buildings be used to make public spaces and streets as well the spaces required by their program. Here I will consider how to make such collective spaces so that they have a chance of becoming vibrant, well used places in the community.

The fourth principle, then, is that of generosity and flexibility, and is underpinned by a non-programmatic approach to architecture and urban design. While this theme was explored briefly under 'multi-functionality', non-programmatic architecture was considered there as a practical necessity, but is viewed here as having the potential to provide the preconditions for the richness of urbanity to emerge.

Functionalist versus non-programmatic approaches to architecture and planning

This discussion begins with a description of the positive qualities of city life, which I call "urbanity", after Dewar and Uytenbogaardt (1945, p7). Jane Jacobs' (1962, p14) description of the characteristic of cities is that there exists an intricate web of a diverse range of activities, which depend on the support of the other activities for their existence, both socially and economically. This dynamic interplay of activity provides, as Jacobs describes "fertile ground for the plans of thousands of people".

This description of urbanity presents a number of important concepts in relation to non-programmatic architecture and settlement making, which I will consider through of a critique of functionalist approaches to architecture and planning.

Firstly, the complexity of the city arises largely out of the fact that the choice and opportunity of urban life enables each person to pursue his or her own aspirations, plans and lifestyle, and that there is not one overriding plan that every person ascribes to. Functionalist attitudes try to abstract the city to one set of functional principles which reflect the plan of the architect only, and which leave no room for the "plans of thousands of people". (Jacobs, 1962, p14)

Secondly, the 'dynamic interplay of activities' depends on numerous activities being able to happen in the same place, or at least overlap. Functionalist planning approaches effectively destroy this complex web of everyday activities by separating and streamlining functions.

By way of example, the modernist approach to 'streets' was to make them into roads, which were seen simply as the most efficient way of getting from A to B, and were not considered as ends in themselves. This reductive approach to design does not accommodate any other activity from happening on the street, such as friends meeting, children playing, hawkers trading and so on, and when applied to all the so called 'functions' of a city (travelling, eating, shopping, working, etc), it only breaks down the complex web of activity that is the essential condition for urbanity.

In reality, good spaces in the city may have been conceived and constructed as a means (to learn, to move around the city, to memorialise), but go on to become ends in themselves. (Rossi, 1982, p.126)

The complex interplay of activities that constitutes urban life may at first appear chaotic, but is actually a complex societal order which cannot be understood well enough to be planned for. (Jacobs, 1962) This is not to say that non-programmatic architecture originates aimlessly, however. The qualitative, non-programmatic aspect of architecture is not completely random, and may well have functional requirements as its starting point, but it transcends immediate requirements to be able to accommodate what Rossi describes as 'the residue of the city that it is impossible to describe in a precise manner." (1982, p46)

A non-programmatic approach to public architecture thus considers buildings not as specific responses to utilitarian requirements, but as vessels which house the complex, fluid and unpredictable nature of collective life, inside and outside. Non-programmatic architecture does not try to imitate life, for it is reductive and therefore futile to try and reflect the complexity of life in a plan, nor does it consider buildings as a response to a single function or time space. Non-programmatic architecture is the "stage for whatever may come into being"; the background to every individual aim. (Rossi, 1982, p.22)

The preconditions for urbanity

In order to provide the preconditions for rich urban qualities to emerge, architecture exceeds programmatic requirements to provide generous, flexible spaces, ranging from very exposed to very intimate, to which different and multiple activities can respond, now and in the future. This approach offers choice, but does not impose an overriding plan or lifestyle. (Tilman, 1997)

case study: walter sisulu square of dedication

introduction

Walter Sisulu Square of Dedication in Kliptown, Soweto, is a combination of memorial, cluster of social and economic facilities and public space. This case study is considered in terms of the principles (outlined so far in this chapter) for projects that form part of a support system for urban life, but which exceed this role and provide the background to a vibrant collective life.

Despite its importance as a monument to the political struggle in South Africa, I will not be considering the symbolic aspect of the architecture.

Walter Sisulu Square of Dedication (Digest, 2006, p18)

The project is located in Kliptown, Soweto, a South African township which is home to a vibrant and mixed community of people who both live and work there. The Walter Sisulu Square of Dedication [WSSD] forms part of an overall urban renewal intervention that aims to create a firm identity for the area. (Digest, 2006, p18)

One of the major intentions of the project, along with stimulating economic development and promoting arts, culture, education and tourism, was to create a "vibrant, safe and welcoming public domain that would stimulate retail and commercial activity ... [and] provide open recreational space". (Digest, 2006, p18)

The project sought to do this by creating "a sense of place", and a rich and diverse environment that offers economic opportunity, facilitates economic activity and improves the quality of life of the poorest members of the local community. (Digest, 2006, p20)

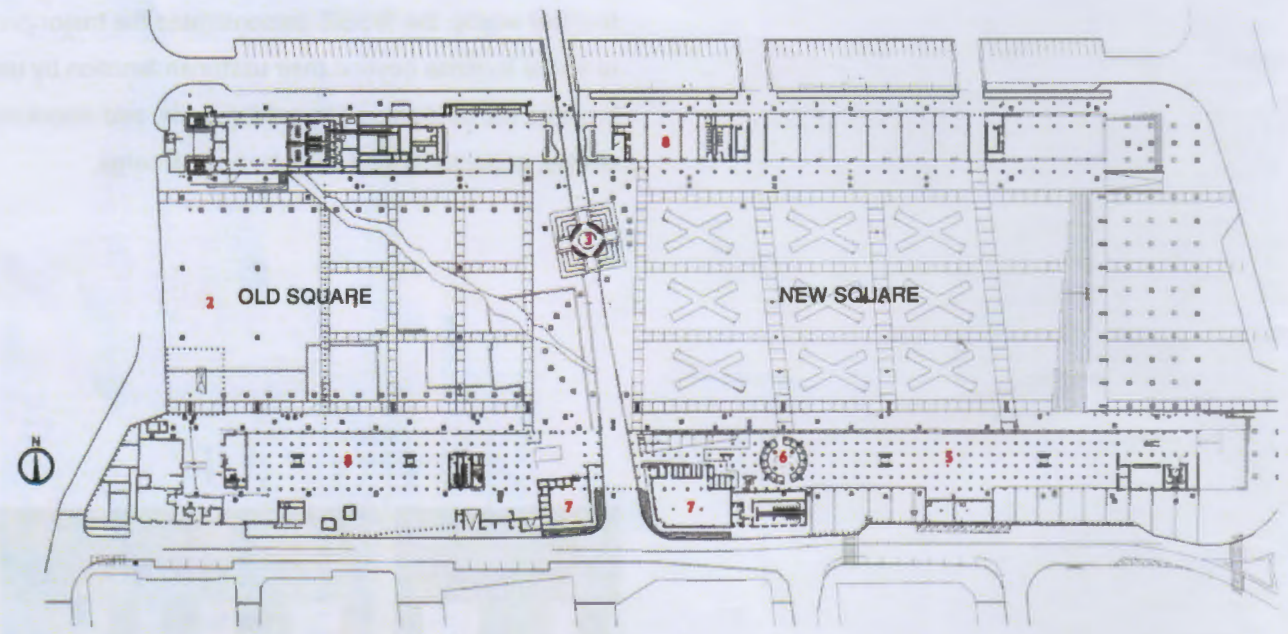
The combination of the accessibility and exposure of the WSSD, the clustering and type of facilities offered and the multi-functionality of the different amenities should mean that the WSSD is always in use, at different times and by different people.

In other words, the WSSD demonstrates the major principle proposed by this thesis, which is to elevate the role of social facilities beyond their utilitarian function by using them to articulate positive public spaces, so that they become the background to collective life, and insodoing provide the preconditions for real urban qualities of choice, opportunity and complexity to emerge.

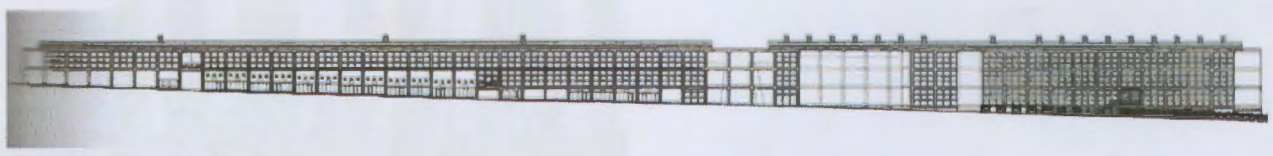
Traders' market (Barac, 2007, p43)

accessibility

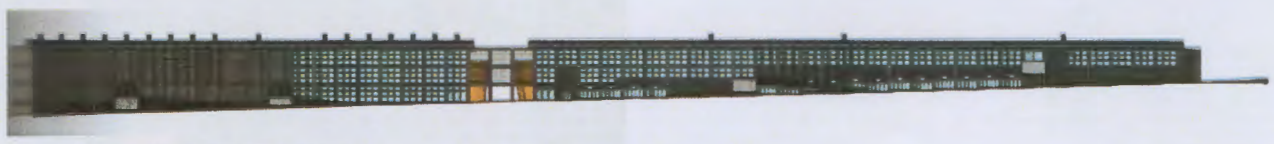
The WSSD, having been considered in terms of an overall project of urban renewal, forms part of an improved public and private transport system that aims to improve circulation in the area, and thereby increase economic activity. A taxi interchange was established next to the square, and it has been proposed that Kliptown Rail Station be relocated to the western side of the square. (Digest, 2006, p20)



Site and ground floor plan (Barac, 2007, p44)



North Structure from New Road



North Structure from the public space

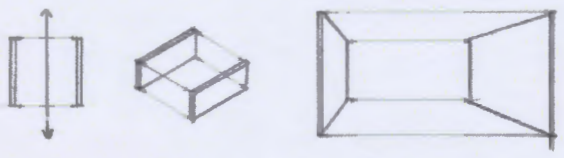
South Structure from Union Road

clustering

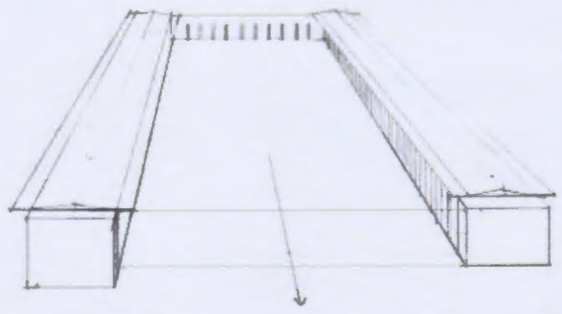
The North Structure houses a multi-purpose hall; banking facilities; conference and training rooms; a restaurant, retail space and offices. The South Structure houses a covered market with space for more than 700 emerging informal businesses; a tourist centre and boutique hotel.

The hall and conference facilities can be used by visitors staying in the hotel, who also spend money at the market. Visitors, tourists, locals, and employees, can use the banking facilities, visit the memorial, spend money at the market and eat at the restaurant. The hall and public space are available for functions.

In other words, all these facilities should reinforce one another so that they gain from being clustered, and become more than the sum of their parts. Additionally, the mixture of activities draws a diverse range of users, from locals to international tourists.



Diagrams of two planar elements defining a space between them (adapted from Ching, 1943)



Sketch of Walter Sisulu Square showing two major linear elements on the north and south side of the site, and the 10 Freedom Charter columns on the eastern side.

collective spaces

The facilities are used to make positive public outdoor space.

The site is flanked by two long buildings which run east-west, and which define a public space between them. This public space is divided into two squares, the 'New Square' on the east side, which is the side from which one enters the square and the 'Old Square' on the west side. The Old Square is built on the site of the Congress of the People and is thus more the memorial square, while the new square is described as a comfortable space, filled with trees, where "people are free to meet, trade, play or rest." (Digest, 2006, p19)

Form / Space

The buildings and the public space are considered as a whole, with the two linear buildings defining a space between them, and the row of 10 Freedom Charter columns across the east edge creating a fainter third boundary that is also the main entrance. The use of linear bounding elements, and the nature of the interface between the buildings and the public space, make the space unambiguously a collective space, and very different in quality from the outside spaces in the surrounding urban area.

Interface

There is a definite plane of intersection between the major public space and the buildings, even if it is completely permeable and allows free access through to the roads on the outer sides of the buildings.

The continuity of the roof element, on both the south and north side, also contributes to the clarity of the collective space. While the ground slopes downwards, the roof continues horizontally right along the square.

On the south side this plane is made up of rows of a regular frequency of thin, slanted concrete columns. The rows of columns are the primary space defining element, which leaves the architects free to play, within the framework they must have set up initially, with the position of enclosed buildings, as can be seen in the section of the south structure.

Inteface between the north side building and the public space (Barac, 2007, p41)

On the north side the plane of intersection between the public space and the building is formed by a concrete grid that is in some places filled in by locally manufactured pre-cast concrete screens or glazed panels. (Barac, 2007, p46)

Here the continuity of the regular concrete frame is the space defining element, and the panels can be open or closed, without undermining the primacy of the plane.

On the east side the boundary of the public space is made by 10 Freedom Charter columns, and a change in level. This is the most permeable boundary of all, which is appropriate as it is also the entrance to the square.

Despite both the north and south building clearly delineating the public space by making a continuous edge plane, both buildings are very permeable and make strong connections through the buildings to the outside world.

legibility

As described previously, many South African settlements lack any sense of centre or hierarchy, because the outdoor environment is more accidental than anything else. The WSSD aimed to create a focus for Kliptown, with a strong architectural and urban character, which is flexible enough that it can develop its own character over time through changes by users and traders. (Digest, 2006, p22)

The ability for the place to grow and develop character hangs on the legibility of the urban structure. There are clear spaces, entrances and routes across the site, and the legibility of the place means that any additions should be able to contribute to the overall environment by adding character but not detracting from the essential spatial principles of the place.

Aerial photo of showing urban character of the public space (Digest, 2006, p21)

Market (Barac, 2006, p41)

generosity and flexibility

The principle which is most evidently embodied in this project, is that of generosity. No part of the building could be described as being limited to utilitarian requirements. The buildings exceed programmatic requirements to constitute a lasting, flexible architecture, that can easily accommodate multiple and varied activities, now and in the future.

The hall in the North Structure is designed to be able to be used for functions, sporting events and as an auditorium. The public space has even been described as "a giant urban stage." (Barac , 2007, p42)

conclusion

While the WSSD embodies all the principles that I have set out for this thesis, its success is largely due to its unashamedly massive scale.

Firstly, to generate enough activity for the place to become a real social gathering place a critical amount of activity needs to be generated by the facilities that are provided, which is one of the primary reasons for clustering facilities in the first place.

In comparison to the WSSD, the Phillipi Public Space project (described earlier), despite embodying the same principles, did not provide enough initial activity to kick start a reaction by shop owners to move their shops to the square that was provided. As a result, the space that was provided is not well used. This demonstrates that the scale of intervention and the choice of the facilities and activities which are provided are crucial determinants of whether the place will attract real social activity.

Secondly, the physical scale and robustness of the WSSD give it a real sense of weight and permanence. This shows an element of determination in the gesture of making a public place for people in Kliptown, which is experienced on the site and is likely to contribute to the success of the project.

siting

pockets of spatially advantageous land

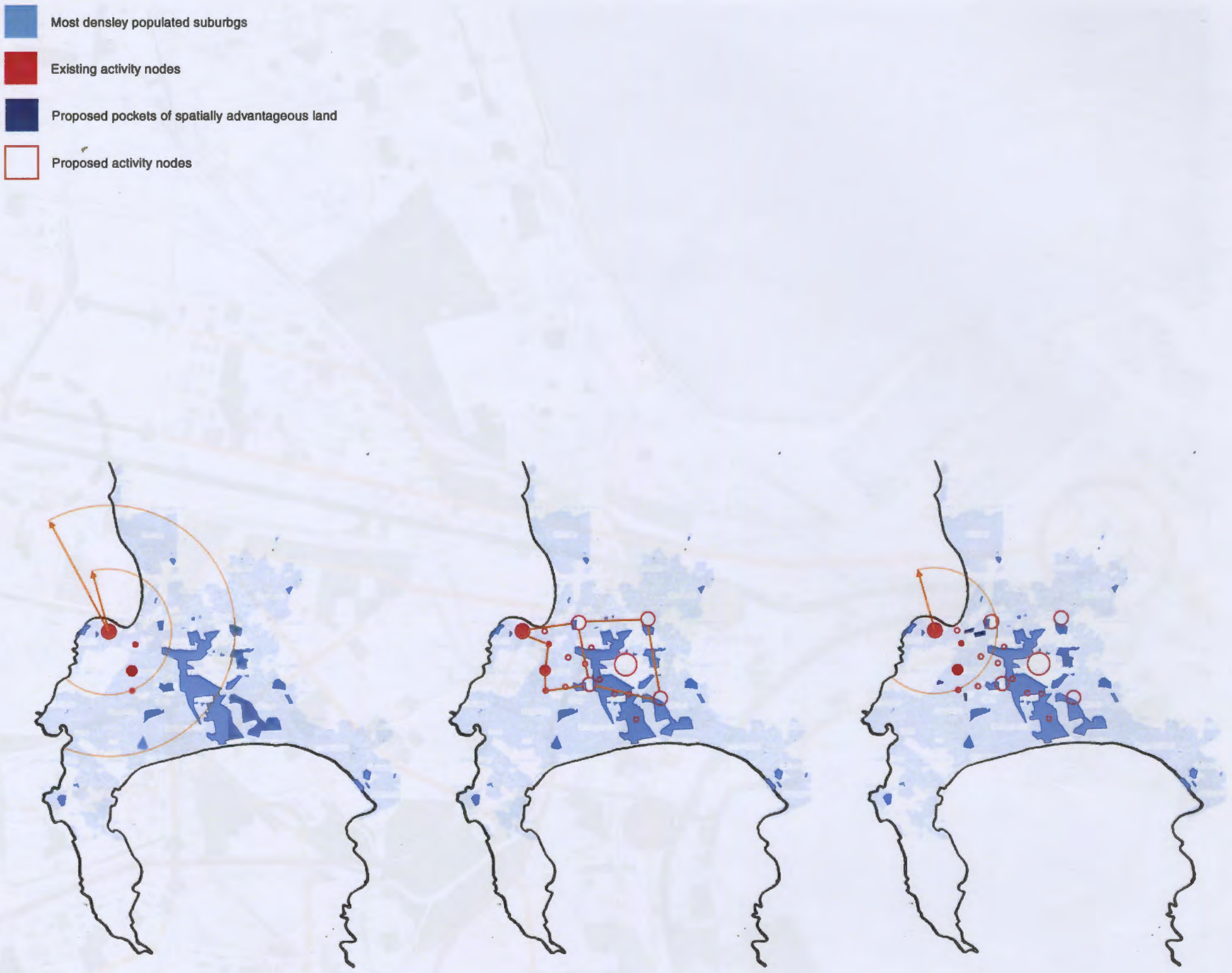
For this part of the overall proposal my project is coupled with its pair - Creative Housing (by Rob Richardson), and we worked together on the task of strategically framing and siting our intervention. Our shared findings are documented here, with my own commentary.

framing

In framing the project there have been two major considerations. Firstly, we have carefully considered the Municipal Spatial Development Framework [MSDF] for Cape Town, to ensure that its spatial strategy is reinforced at every step. (Planning and Development Directorate, 1999) At the same time, much of the vision of the MSDF is long-term and has yet to be implemented, and our project must therefore also consider the existing situation.

This first point must be considered in conjunction with the nature of our proposal, which is a careful, urban intervention of a limited number of social facilities and an area of subsidised housing. It is not an urban restructuring project, and is therefore dependant on the pre-existence of transport infrastructure and economic activity for its success.

Secondly, we have taken on board the idea that spatial disadvantage is a poverty trap in itself, and have therefore carefully considered the position of the project in order to offer residents the benefits and opportunities that come with well located land.



Existing situation - the most densely populated suburbs (6918 – 46510 people per km2) are situated on the outskirts of the city. (Strategic Development Information and GIS, 2006) The orange circles depict 10km and 20km radii from the city centre.

Proposed poly-nodal structure for the City of Cape Town. (Planning and Development Directorate, 1999)

Proposed sites (shown in dark blue) - small, well located pockets of land.

Existing reality

The most densely populated suburbs in Cape Town (Strategic Development Information and GIS, 2006) are also the poorest suburbs. The poorest people live on the outskirts of the city, far from economic activity, not by choice, but because there is insufficient affordable land closer to the city centre, or because squatting on the outskirts of the city is less likely to be aggressively opposed.

The unbalanced structure of the city demands lots of movement, at great costs in terms of infrastructure, pollution, energy consumption and public finance. For those without cars, on the other hand, public transport is inconvenient and expensive. (Planning and Development Directorate, 1999)

Proposed 'equity model' for Cape Town

The Municipal Spatial Development Framework for the City of Cape Town [MSDF] (Planning and Development Directorate, 1999) expounds a new structure for the city which promotes equity and integration, on the basis that all people should have access to a broadly similar range of opportunities and facilities.

The equity model is conceptualised as the distribution of a hierarchical system of transport interchanges and nodes of public facilities, connected by fast speed transport roads as well as 'streets' that integrate disparate urban fabrics through shared amenities. The vision is of a future city that offers choice and opportunity.

Pockets of spatially advantageous land

The poverty trap of spatial disadvantage includes remoteness, which is to say distance from political and economic activity, lack of agricultural resources such as well functioning land, and segregation, whereby people are not well connected in terms of physical, communication and market infrastructure. (Chronic Poverty Reduction Centre, 2008)

In terms of these criteria, and despite the drive to spread activity more equitably across the city, our framing of areas that have the potential to free people from the poverty trap of spatial disadvantage falls roughly within 10km of the city centre of Cape Town, around the existing activity nodes of the CBD, Mowbray, Claremont and Wynburg.


Wingfield
Cape Town
Salt River
Mowbray
Athlone
Gatesville
Claremont
Wynburg
Wetton

siting

The ingredients of the 'equity model' include primary nodes, secondary nodes, tertiary nodes, and the various levels of access that connect between them. (Planning and Development Directorate, 1999)

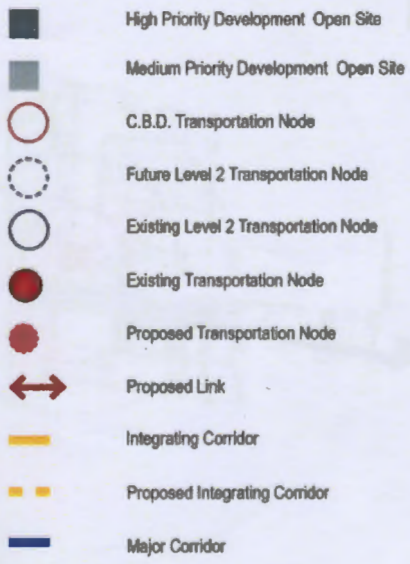
Primary nodes are the City of Cape Town and the proposed airport site.

Secondary nodes are Claremont and the proposed Wingfield, Belville, Manenberg and Khayeltisha sites. These sites are massive transport interchanges with large scale commercial and business activity. These primary and secondary nodes are connected by fast speed road and rail routes.

At the next level are the tertiary interchanges, small transport nodes and market hubs, where money is encouraged to circulate within the local economy. These nodes might be associated with tertiary education facilities, magistrate's courts, sports halls and so on.

Connecting the tertiary nodes are streets that have the potential to be integrating activity spines, where facilities are shared between diverse communities. These streets are an appropriate site for the level of facilities that our proposal offers - secondary school / primary school / primary health care facility and others.

Our search for an appropriate site therefore considered available pieces of land, next to integrating routes (see solid yellow lines in accompanying image), that fell within our previously delineated frame.



Proposed 'equity' model for Cape Town - map adapted from MSDF maps (Planning and Development Directorate, 1999)

parks and open spaces
industrial area
integrative corridor
commercial activity
proposed parks
sport and recreation facilities
possible sites
major transportation node
train station
railway lines

close to public facilities
close to recreational facilities
close to economic activity
close to shops commercial activity
access to integrated public transport systems

natural capital
close to some form of escape

residential (ha)	residential	public facilities and open space	public (ha)	total population	
16ha			17ha	14000	imizamo yethu
20ha			10ha	8143	maitland
29ha			14ha	11671	wynburg
12ha			6ha	5084	pinelands
14ha			7ha	5692	bishopscourt

imizamo yethu
3 creches / 6 primary schools / 2 senior schools / 1 public open space / 8 playgrounds / 2 sportsfields / 1 clinic / 1 day hospital / 1 community hospital / 1 community centre / 8 places of worship / 29 corner shops

maitland
1 creche / 3 primary schools / 1 senior school / 4 playgrounds / 1 sportsfield / 1 day hospital / 5 places of worship / 17 corner shops

wynburg
2 creches / 5 primary schools / 2 senior schools / 1 public open space / 6 playgrounds / 2 sportsfields / 1 clinic / 1 day hospital / 1 community hospital / 1 community centre / 7 places of worship / 24 corner shops

pinelands
1 creche / 2 primary schools / 3 playgrounds / 3 places of worship / 10 corner shops

bishopscourt
1 creche / 2 primary schools / 1 senior school / 3 playgrounds / 1 sportsfield / 3 places of worship / 13 corner shops

close to public facilities
close to recreational facilities
close to economic activity
access to integrated public transport systems
close to shops commercial activity
close to some form of escape

natural capital

close to public facilities
close to recreational facilities
close to economic activity
access to integrated public transport systems
close to shops commercial activity
close to some form of escape

natural capital

close to some form of escape
natural capital

close to shops commercial activity
close to economic activity

close to public facilities
close to recreational facilities
access to integrated public transport systems

testing 4 sites

Four potential sites were identified on or near an integrating, connecting route, close to a tertiary transport node.

Maitland site
Pinelands site
Wynburg site

A fourth site has been considered as it forms part of the City of Cape Town's palette of sites for land redistribution to previous owners of such land, and is situated comparatively close to the centres of Cape Town and Claremont.

Bishopscourt site

These sites were evaluated according to the following criteria, and the Wynburg site was chosen as the one which would offer residents the most choice and opportunity:

- close to existing public facilities (schools, clinics, places of worship, libraries)
- available natural capital (good environmental function of the land)
- close to recreational facilities
- close to some form of escape
- close to economic activity
- access to public transport
- close to shops and commercial activity

finding and exposing

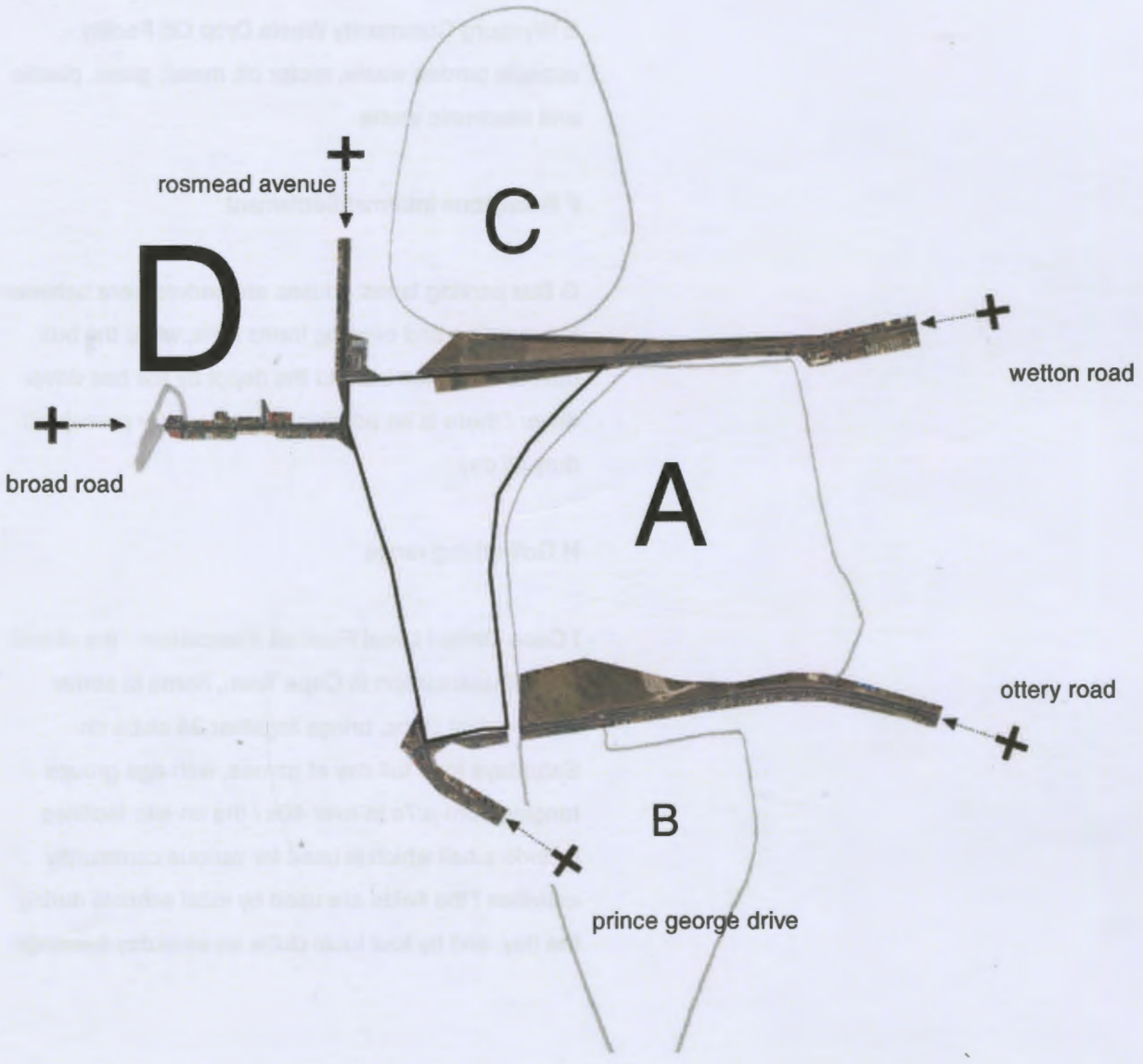
In investigating the site we have adapted a method explicated by Dutch urbanist, Raoul Bunschoten, in his book Urban Flotsam (2001).

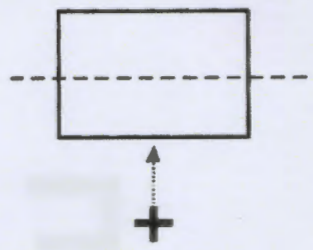
We undertook a series of walks, on different days and at different times, in order to uncover unexpected information about what goes on, on and around the site. The walks included walking towards, into, along and around the site, and speaking to whomever we encountered.

At the same time, we purposefully documented quantitative information about our site, including permeability, movement and uses (both buildings and loose activities).

The next pages record and draw some conclusions from our discoveries.

24ha site on Rosmead Avenue, in Wynburg





walk TOWARDS

09/03/30 [Monday] 5pm

A Youngsfield military administration, training and vehicle maintenance camp - the fields on the other side of the highway from the site are used to test drive vehicles that have been renovated / the military base was used as a refugee camp during the xenophobia attacks of 2008

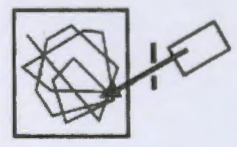
B Royal Cape Golf Club

C Kenilworth Racecourse Conservation Area [KRCA] - a 52ha conservation area of Cape Sand Plain Fynbos with a seasonal wetland / views of Table Mountain / 283 plant species of which 20 are endangered and two are endemic, 11 amphibians including the critically endangered mircro frog and cape platanna, many reptiles, birds and small mammals / safe place for kids to enjoy through environmental education programmes (Kenilworth Racecourse Conservation Area. 2008)

D Transport interchange - train / taxi / bus

A

D



walk INTO / ACROSS

09/03/31 [Tuesday] 2pm

E Wynburg Community Waste Drop Off Facility - accepts garden waste, motor oil, metal, glass, plastic and electronic waste

F Bonnytoun Informal Settlement

G Bus parking lanes - buses are parked here between the morning and evening traffic runs, while the bus drivers are taken back to the depot by the bus driver driver / there is an administration/security person on duty all day

H Golf driving range

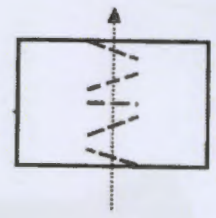
I Cape District Local Football Association - the oldest football association in Cape Town, home to some of the oldest clubs, brings together 24 clubs on Saturdays for a full day of games, with age groups ranging from u/7s to over 40s / the on-site facilities include a hall which is used for various community activities / the fields are used by local schools during the day, and by four local clubs on weekday evenings

E

F

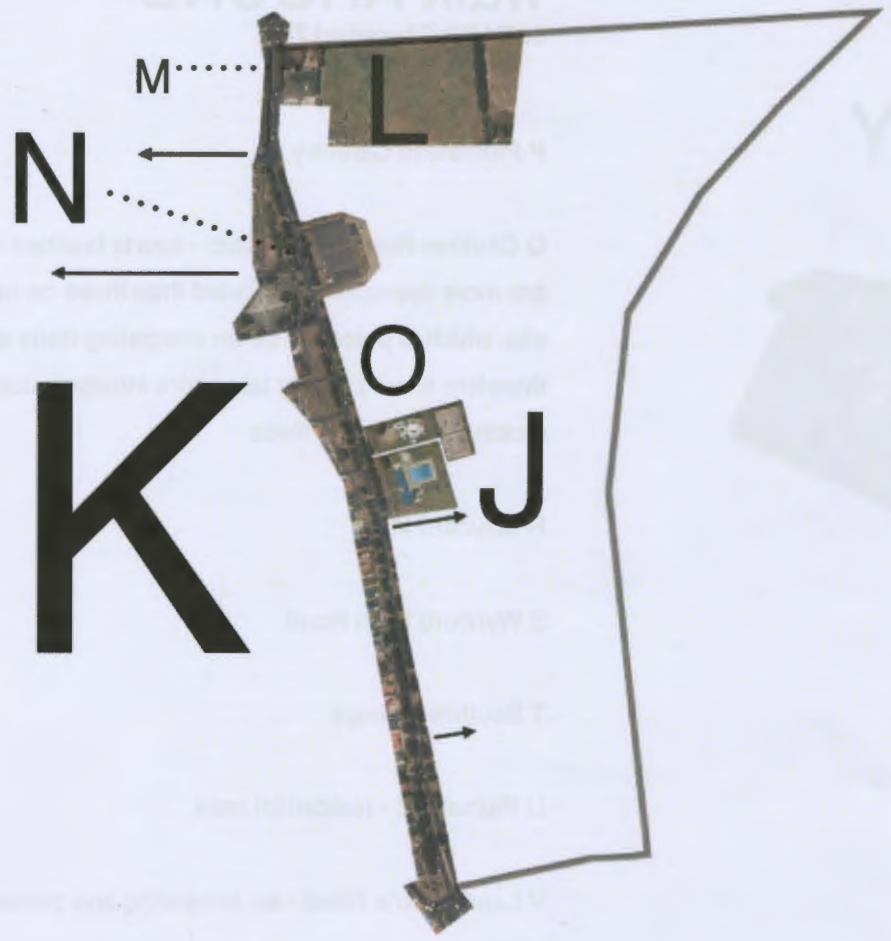
G

I



walk ALONG

09/03/01 [Wednesday] 11am



J Wynburg Swimming Pool - general use and school fun days

K Wittebome Community Hall - used for pension / disability / child benefit payouts, private functions such as weddings and commercial events/meetings. It has events every day of the week, during the day and evening, but is not completely booked up

L Wynburg Sports Club - the hall available at Wynburg sports club is used by a darts team, belly dancing group, two different churches, ball room dancing and kick boxing groups / the recreation facilities are used for ultimate frisbee and soccer training, school athletics (nearby schools use the facilities for a reduced fee) and recreation for pensioners (at no charge)

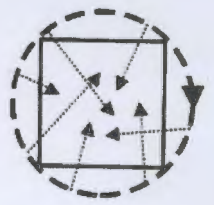
M Creche - the Wynburg Sports Club lends its facilities to a creche which is open from 7am to 6pm / the monthly cost of having a child in this creche is R500

N Men on the Side of the Road - a local NGO assists men looking for work by putting up a yellow flag from 7am / men affiliated with the NGO have valid IDs, work permits, and no criminal record / on a given day 80 men may come from all over Cape Town to wait on Rosmead Avenue, in the hope of getting picked up for a temporary job

O Novalis Institute - community centre and teaching institute, dedicated to developing the spirit of ubuntu through skills training with youth and adults / activities happen on site from 8am to 11pm all week and weekend

K

N



walk AROUND

09/04/02 [Thursday] 7am

P Plumstead Cemetry

Q Chukker Road Sports Club - sports facilities here are more appropriately located than those on our site, which is poised to be an integrating route and therefore should ideally take more intensely used facilities than sports fields

R Maynard Mall

S Wynburg Main Road

T Southfield shops

U Plumstead - residential area

V Landsdowne Road - an integrating and connecting route

W Wetton train station and industrial precinct

X Kenilworth - residential area

Y Landsdowne - residential area

Z Wynburg - residential area

P

S

Q

U

interviews

Willa Esmando

[Self-proclaimed Leader of Bonnytoun Informal Settlement]

Willa lived on the street for 12 years as a child and suffered from alcoholism and abuse. He is from Montague Springs.

He used to work at Christiaan Barnaard Hospital. Willa is currently the leader of Bonnytoun Informal Settlement.

Bonnytoun: 210 people (only 9 children)

Most of the people exist by sifting through rubbish bins. Its okay on Monday / Tuesday but the rest of the week gets difficult.

The crèches around the site say they are full because they don't want to take children from an informal settlement. One resident of Bonnytoun pays R20 a day on public transport to get their child to a school that is in Kenilworth.

In winter everything is much worse - TB, water on the ground, cold etc. The clinic in Wynburg main road takes everybody from Bonnytoun without a problem.

Willa wants to start a food garden.

Willa says they need a small hall and a teacher. The hall can be used for skills training, marriages, parties, funerals and as a crèche. (Everyone has a funeral plan. They pay R23 a week.

Willa says he doesn't need mnet inside because there is mnet outside. He can sit on his self-made stoep and watch the activity on the street.

Ottery Baptist church comes every Sunday for a prayer meeting, but not in winter when there is nowhere to meet because the road is flooded.

Most people are drinkers, and there were 20 people doing drugs but they have since stopped; now only 3 people do drugs.

Chantall & Mervin

[Residents of Bonnytoun Informal Settlement]

They need a crèche and a playground with grass or cement where their children can play.

The sorting station makes a lot of dust that they are all breathing in.

It is safe in the day but at night lots of strangers wander around and sift through stuff.

Jason & Gerald

[Visitors to the site]

Jason and Gerald live in Claremont, and come here to melt copper.

Mona

[Resident of Bonnytoun Informal Settlement]

Mona likes living here because it is close to everything: shops, police station, home affairs, electricity board and fire station.

The council has provided the houses with one long drop per two houses, which they come to clean out every so often.

There is water standing on the road in winter, and everybody gets sick, some people die.

The primary schools in the area are full so Mona's adopted child cannot stay with her.

They need materials to improve their homes but cannot afford to pay for them. The workers at the sorting station take all the useful parts for themselves and sell them, even though they aren't allowed to. If they can just get hold of some bricks, they can cover them with cement and make a floor.

Dorianne & Shari

[Creche staff]

The use of the creche costs R500 per month per child.

Open 7am – 6pm.

There are 32 children at the moment but they could take up to 50.

Albert September

[Facilities Manager at Wynburg Sports Club]

Wynburg sports club forms part of the Tygerburg Disctrict Football Association.

The hall is used for a darts club, belly dancing, 17 piece jazz band, kickboxing, church on Sundays (2 different denominations), ballroom dancing and red cross training.

Pensioners and non-profit organisations use the hall and recreation facilities for free.

There is a crèche around the corner.

Schools pay R250 to use the grounds for an athletics day.

Albert is the chair of the FMC [facilities management committee] for this area. The FMC is answerable to the LSC [Local Sports Council].

The FMC arrangement means that council pays for the upkeep of the grounds of Wynburg Sports Club.

The land is currently given to Wynburg Sports Club on a 99 year lease. It is proposed that the sports club partner with council as a closed corporation to provide sports and recreation to the surrounding community. Albert likes this idea.

On Mondays the fields are used for ultimate Frisbee, and the rest of the time by 23 soccer teams from u/7s to over 40s.

There are five primary schools and two secondary schools that use the Wynburg Sports Club facilities:
Cedar House
Ottery Road Methodist
Aduna High (for athletics)
John Wycliffe (primary school)
Wynburg Secondary School

There is a lack of crèches in the area.

Leon

[Caretaker of Wittebome Civic Centre]

Commercial rate: R251 / hour
Private rate (wedding): R165 / hour
Community charity rate (red cross): R104 / hour

Payout days run three in a row: pension / disability / children

Collins

[Driver of the bus drivers]

Collins is the driver for the bus drivers. In other words, when the bus drivers bring their buses here after the morning traffic run, he takes them back to the nearest depot where they wait until he brings them back for the evening traffic run. There is always an administration/security person with the buses.

Collins says there is always a police presence at this site, just checking on what is going on.

Annalise

[Manager of the Novalis Institute]

Novalis means "that which is of the new" and the institute promotes learning in the spirit of ubuntu.

The goal of the centre is to create a holistic learning and living environment at the centre itself, and by going out into schools prisons to promote their beliefs and develop skills and community capacity. Novalis collaborates with other NGOs such as SAIN, OASIS, MSR.

Novalis works with Bonnytoun House next door, which houses 300 children between the ages of eight and 18 who have committed serious crimes and are awaiting trial.

The building is in use from 8am to 11pm during the week and on weekends. The Novalis Institute hall can take between 100 and 200 people. There are also breakaway spaces around the hall that can accommodate groups of 15 – 20 people. There is also a library that is open to anyone, with over 1000 books.

There is also a small garden and recycling centre.

They are hoping to extend their centre with a youth dorm where students from other countries can stay with students from South Africa and where they can learn from each other.

The land is government owned but given over to the Novalis Institute on a 25 year lease, and Novalis is currently applying for a new zoning description: community facility and place of instruction.

They have had a number of break ins and have had things such as metal taps stolen. They think it is people from Bonnytoun Informal Settlement.

Adam [bricklaying, plastering, skimming, tiling] / Francis [handyman] - Men on the side of the road

Adam and Francis live in Observatory, it takes them 20 minutes to get to Rosmead Avenue by train. On good weeks they may get two or three days of work.

Gasante Abbass

[Facility Manager at the CDLFA]

This football association has some of the oldest clubs in the western cape: Spenston is 105 years old. The association was started by William Herbert. The site is given over to football on a 99 year lease. Eric Doorman and Mr Trout have been working at club for 40 years.

The association has 25 member clubs and16 fields: 10 senior, 6 junior, supporting age groups u/7s to over 40s. SAFA also use their facilities for games.

Other fields that are associated with CDFA are spread over the city:
Kromboom/Belgravia (2) / Ottery (2) / Retriet (3) / Chukker (1) / Heathfield (1) / UCT

Surrounding schools also use these fields for sports events and afternoon training:
John Wycliffe Christian School
Rhoda Tut Atfaal Day School
Archibishop Desmond Tutu Ikapa United
Wynburg High School

Interprovincial tournaments happen here; clubs come from all over the country.

Football games only happen on Saturdays - Sunday is family day. In the afternoons, from about 4.30pm, the four residents clubs train on the fields.

Water for irrigation is the biggest expense for the club. They could do with some netball and tennis (summer sports) to bring in income in summer. The Wynburg cape district mardi gras is a fundraising event for the CDFA, to get them through the summer.

The current facilities include a hall, kitchen, offices, toilets, changing rooms, tuck shop.

The hall is used for ball room dancing (on Tuesdays and Thursdays), referee training, fundraising for the teams (one the teams has just gone to Dallas, Texas), weddings, meetings, Pick 'n Pay training days and funeral teas. It costs R800 to hire the hall, but if it is a funeral he only charges R100.

The kitchen is rented out separately, which means the hall cannot be used for functions when the kitchen is being used for sports days. They need more toilets.

FMC – LSC – District – Ward

FMC – Facilities Management Committee
LSC – Local Sports Council

The government is promoting the sharing of resources (as is already happening, between the clubs on the site and the local schools) by offering help with maintenance to clubs that pool resources. This sharing of facilities is managed by the FMC, which is headed (for this area) by Albert September from Wynburg Sports Club.

Adam

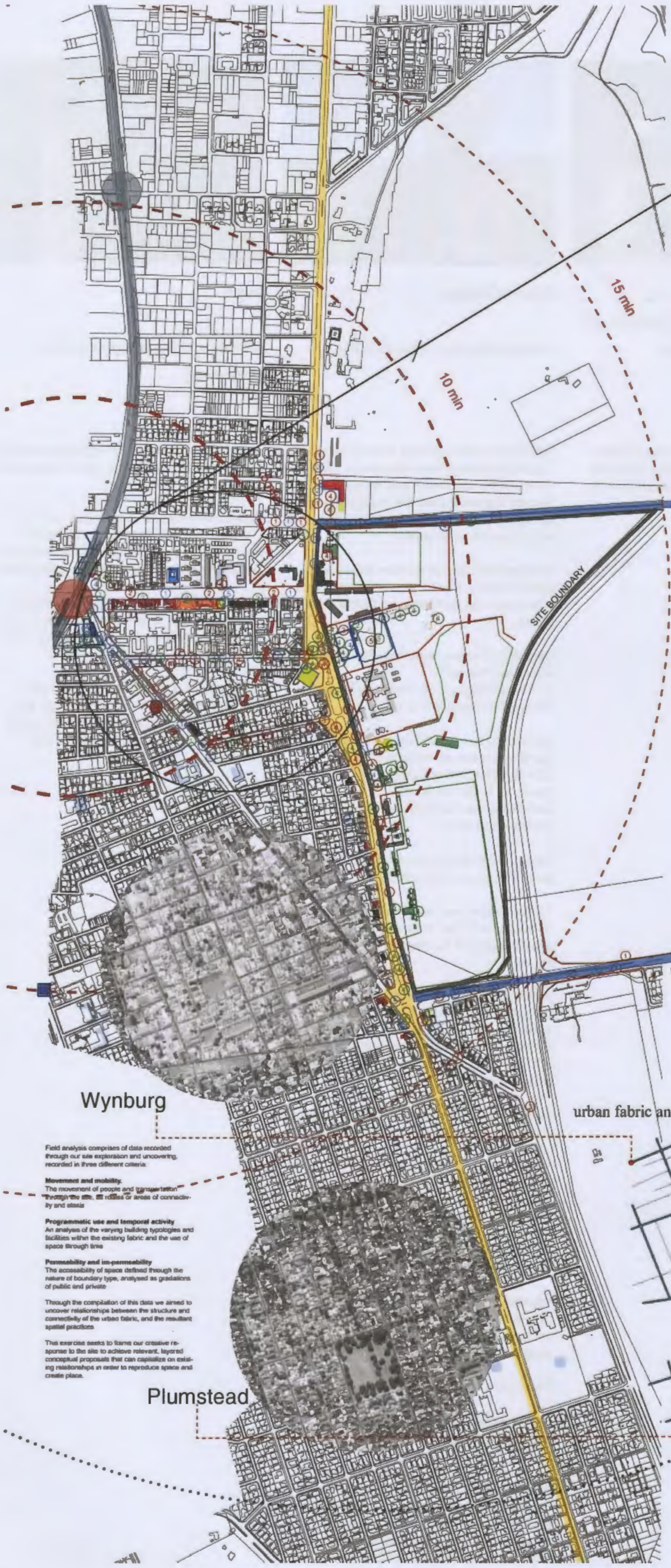
[Resident of Bonnytoun Informal Settlement]

Adam is in the process of enlarging his shack. His shack is relatively well made, with a concrete floor that he poured himself.

He lives there with his son François and he is teaching him how to build. He has smaller children but they are living elsewhere because they cannot find a place for them in school here.

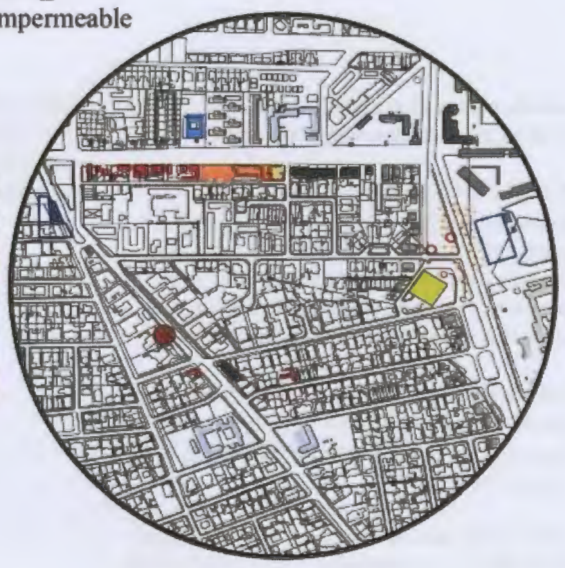
He is a builder by trade and gets occasional work on different sites. He is very happy here, except he wants the (sic) municipality to say that it is ok to live there.

He says that it is safe to live here but there is no formal leadership. It is in the evenings that he feels unsafe because there are often people lurking around the streets on his end of the settlement.

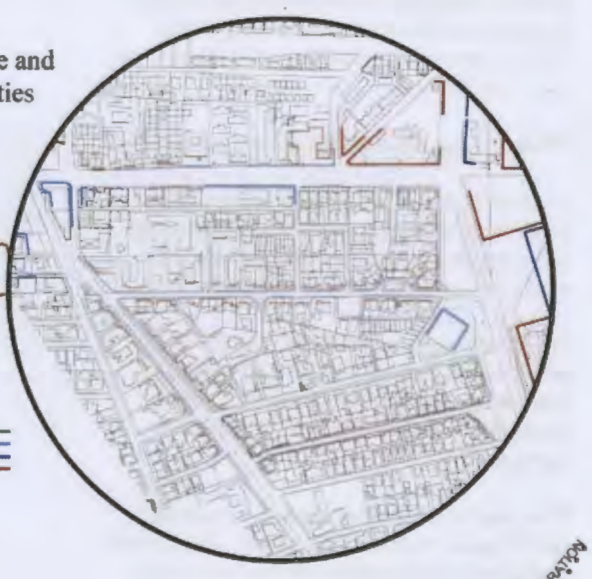


mobility and movement

edge conditions_
permeable/impermeable



program, use and
public facilities



urban fabric analysis

Field analysis comprises of data recorded through our site exploration and uncovering, recorded in three different criteria:

Movement and mobility
The movement of people and transportation through the site, its nodes or areas of connectivity and stasis

Programmatic use and temporal activity
An analysis of the varying building typologies and facilities within the existing fabric and the use of space through time

Permeability and im-permeability
The accessibility of space defined through the nature of boundary type, analysed as gradations of public and private

Through the compilation of this data we aimed to uncover relationships between the structure and connectivity of the urban fabric, and the resultant spatial practices.

This exercise seeks to frame our creative response to the site to achieve relevant, layered conceptual proposals that can capitalize on existing relationships in order to reproduce space and create place.

\+ clear structural HIERARCHY
good residential DENSITY
ACCESS to a range of FACILITIES
houses face STREET

\- open RECREATIONAL space
ROAD RESERVE

\+ open RECREATIONAL space
average DENSITY
ACCESS to a range of FACILITIES

\- no HIERARCHY
houses are walled in

WALK AROUND - FRAME OF EXPLORATION

data collection

During the walks we captured data about mobility, permeability, different uses associated with buildings, and loose activities happing on and around the site.

The accompanying drawing summarises the information we collected.

We also looked at the surrounding urban fabrics of Wynburg and Plumstead, which are very different, and took lessons from these residential areas to carry through into our urban design.

Wynburg is a differentiated fabric, with a clear hierarchy of places, some very exposed, on a main road, and some more private, on a narrow lane. The primary road through the area ends at a taxi rank, and is dotted with schools and corner shops.

Plumstead (the residential area), on the other hand, is characterised by an even urban grid with no sense of hierarchy. Every street is the same width and length; there are very few primary elements, no shops, and no activity.

urban design

For this part of the overall proposal my project is coupled with its pair - Creative Housing (by Rob Richardson), and we worked together on the task of designing a framework for the site as a whole, each bringing our specific perspective that comes out of our individual research. Our shared outcomes are documented here, with my own commentary.


Wittebome
Community
Centre
Wynburg
Rosmead Avenue

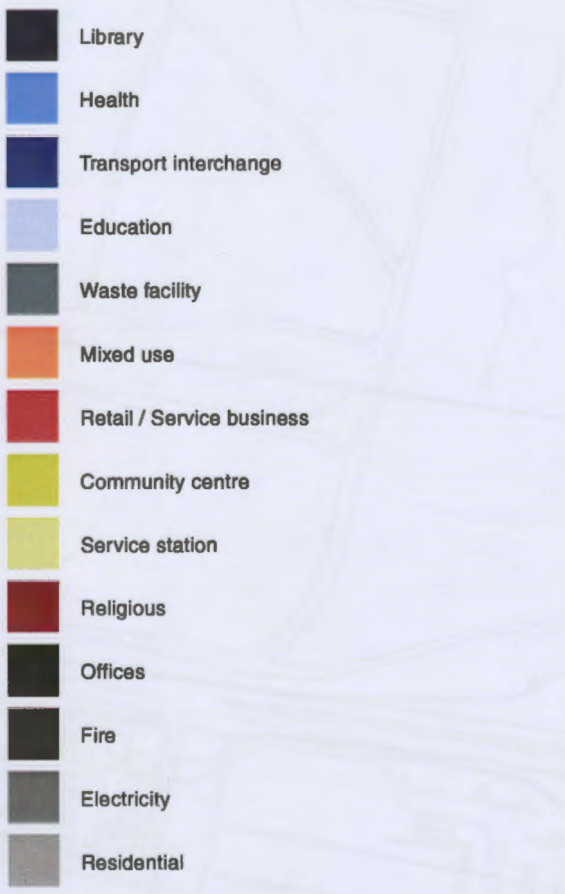
urban imaginings

Certain principles have emerged that guide our response to the site at an urban scale. These principles are informed by our positions with regards to our own individual part in the project, which bring different perspectives. Other principles materialise as a response to existing site conditions.

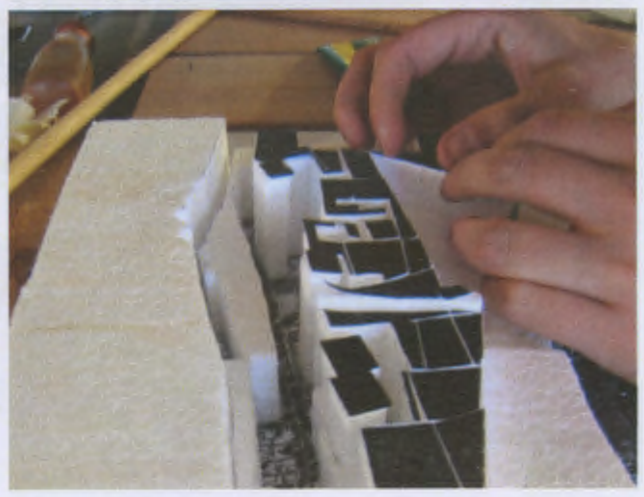
Two main ideas came to the fore early on, and are represented in the accompanying collage.

Firstly, it was seen as important to retain as many as possible of the existing buildings and activities on the site. Intervention occurs around and between existing buildings, in order to afford the settlement the richness of historical layers.

The second is to imagine an urban fabric where the network of public space is as important as the buildings, rather than individual buildings being the building block of the settlement. These ideas are explored through models and collages that play with positive and negative shapes, where what is typically seen as the 'back'ground is seen as the 'fore'ground, and these collages are overlaid with mappings of the existing conditions.



Existing uses with early spatial concept overlaid. (This collage should be viewed in conjunction with the collage on the next page.)



Early exploratory models

principles of the urban design

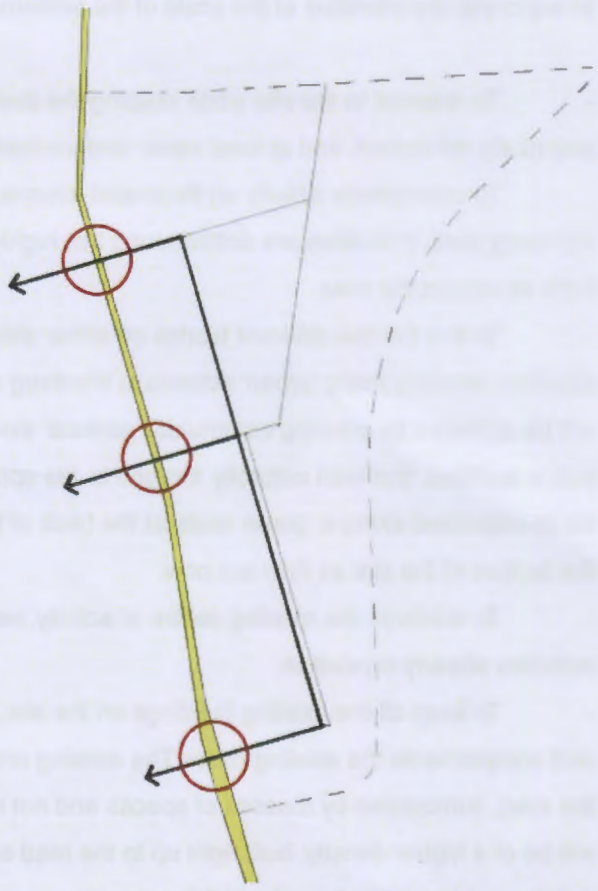
In exploring opportunities at the scale of the settlement as a whole, the following priorities were identified:

- To respond to the site while keeping the overall spatial framework for the city in mind, so that it is potentially reinforced, and at least never undermined, by our proposal.
- To concentrate activity on Rosmead avenue, the proposed 'integrating route' between our site and Wynburg itself. If facilities are dotted along this highly accessible road, they are visible and accessible to people from all around the area.
- To knit the two different fabrics on either side of the road together further, by celebrating the existing situation whereby many 'urban' schools in Wynburg use the sports facilities currently located on our site. This will be achieved by creating community 'gaskets' along Rosmead Avenue – little public places surrounded by public facilities, that lead naturally through to the sports fields against the M5. The sports fields themselves will be re-organised along a 'green' route at the back of the site, next to the M5, as opposed to all agglomerated at the bottom of the site as they are now.
- To reinforce the existing centre of activity, next to the Wittebome Community Hall, where many different activities already crystallize.
- To keep all the existing buildings on the site, but re-imagine a new spatial order which both contrasts and complements the existing order. The existing order is of isolated object buildings, set back very far from the road, surrounded by masses of spaces and not relating to the street or each other. The new spatial order will be of a higher density, built right up to the road and will use all available space, and consider the quality of outside space as much as the buildings.
- The layout of the site will be differentiated and hierarchical to create choice and variety. Plots will be very different, some on a main road, some on a narrow lane, and some next to a sports field. The hierarchical layout will mean that activity will naturally occur in some places more than others (although it cannot necessarily be predicted where), which in turn opens up the possibility of real urban qualities emerging, where interdependent activities can support one another.

The dark gray highlights the existing buildings on the site, 90% of which are going to be kept. (This collage should be viewed in conjunction with the collage on the previous page.)

overall urban design

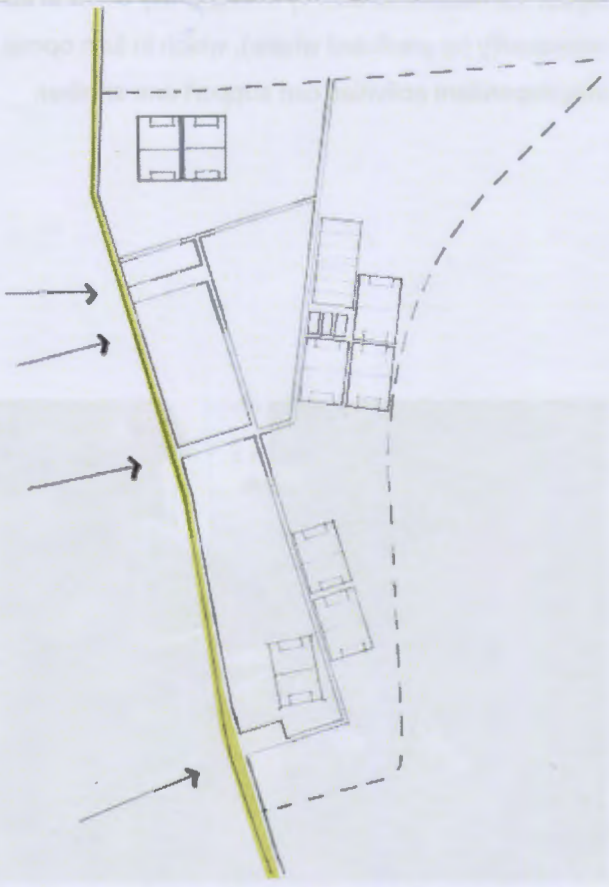
Existing situation (integrating street - Rosmead Avenue - shown in yellow)



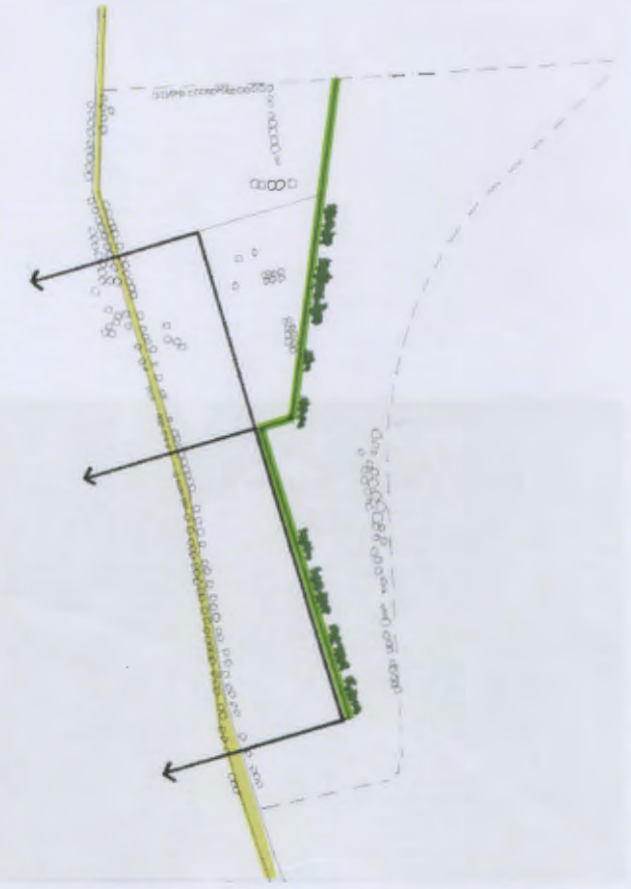
Proposed primary structure for site (red circle = proposed cluster of facilities)

Proposed facilities clustered around primary access routes

Proposed link between existing schools and newly configured sports facilities



Primary structure and newly configured sports fields



Primary structure and proposed 'green route' next to sports fields

Site plan, not to scale

A Phasing Model

B Phasing Model

phasing

Part of my focus has been how to ensure that the settlement has a sense of place from the beginning, despite the fact that not all of the facilities and houses will be provided in one go, and nor should they be. By providing the facilities and housing slowly over time, there is an opportunity to make adjustments, for residents to make known what facilities they would most value, and for different architects, developers or home builders to have a hand in defining the character of the place.

Of concern is how to make the overall framework legible so that future development builds on what has come before, and the legibility of the framework comes from the legibility of the relationship between buildings and space.

The accompanying phasing models test two different possible phasing strategies. The first (A) shows development occurring first around the three nodes of activity (social facilities shown in blue on the model), and along the main structuring streets. The second (B) shows development occurring wholly around the three nodes of activity, with future development to bridge the gaps between the three nodes. Both strategies are a possibility, but model B is preferred because phase 1 would include a range of housing typologies (and therefore income brackets), whereas model A phase 1 would only include social facilities and the most high market housing typology.

density / different housing typologies

Phase 1

Phase 2

Phase 3

High density subsidy housing

Total area: 7.8 ha
Plot size: 105m2
Number of dwelling units per plot: 3
Net density: 285 DU/ha
Total dwelling units: 2227
Population/ha: 885
Sub-total population: 6906

Medium density subsidy housing

Total area: 3 ha
Plot size: 130m2
Number of dwelling units per plot: 1
Net density: 76 DU/ha
Total dwelling units: 234
Population/ha: 238
Sub-total population: 727

Starter subsidy housing

Total area: 3.1 ha
Plot size: 180m2
Number of dwelling units per plot: 1
Net density: 125 DU/ha
Total dwelling units: 395
Population/ha: 387
Sub-total population: 1225

Mixed commercial and residential
High density subsidy housing
Medium density subsidy housing
Mixed commercial and residential
Social facilities
Existing buildings

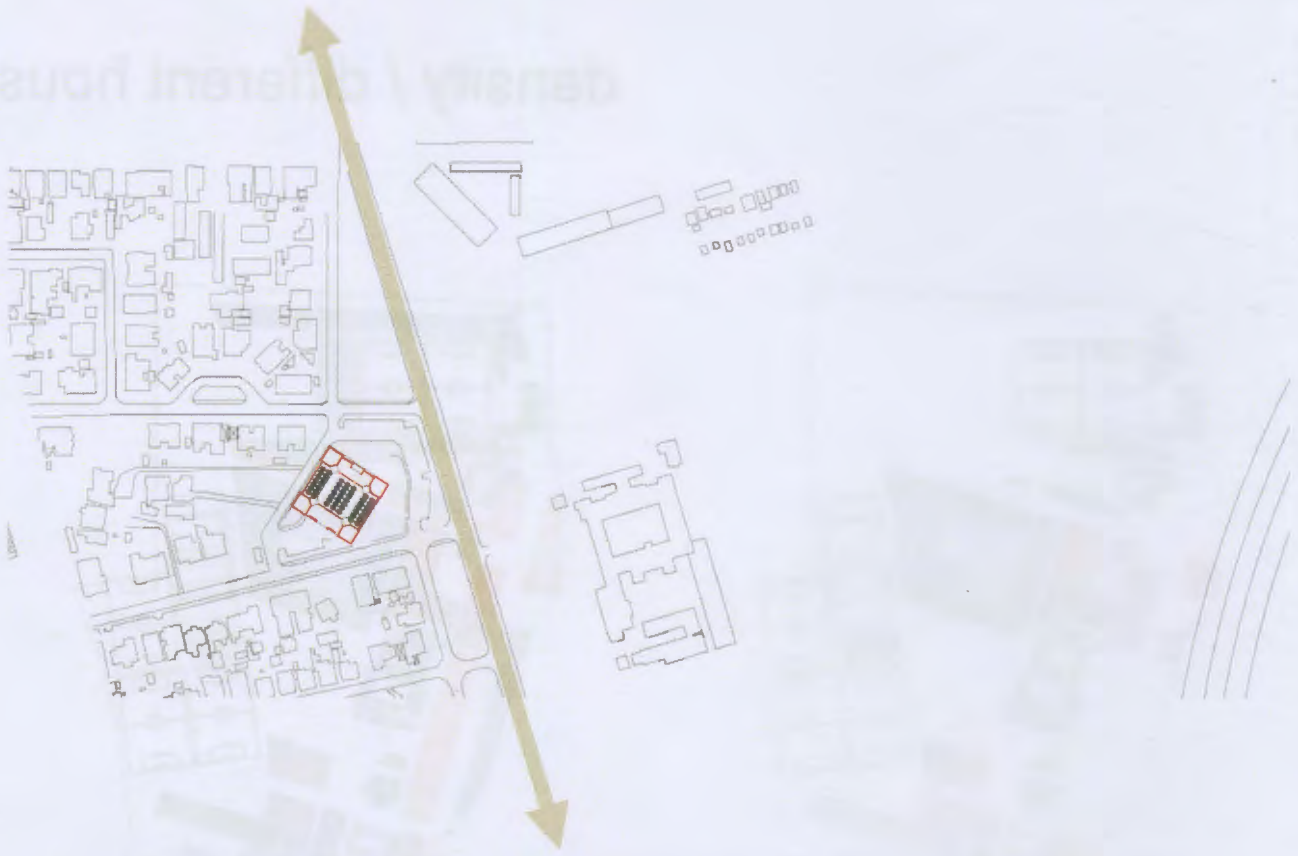
The mix of housing types yields a net density of 203 dwelling units per hectare, but because of the large amount of the site given over to sports fields the gross density drops to 62 dwelling units per hectare. We consider the settlement to be of medium to high density and a very livable environment. The relatively low gross density is acceptable on the basis that the sports fields are used by schools and residents who live within a wide radius of our site.

In total there are 2857 dwelling units across the whole site, which yields a population per hectare of 1511, and a total potential population of 8859.

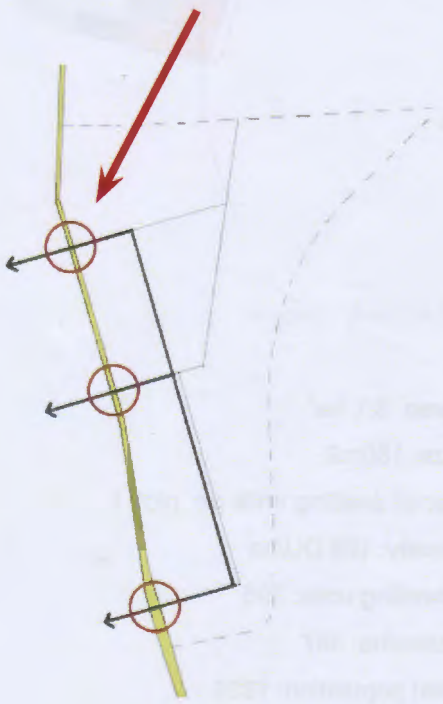
Wittebome cluster of facilities

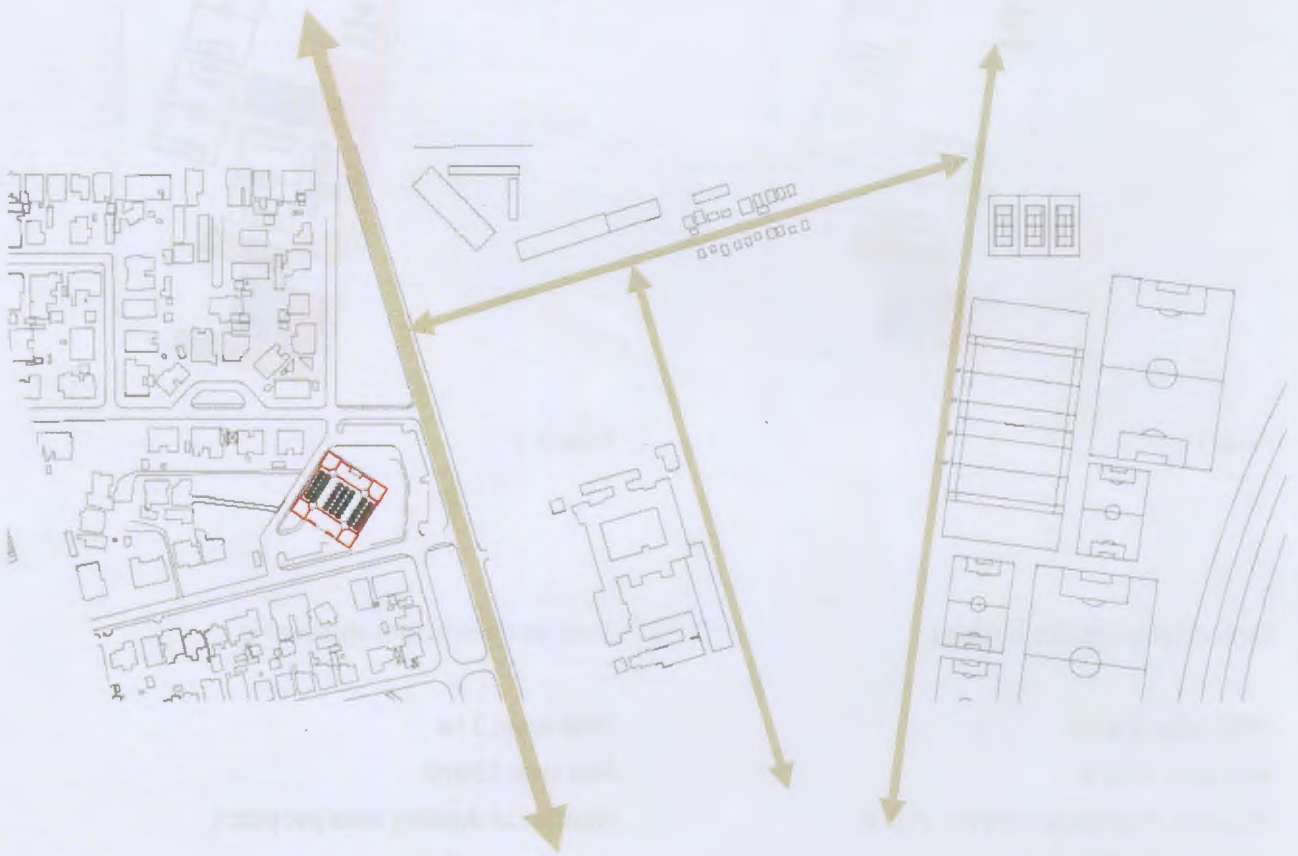
Of the three clusters of social facilities that are proposed, the one centred around the existing Wittebome Civic Centre is the most significant in the hierarchy, largely due to the events hosted in the hall itself and the spin off activities which result (these are documented in the 'siting' section).

In light of this, my project considers the design of the public space and social facilities at this node, but the principles applied here may well be applied at the other nodes.

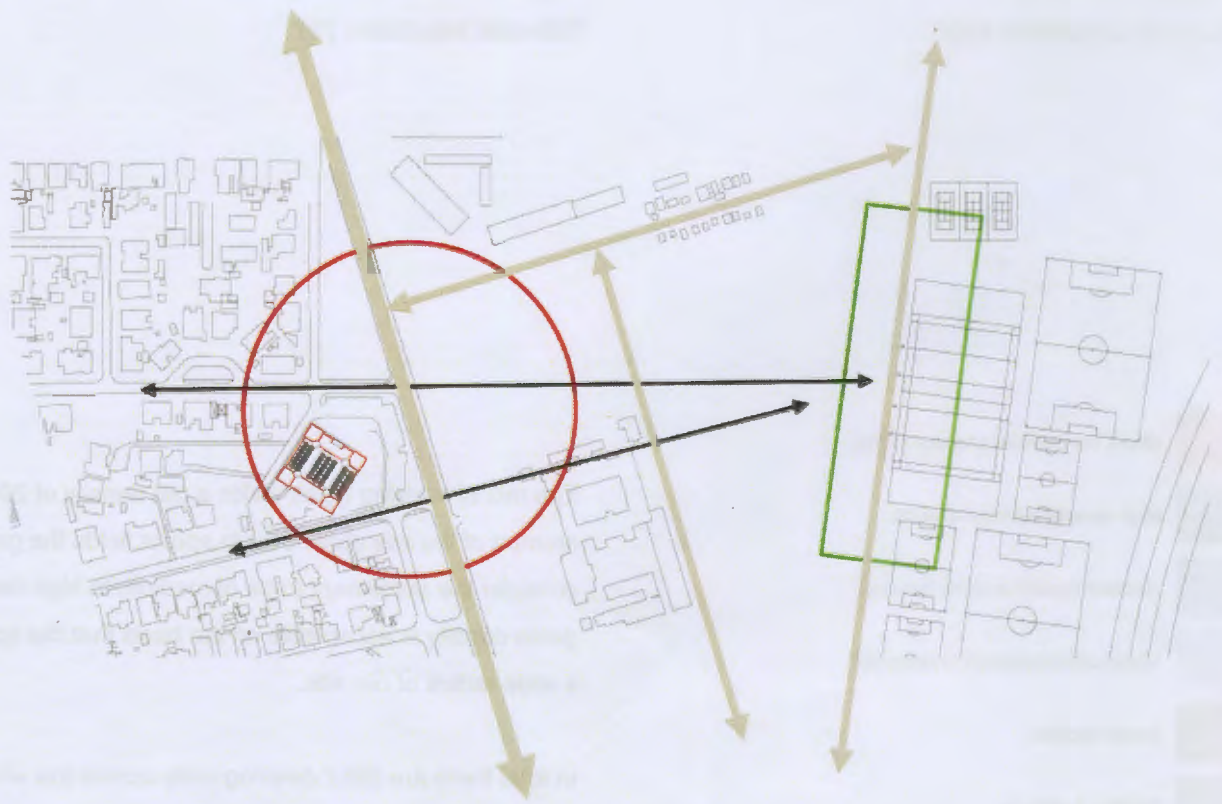


1 Existing situation, showing integrating street - Rosmead Avenue - and all existing buildings, including Wittebome Civic Centre



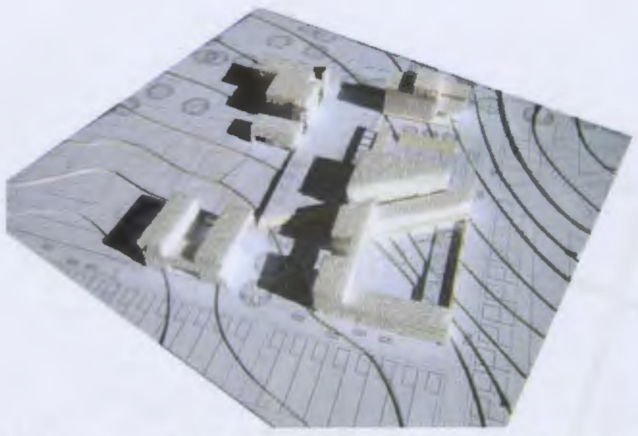


2 Proposed primary access routes and new configuration of sports fields



The accompanying diagrams (right) show the existing situation at this node, the new primary access routes, and the conceptual idea of linking Wynburg to the 'green / sports' route at the back of the site through a cluster of social facilities.

3 Creating links from Wynburg, across Rosmead Avenue and through the new development to the sports fields against the M5



Looking from the subsidy housing through the public space to Rosmead Avenue

Looking from Rosmead Avenue through the public space to the subsidy housing

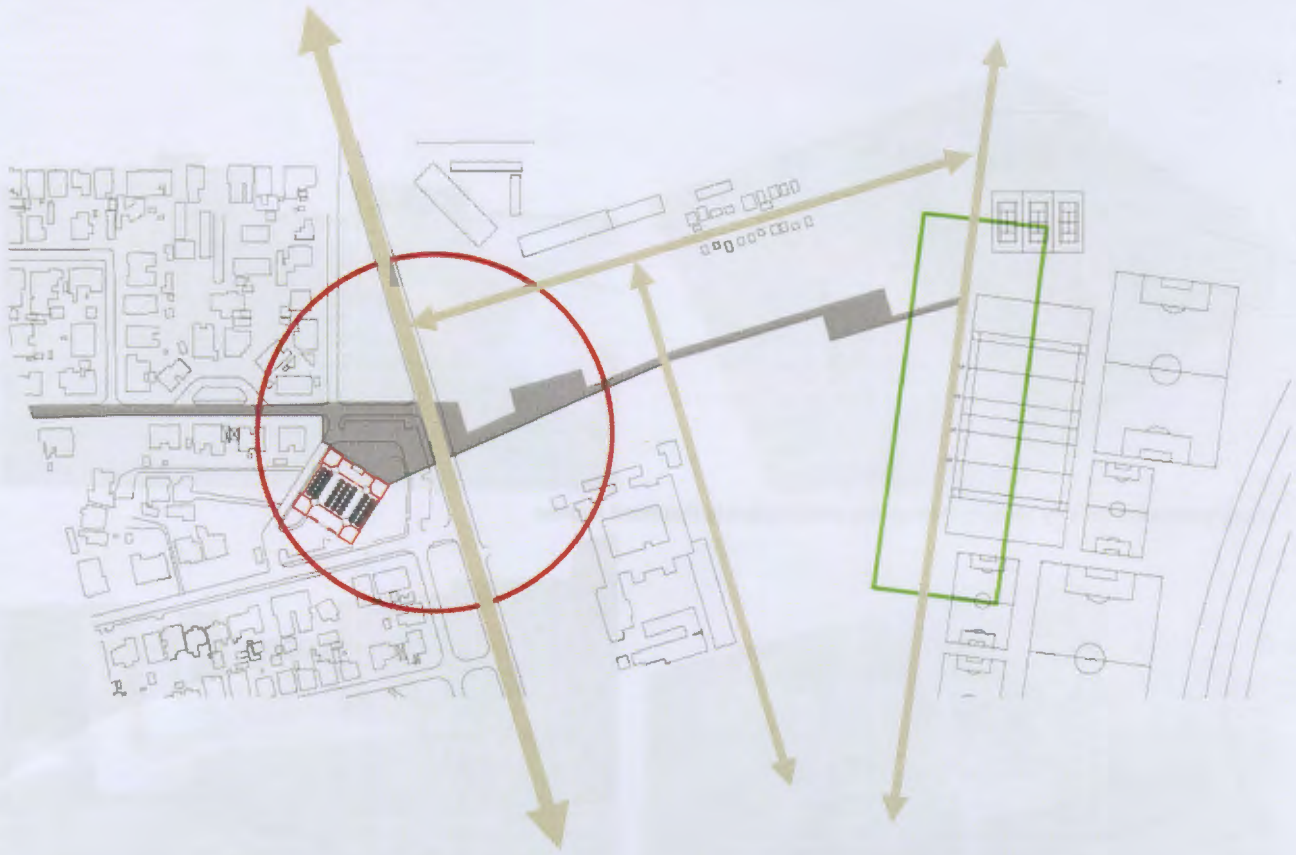
These images show the initial urban design for the Wittebome cluster of social facilities, and early responses in terms of a cluster of buildings that make the public space legible, but leave room for other facilities to come later.

This urban design is a very literal translation of the intention to connect from Wynburg, across Rosmead Avenue into the new development, and to provide the facilities in such a way that they are not isolated in the middle of the development, but tied to very accessible routes and visible and inviting to people from a wide variety of neighbourhoods.

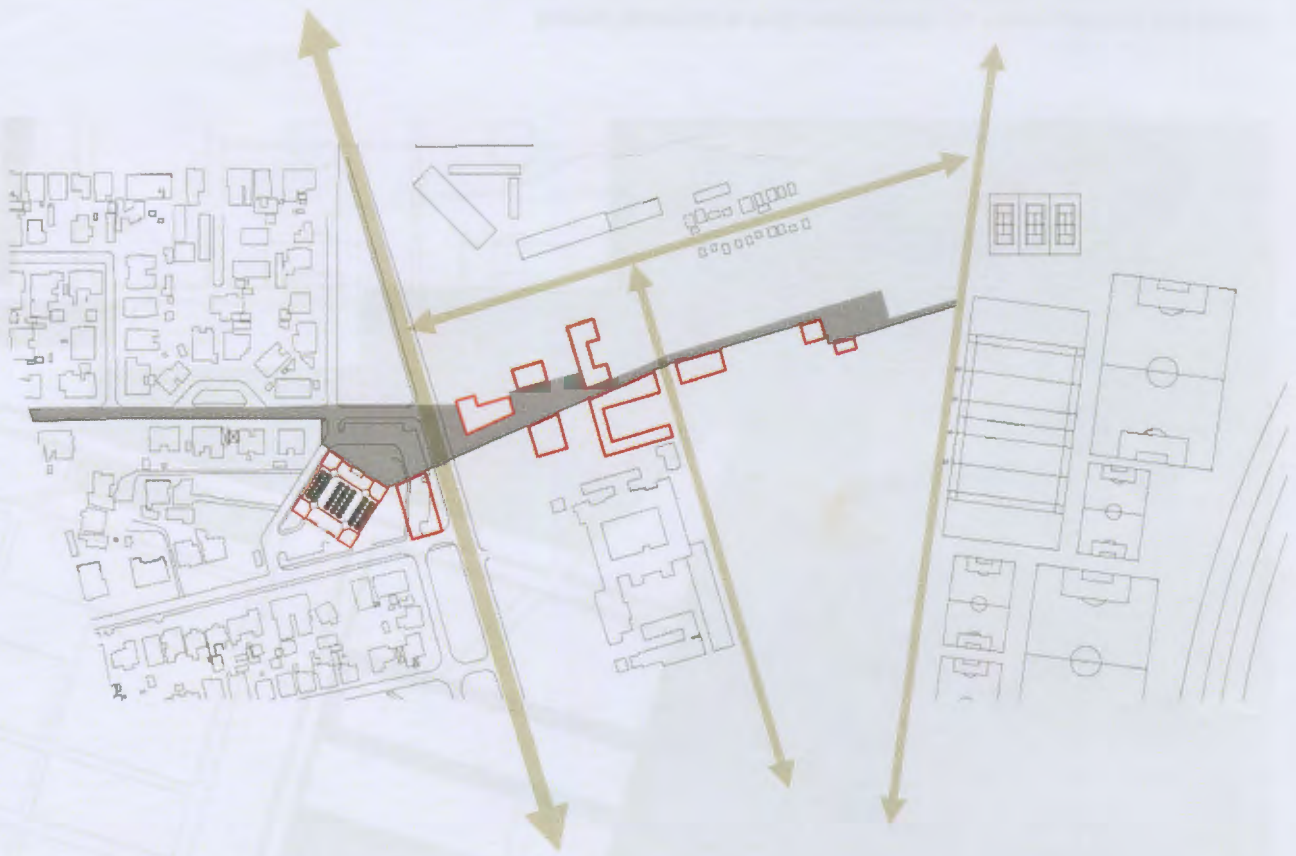
1:500 models that test the idea of a group of facilities that articulate the public space that connects from Rosmead Avenue into the subsidy housing

Urban design overlaid on aerial photograph, not to scale

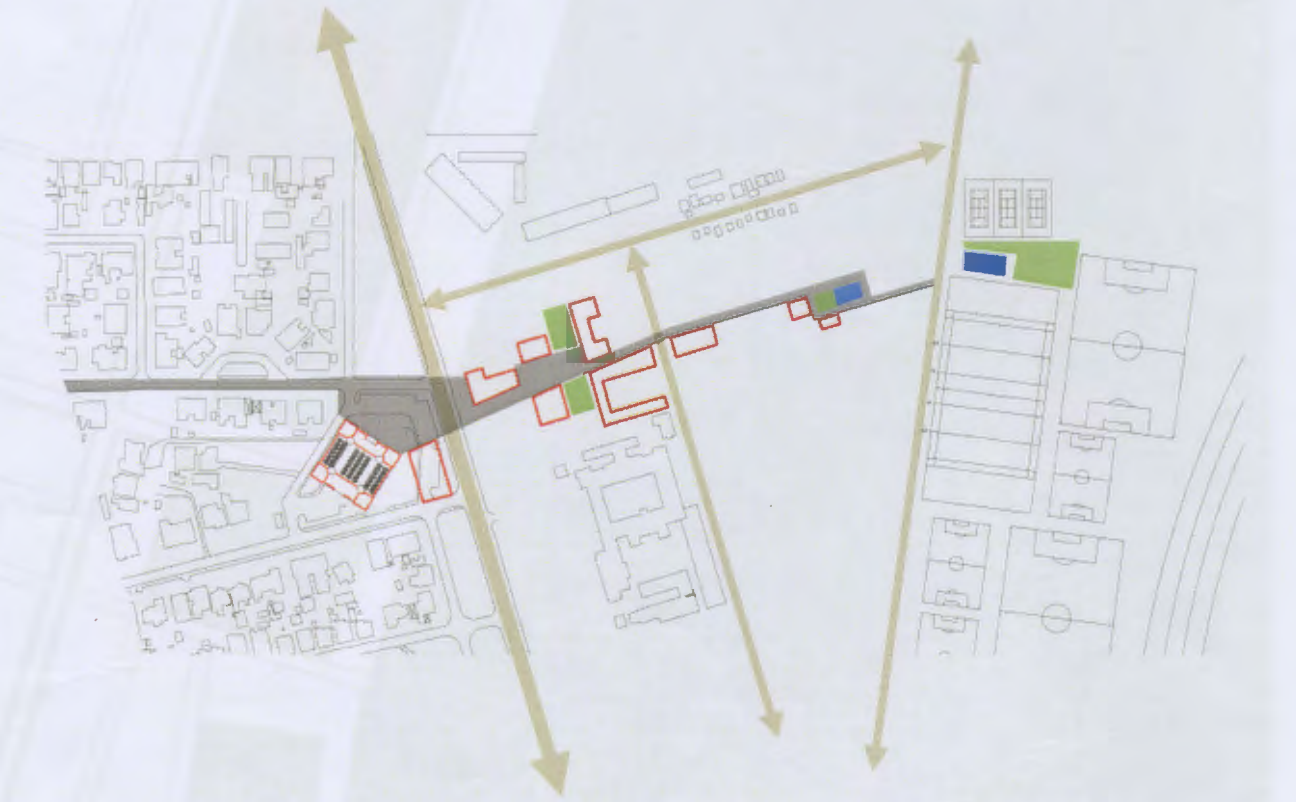
new urban design



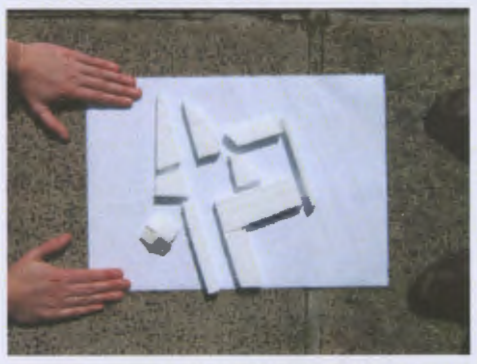
4 Public space system from Wynburg, accross Rosmead Avenue to the sports fields

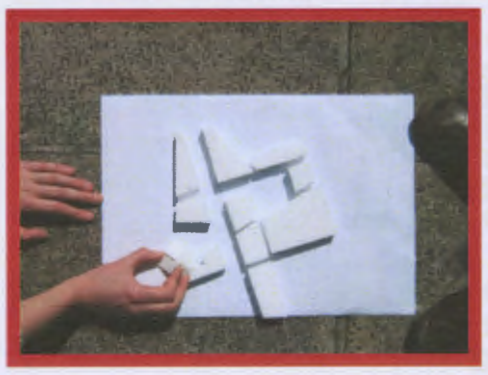


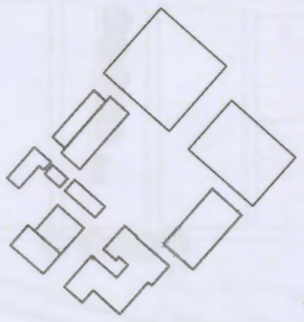
5 Social facilities clustered around and articulating the system of public space

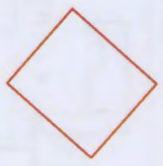


6 Different types of public spaces and related green and water systems



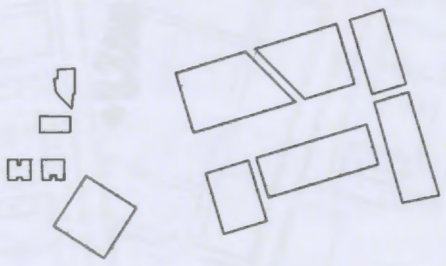


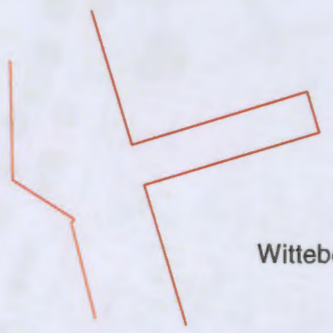




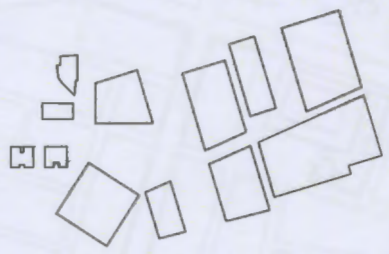
Greenmarket Square, Cape Town 1:4000

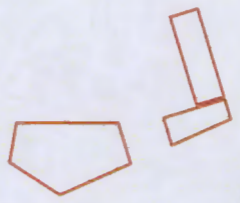
Campidogliio, Rome 1:4000





Wittebome, Cape Town [test 1] 1:4000





Wittebome, Cape Town [test 2] 1:4000

The urban design evolved to better consider the scale and quality of the network of public space at the Wittebome cluster of facilities. I made massing models of different options and tested them in terms of shadows across the public spaces in summer and winter, and looked at the scale of other public spaces around South Africa and the world.

Although the concept remained the same, the system of public space changed from one big wide avenue linking from Rosmead Avenue straight into the site, to a series of smaller squares along a route, each with a slightly different character. The route is a continuation of the route from the train station to the Wittebome Civic Centre, which has a lot of pedestrian traffic.

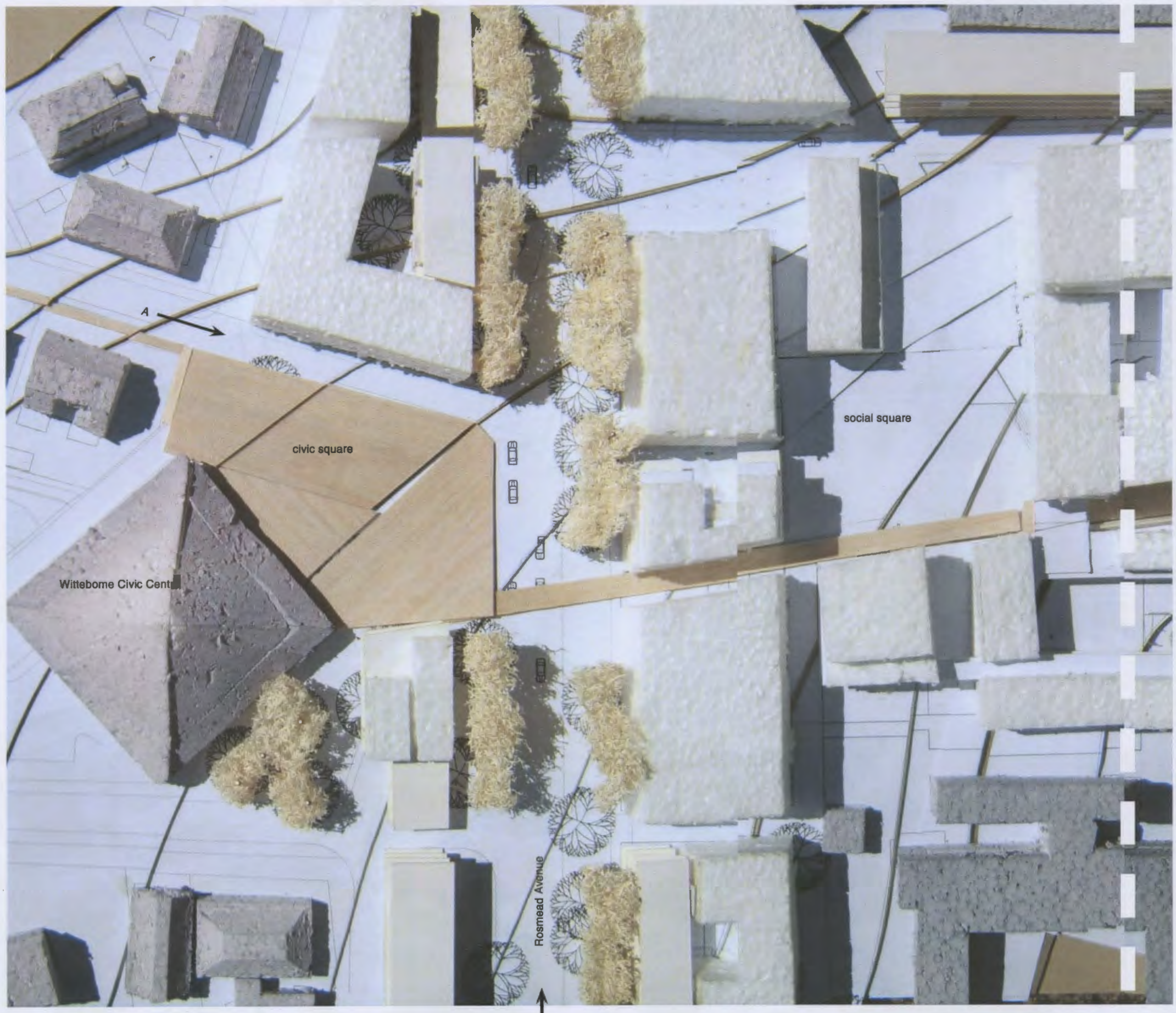
At the same time, the decision was made to intervene here on the other side of Rosmead Avenue from our site, in order to make a more defined space around Wittebome Civic Centre.

The first space is next to the existing Wittebome Civic Centre, and is crossed on one side by Rosmead Avenue, and is therefore the most open and civic. The next one is just inside the site, surrounded by social facilities but more intimate than the first. The third is well into the housing area, and provides relief within what will be a high density area, and is coupled with retention ponds for run off water from the road and a playground. The route opens up finally to the green 'route' at the back where all the sports fields are located, and detention ponds that hold run off water to water the sports fields in summer.

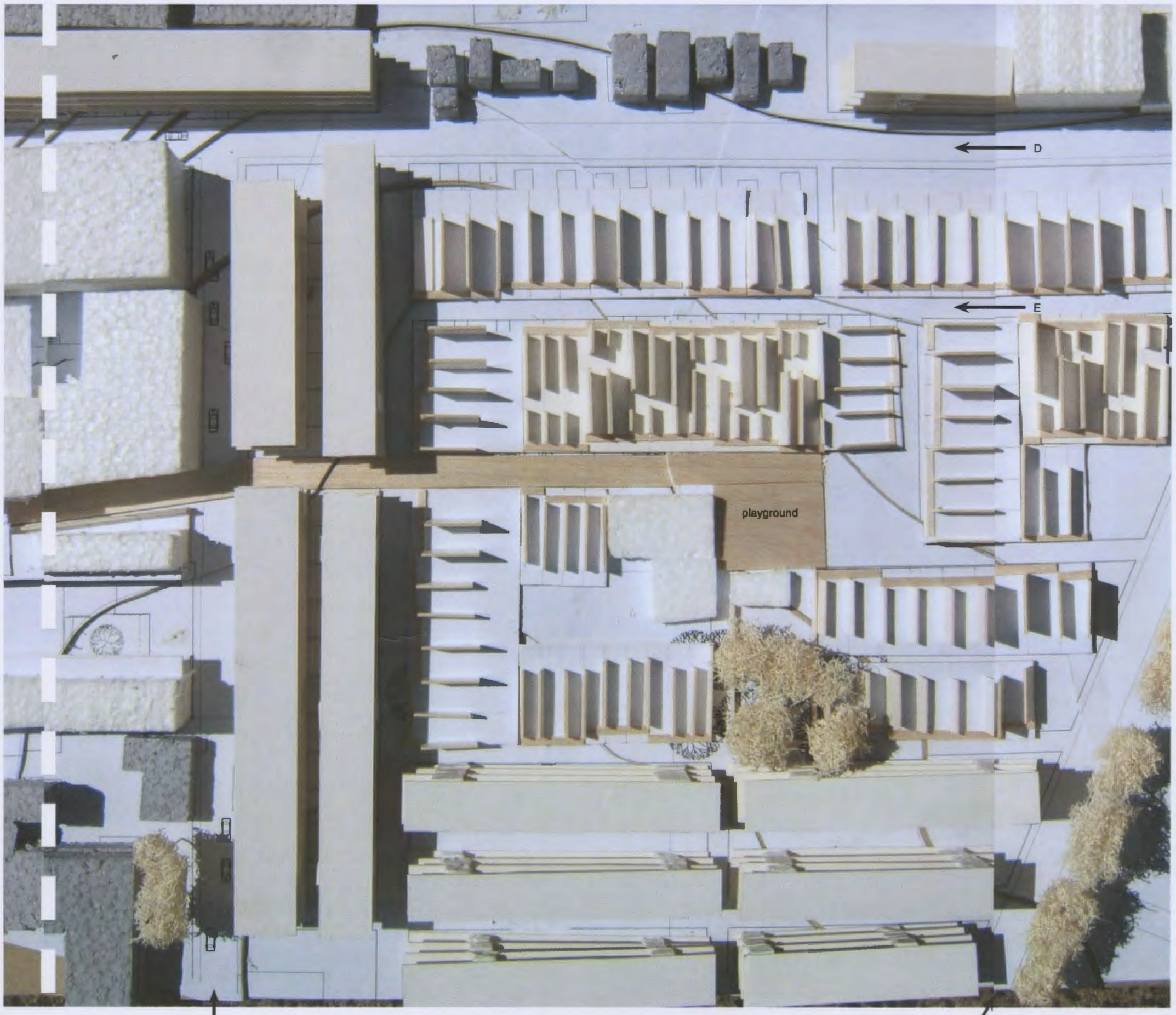
Urban design at approximate scale 1:3500

Strip urban design at Wittebome cluster of facilities, not to scale

1:500 Strip urban design model


A
civic square
social square
Wittebome Civic Centr
Rosmead Avenue
B

A B C



D

E

F

programming

multi-purpose education cluster

schools | clusters of public facilities

New needs that emerge in low-income urban environments require new types of facilities, and innovation is required to bring together such facilities with the typically expected education, health, social welfare and recreation facilities.

These new needs include hygienic facilities for slaughtering of livestock, facilities for ritual initiation, support and promotion of small businesses, dissemination of information about emergency services and local health, education and social welfare service providers, support for urban agriculture and support for single headed households, homeless people and street children. (Planning and Development Directorate, 1999, p55)

Different communities will value different social facilities more or less, and it is important not to provide everything at once, but to leave room for the nature and form of some facilities to be chosen by the community themselves, within the spatial framework set up for them. At the same time, it is important to determine up front, as far as possible, the nature of institutions which are valued by a community. (Dewar & Uytenbogaardt, 1995, p21)

Schools as an anchor for clusters of public facilities

Organisationally, schools are the most stable institutional structures in many communities, and they can offer a range of facilities that are required by non governmental organizations, local institutions and community groups or clubs. (Dewar & Uytenbogaardt, 1995)

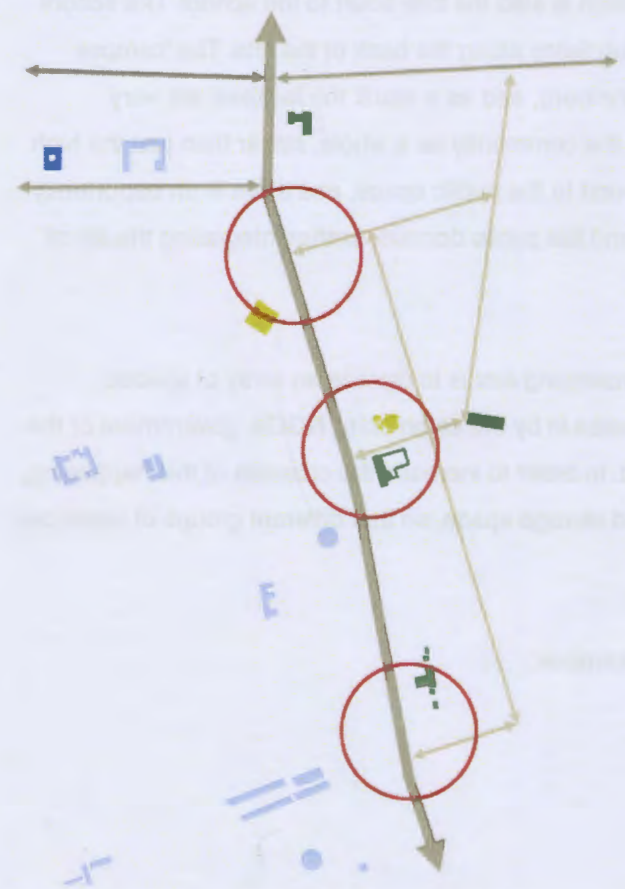
As such they are ideally situated to form the administrative core of a cluster of facilities. Such clusters of facilities will require innovative integrated management plans. (Planning and Development Directorate, 1999, p60)

Schools should therefore be considered as a group of components (Dewar & Uytenbogaardt, 1995, p49):

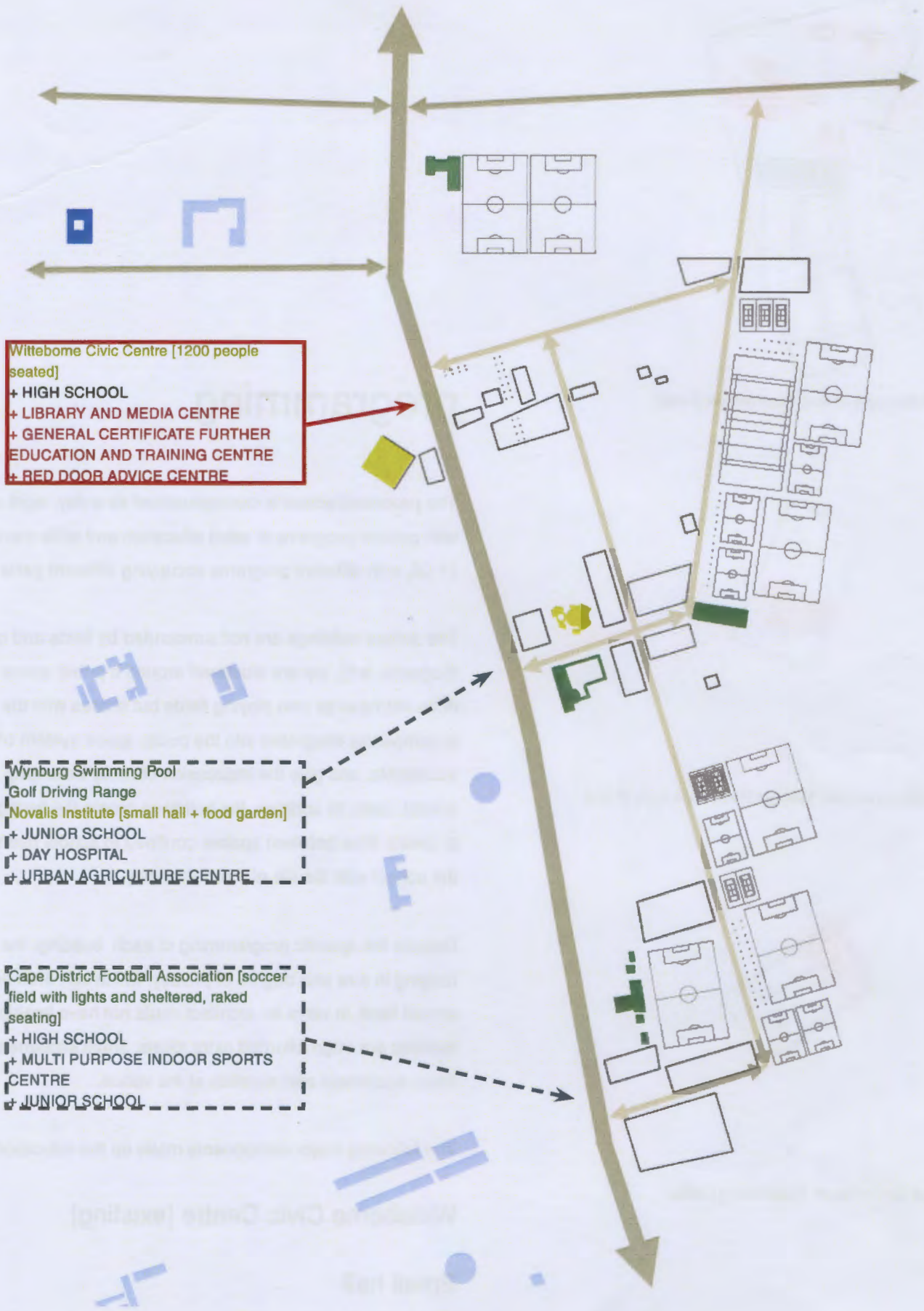
- Classrooms accommodate school classes during the day and adult education classes in the evening
- Ancillary educational facilities such as halls, libraries, computer laboratories, metal and woodwork workshops and so on are used by pupils in the day but by the broader community in the evening
- Library and audio visual centres should be centralised into a lesser number of well staffed and resourced institutions that serve the broad community
- Play space within the school area should be reduced but supplemented by public outdoor space next to the school
- School fields should be combined with club fields and wrapped with high density housing, for which they can offer some relief

Some of the challenges of the design of this cluster of facilities will be in how they are collectively managed and accessed so that they are not vandalised, and so that children are adequately protected while playing etc, but so that the facilities can be used to their maximum. Also, provision will have to be made for different groups to safely store their equipment when it is not in use, to ensure that it will not be stolen or damaged.

1 Rosmead Avenue and existing social facilities



2 New primary system of access and three proposed major clusters of social facilities



3 Proposed social facilities and new configuration of sports fields

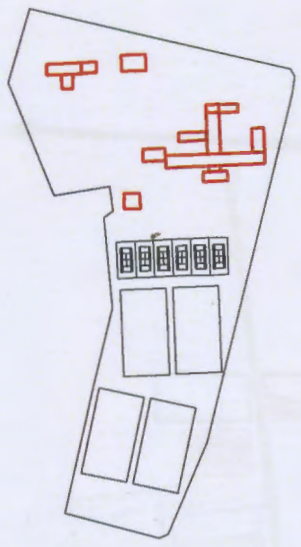
Woodstock Community Facilities Menu

Creches (3)
Primary schools (5)
Secondary schools (2)
Local post office (1)
Playgrounds (7)
Sports fields (2)
Clinic (1)
Day hospital (1)
Community hospital (1)
Old age home (1)
Places of worship (7)
Police station (1)
Corner shops (24)

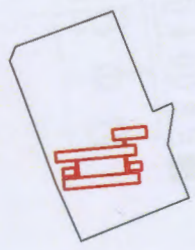
Density studies were done to derive an approximate number of dwelling units that can be accommodated on this site. Using these numbers it is possible to estimate the number of social facilities that would be required to support such a population. The Woodstock community facilities menu was used for these calculations, and gives the results shown in the accompanying list.

These numbers were useful in terms of coming to terms with the distribution of facilities between the three main clusters, and in beginning to imagine the character of the Wittebome cluster itself. However, they are by no means prescriptive in terms of what facilities might be necessary to support the daily life of the inhabitants of the settlement and surrounds. As mentioned previously, new programs and innovation is required to cope with the contemporary needs.

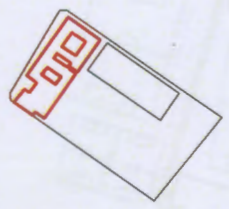
The Wittebome cluster takes the traditional programmatic requirements of a high school and expands them so that they can be shared with other schools and the wider community. The main components of the cluster are the classrooms and administration areas of a normal school, a library and media centre, a further education and training centre, a small hall and a community information centre.



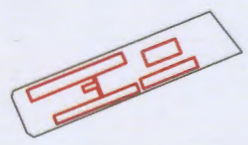
St Michael's School, Bloemfontein [8.2ha]



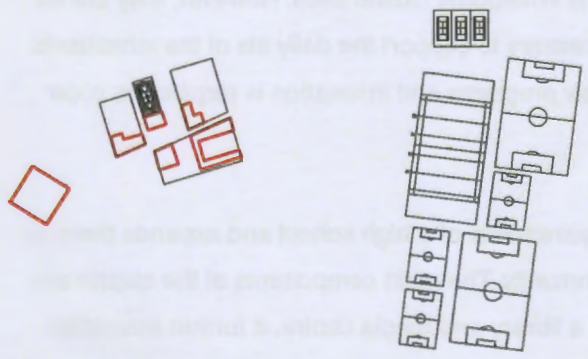
Unknown school, Mitchells Plain, Cape Town [2.3ha]



Jan van Riebeeck, Cape Town, [1.96ha]



Unknown school, Wynburg, Cape Town [1.1ha]



PROPOSED SCHOOL [0.3ha]
+ SHARED FACILITIES + PUBLIC FORECOURT [0.45ha]
+ SHARED FIELDS [3.8ha]

programming

The proposed school is conceptualised as a day, night and weekend school, functioning as a secondary school with parallel programs in adult education and skills training. It is designed to be able to function from 08:00 – 21:00, with different programs occupying different parts of the school.

The school buildings are not surrounded by fields and open spaces like an island in the urban fabric (see diagrams, left), but are clustered around a public space which is also the fore court to the school. The school does not have its own playing fields but shares with the club fields along the back of the site. The 'campus' is completely integrated into the public space system of Wynberg, and as a result the facilities are very accessible, and give the impression of really belonging to the community as a whole, rather than just the high school users. In addition, the buildings create the background to the public space, and there is an opportunity to create links between spaces confined to school users and the public domain, further integrating the life of the school with the life of the community.

Despite the specific programming of each building, the underlying aim is to provide an array of spaces, ranging in size and degree of privacy, which can then be used in by the community, NGOs, government or the school itself, in ways an architect could not have imagined. In order to increase the chances of this happening, facilities are often afforded extra toilets, small kitchens and storage space, so that different groups of users can leave equipment and supplies at the venue.

The following major components make up the education 'campus':

Wittebome Civic Centre [existing]

Small hall

Community Information Centre

Library, Media and e-Learning Centre

Red Door Business Advice and Further Education Training Centre

Administration

Classrooms

The Community Info Centre is open 24 hours and is the centre of management of the cluster of facilities. It has a community room, public toilets and a reception and office for officials posted here to answer housing department enquiries, labour enquiries and provide information on education and health issues.

The Community Info Centre also manages the netball court, which is used by the school during the morning and by anyone in the afternoon. There are lockers and change rooms.

Community Info Centre

Netball / Mini-soccer court

The Library, Media and e-Learning Centre is an information centre for classwork, homework, further education and leisure and may be used by students, teachers and non-school goers.

There are two computer rooms, a study centre for children and adult learners, support for distance learning, a children's library, discussion rooms, team teaching rooms, and media rooms.

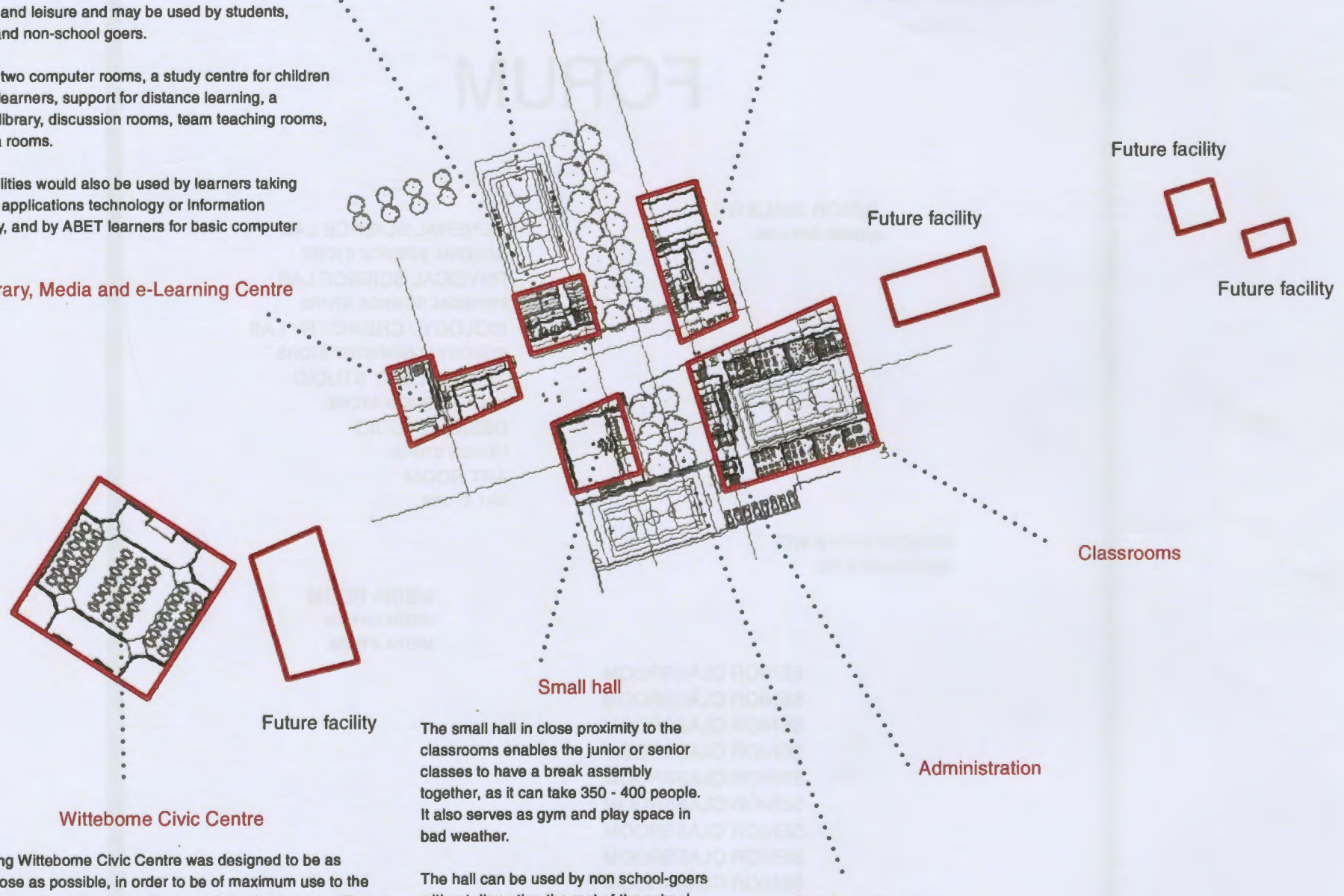
These facilities would also be used by learners taking Computer applications technology or Information technology, and by ABET learners for basic computer literacy.

Library, Media and e-Learning Centre

The Further Education and Training Centre has studios and laboratories used by the school for subjects such as Civil Technology, Design, Engineering Graphics and Design, Mechanical Technology, Physical Science and Life Sciences.

The ground and mezzanine floors of the centre are office and discussion space for the Red Door Business Advice Centre, which offers support to existing and new businesses, and also recommends and provides training for learnerships in general certificate courses such as those previously described.

Further Education and Training Centre



Wittebome Civic Centre

The existing Wittebome Civic Centre was designed to be as multi purpose as possible, in order to be of maximum use to the community that it serves. It has the potential to host many different events, including a film viewing (650 seats), a wedding, indoor sports (8 x table tennis + 2 x badminton / judo / weight lifting), a music concert (1100 seats) a a boxing match (1200 seats) (Parker, 2009). The centre has a kitchen, toilets and change rooms.

The proposed cluster of facilities will use the Wittebome Civic Centre as its main hall, and the school will use it for its main assemblies, when the whole high school needs to meet in one space.

The small hall in close proximity to the classrooms enables the junior or senior classes to have a break assembly together, as it can take 350 - 400 people. It also serves as gym and play space in bad weather.

The hall can be used by non school-goers without disrupting the rest of the school.

Semi-public court

The court between the hall and the classrooms is used in break by the students, and has toilets and a kitchen which can be used as a tuck shop or soup kitchen during the day.

When the students are not all at school, the hall and in-between court can be used for community events, and are served by toilets and the kitchen which can be used for catering. In some cases the playground behind the hall can be used as a service access or for parking.

SECRETARY
PRINCIPAL
VICE PRINCIPAL
RECORD ROOM
STAFF ROOM
SAFE
SICK ROOM
GENERAL STORE
BOOK STORE
MALE STAFF WC
FEMALE STAFF WC
CARETAKERS ROOM
OFFICE

JUNIOR CLASSROOM
JUNIOR CLASSROOM
JUNIOR CLASSROOM
JUNIOR CLASSROOM
JUNIOR CLASSROOM
JUNIOR CLASSROOM
JUNIOR CLASSROOM
JUNIOR CLASSROOM
JUNIOR CLASSROOM

FORUM

JUNIOR GIRLS WC
JUNIOR BOYS WC

GENERAL SCIENCE LAB
GENERAL SCIENCE STORE
PHYSICAL SCIENCE LAB
PHYSICAL SCIENCE STORE
BIOLOGY / CHEMISTRY LAB
BIOLOGY / CHEMISTRY STORE
TECHNOLOGY STUDIO
MACHINE ROOM STORE
DESIGN STUDIO
DESIGN STORE
ART ROOM
ART STORE

SENIOR GIRLS WC
SENIOR BOYS WC

MEDIA ROOM
MEDIA OFFICE
MEDIA STORE

SENIOR CLASSROOM
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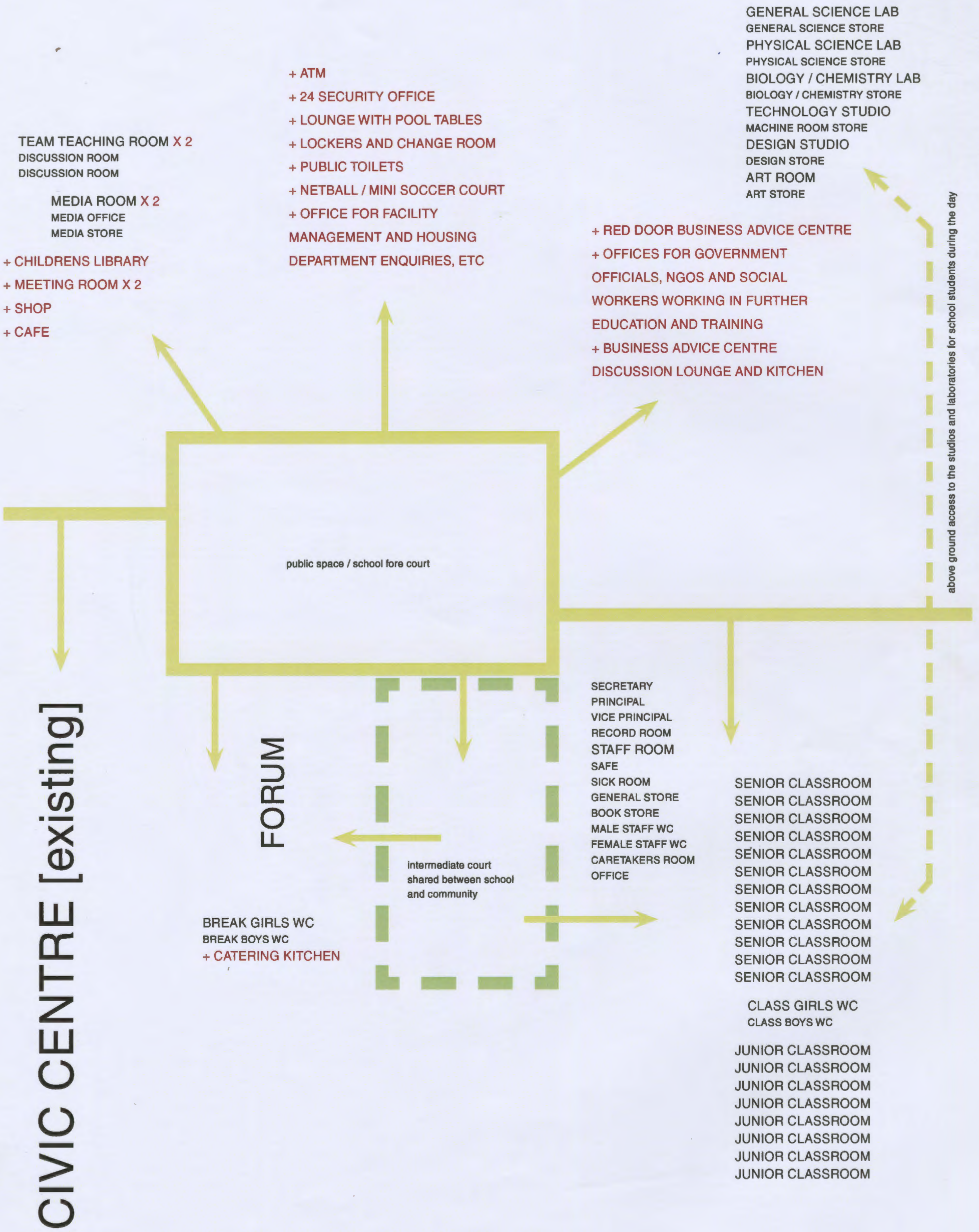
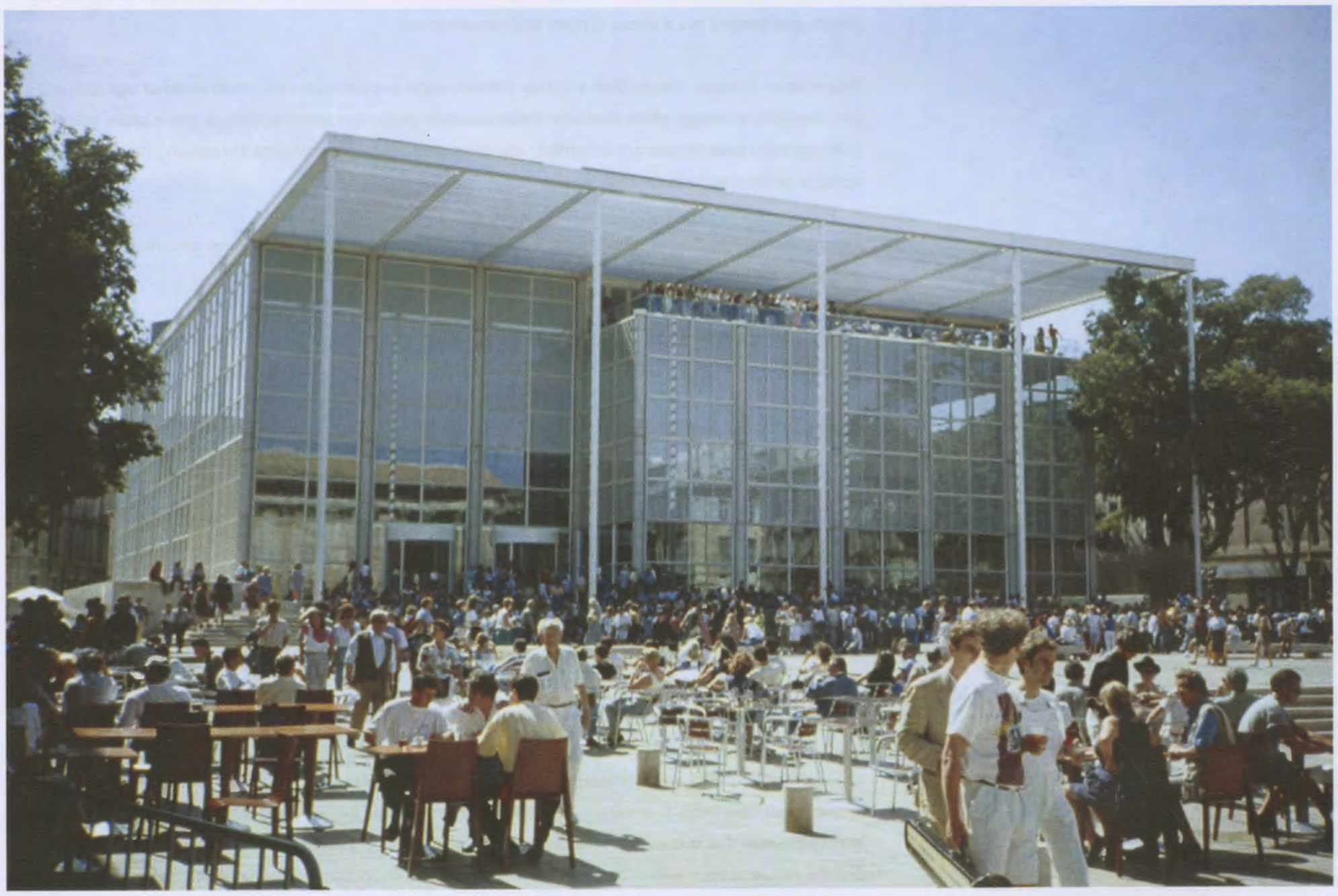
~~TEAM TEACHING ROOM~~
~~SENIOR DISCUSSION ROOM~~
~~JUNIOR DISCUSSION ROOM~~

Typical school program



Proposed school program

making
the public facade



introduction

This thesis proposes that the primary elements of the city can be provided strategically so as to improve the quality and accessibility of the resources and services they offer, at the same time as providing spaces and shelter for collective urban life.

In the case of my project, this means to say that the buildings I propose to provide, which will be a cluster of facilities anchored by a school, will exceed their utilitarian roles, and provide the background to urban life, by articulating generous and flexible collective spaces that are open to any use.

In the Thinking chapter, I explore the idea of legibility, whereby the relationship between buildings and public space is seen as a framework for change, wherein not all of the buildings are provided straight away, but the overall environment has a sense of place and completeness.

This chapter, however, comes from a slightly different angle and considers the public fronts of big, complex, very complete buildings, which deal with similar issues of generosity and hospitality, but at a larger scale. The buildings that I have chosen are essentially object buildings, but were envisioned in conjunction with a public space to which they form the background.

The purpose of this chapter is to develop a vocabulary of materials and technological resolutions of spatial arrangements that can contribute to the 'public' quality of a building.

The chapter is structured around three case studies, all three in Europe, including a town hall and two art galleries:

Murcia Town Hall, Spain

Carré d'Art, Nimes, France

Barcelona Museum of Contemporary Art, Spain

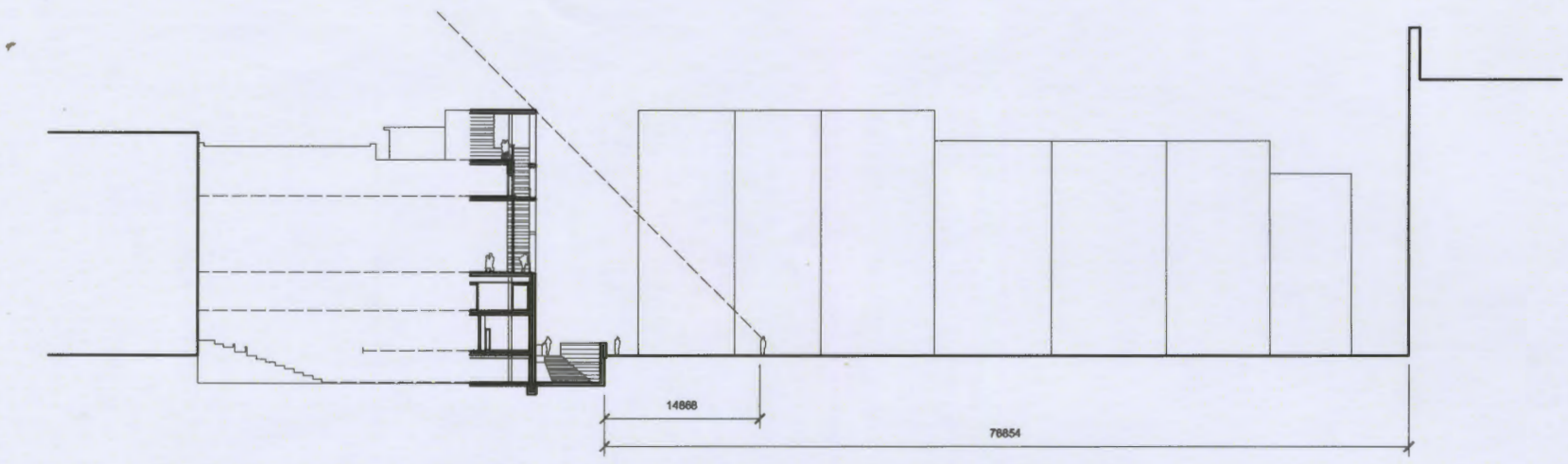
Before the individual case studies, there is a comparison between the three buildings in terms of their relationship to the square in which they sit, their scale, height and so on.

The introduction to each case study is followed by the general structural logic of the front part of the building.

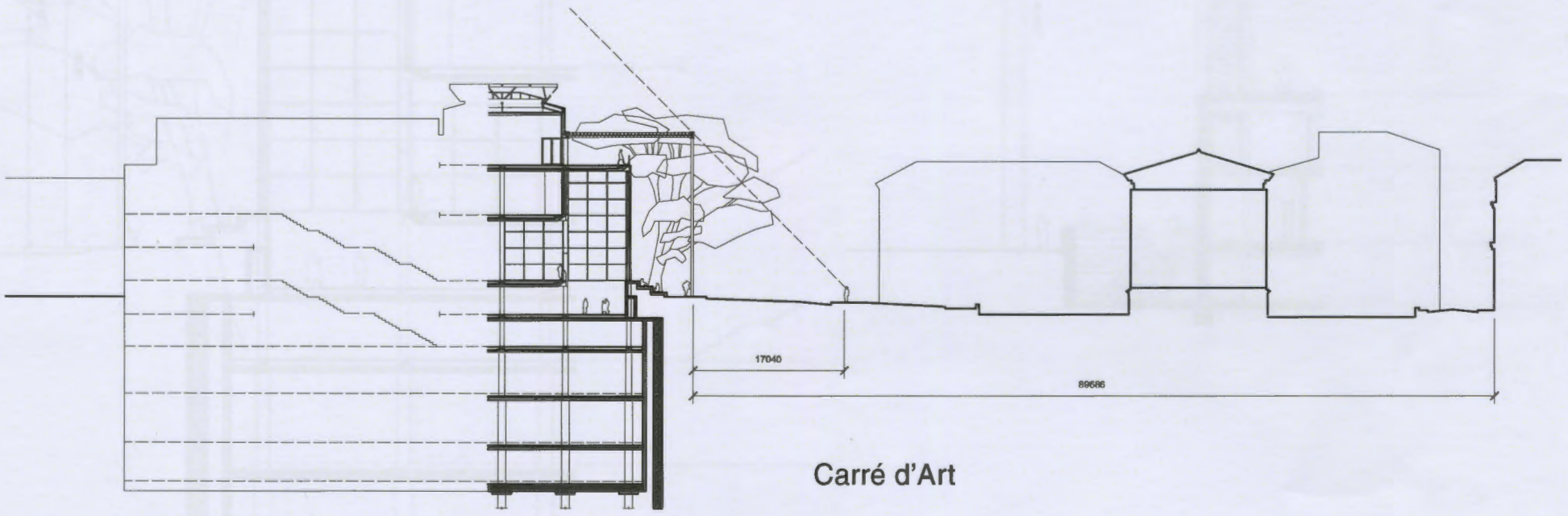
Then, for the purposes of understanding how each building addressed the 'public' or 'civic' element of the project, each case study is considered specifically in terms of the following aspects: the relationship between form and space, that is to say the relationship between the building and the public streets and spaces of the city; the nature of the interface between the building and public space; and the nature of the intermediate public spaces that the building may or may not offer to the public.

At the end of each case study, there is a collection of a few specific drawings, to scale, including a 1:100 part-section and strip elevation of the front of the building, explaining in detail the way of making, and the relationship between inside and outside spaces. These drawings will need to be referred to throughout reading the case-study.

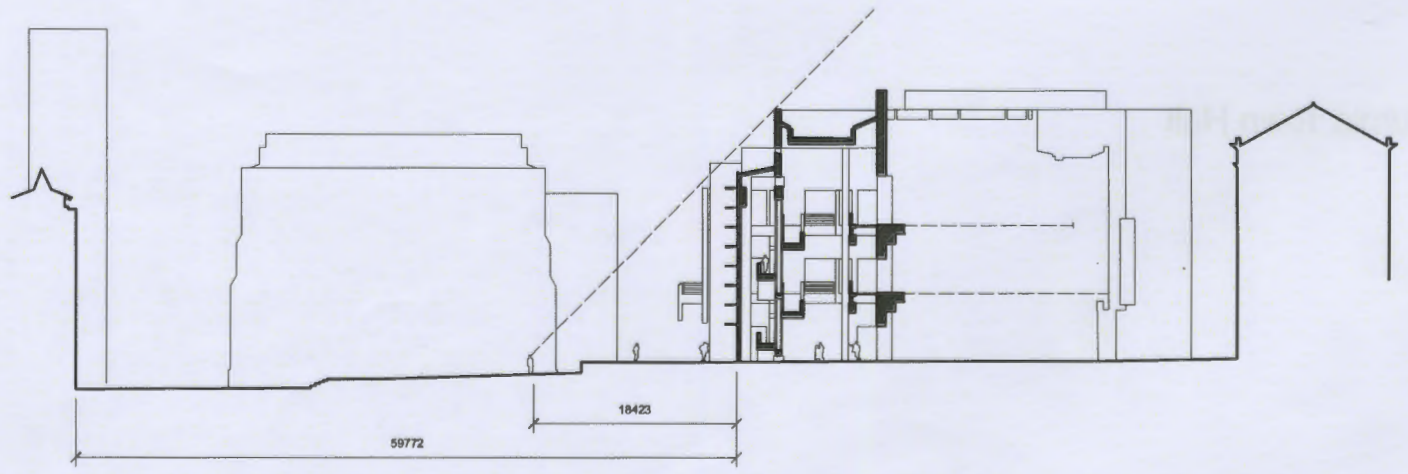
Finally, there is a concluding statement which sums up the principles of these case studies which could inform the making of social facilities in South Africa that aim to provide spaces and shelter for collective life.



Murcia Town Hall

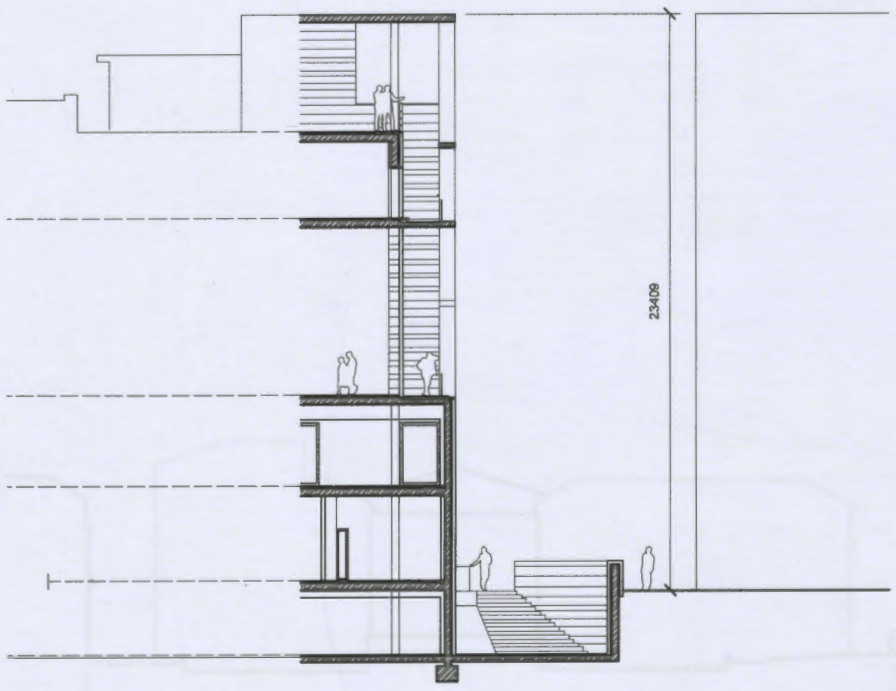


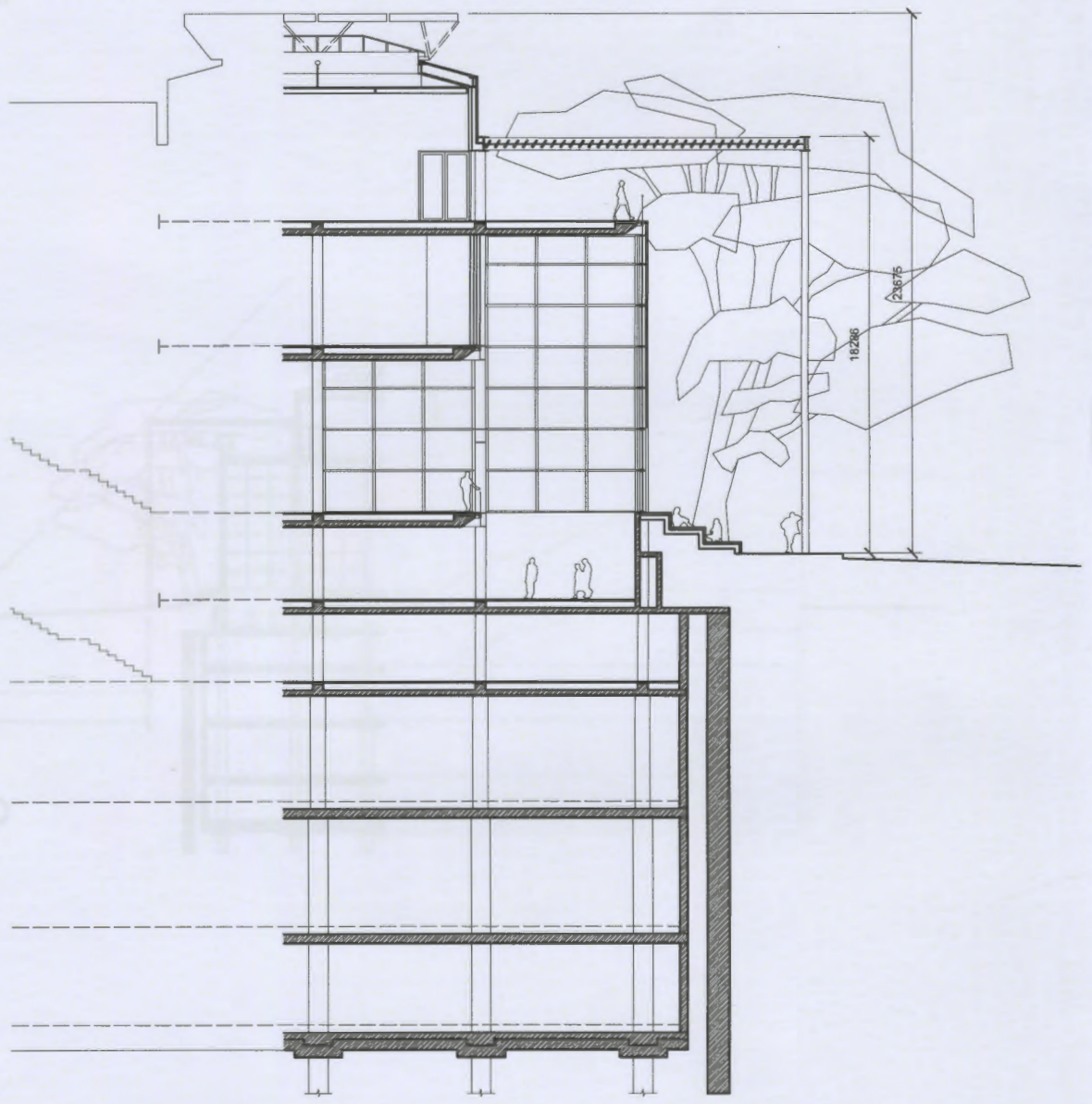
Carré d'Art



Barcelona Museum of Contemporary Art

Sections to scale 1:600

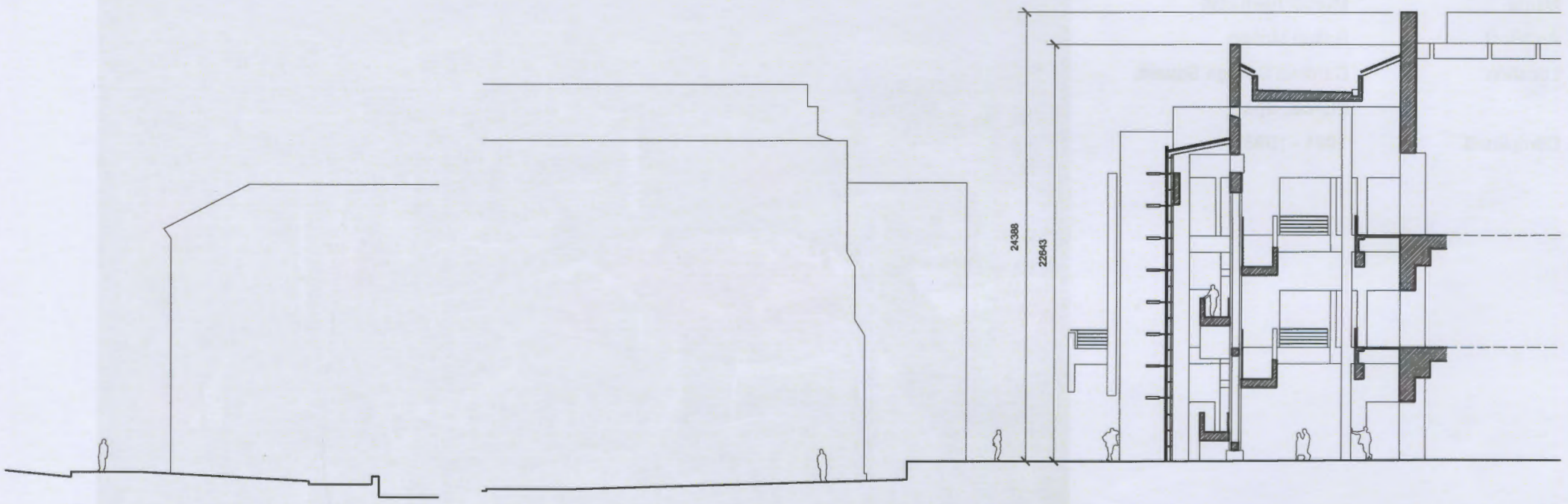




Murcia Town Hall

Carré d'Art

Sections to scale 1:300



Barcelona Museum of Contemporary Art

murcia town hall

Name	Murcia Town Hall
Architect	Rafael Moneo
Location	Cardinal Belluga Square, Murcia, Spain
Completed	1991 - 1998

Murcia Town Hall in Cardinal Belluga Plaza (Cecilia & Levene, 2000, p79)

The old Murcia Town Hall is next to a river, and turns its back on the Plaza. The annex to the old town hall, to which it is connected by means of a bridge, served to create a link between the town hall and the life of the plaza, which is one of the most important public spaces in the city, and to establish a civic presence on a square that was, up until then, dominated by the old power of the church, in the form of the cathedral.

1 Basement floor plan
2 Ground floor (entry level) plan
3 Mezzanine floor plan
4 First floor plan
5 Second floor plan
6 Third floor plan
7 Mechanical equipment floor plan
8 Roof plan

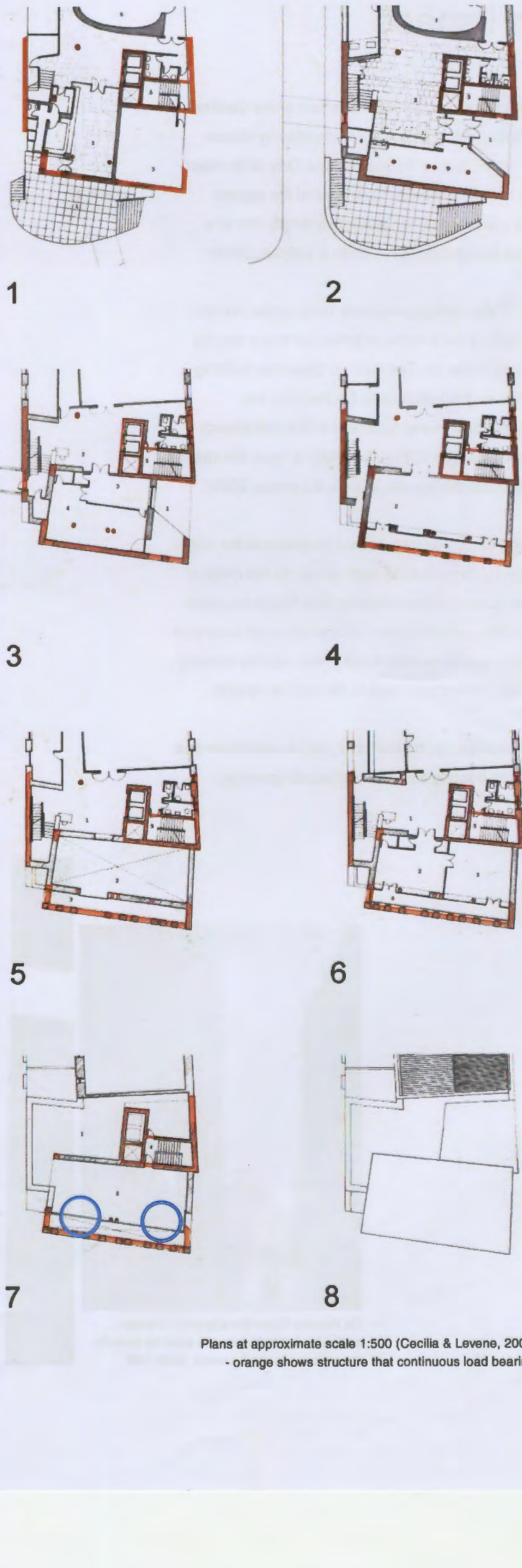
structural logic

The row of four columns, just behind the front facade, is continuous in some form or another (sometimes within a wall), except in this basement level mechanical room, where one column is missing. Either it was necessary to have a clear floor for the mechanical equipment, and the ceiling has massive structure to take this point load that has come right through the building, or it is just missing off the drawing.

The structure of the building is essentially load bearing walls and reinforced concrete pillars and slabs, with the exterior finished in a local sandstone. The flat slabs are 300mm reinforced concrete with no visible beams, and are at times necessarily pre-stressed, such as the roof slab over the terrace, which must span 9m.

The parts of the building that are highlighted in orange in the accompanying part-plans show the load bearing structure that is continuous throughout the building.

Two of the row of four columns are missing from this top level. The roof above this level is not carrying any load other than itself, so it is likely that the slab is prestressed to span right from the front facade to the back wall, without depending on the twin columns in the middle-centre of the roof deck which cannot offer much support. (Beute, 2009)



Plans at approximate scale 1:500 (Cecilia & Levene, 2000, p80 / 82)
- orange shows structure that continuous load bearing elements

Murcia Town Hall on Cardinal Belluga Plaza (Jgarchitectura, 2008)

form | space

The Murcia Town Hall stands at one end of the Cardinal Belluga Plaza, which is otherwise bounded by Murcia Cathedral and Cardinal Belluga Palace. One of its major roles was to continue the containment of the square which was disrupted by the previously empty site of a demolished baroque house. (Ceclia & Levene, 2000)

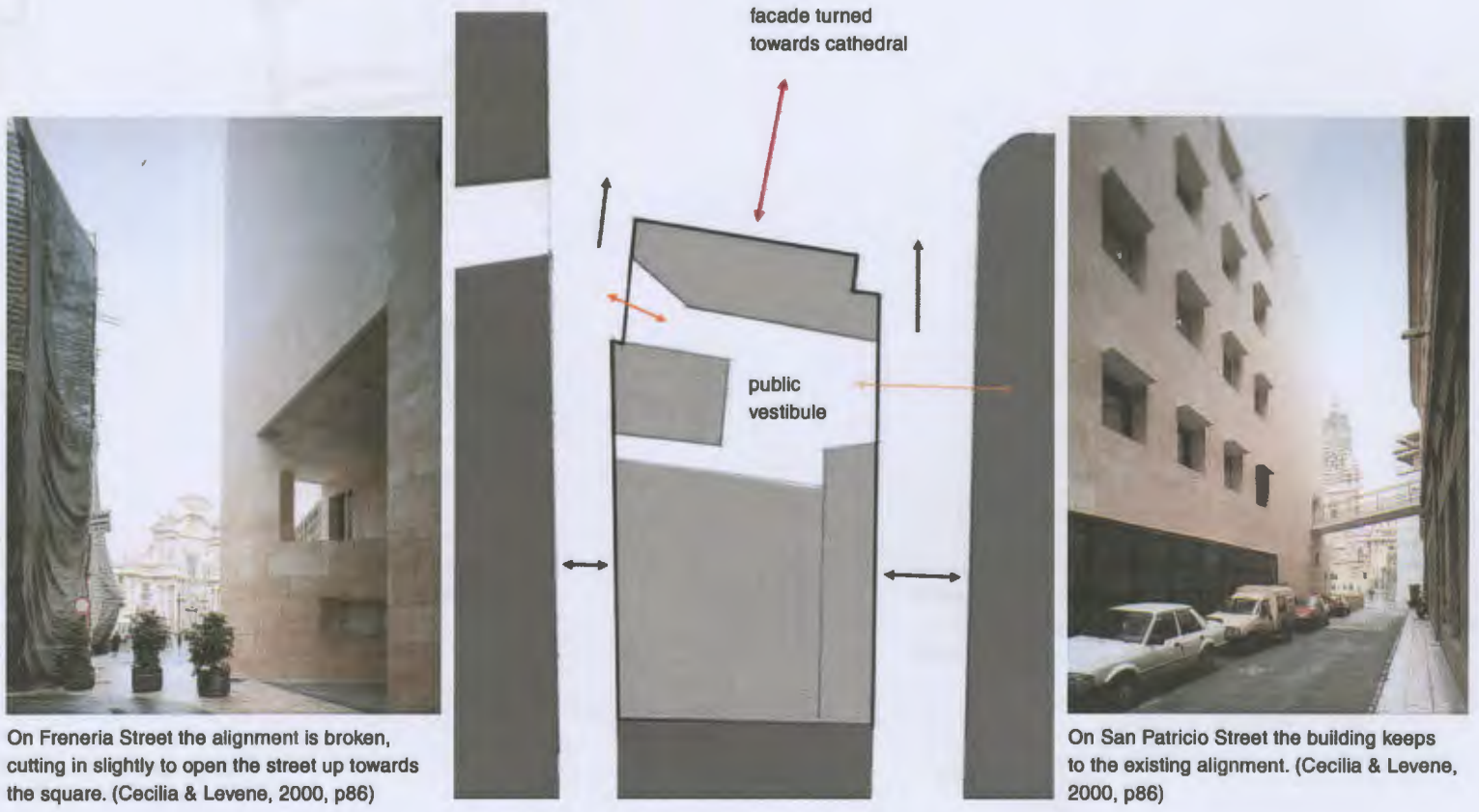
Each side of the building responds to the urban context. The front face of the building is turned so that it directly faces the cathedral. On San Patricio Street the building respects the existing alignment. On Freneria the alignment is broken, keeping at first to the one already established, and then cutting in slightly to open the street up more towards the square. (Ceclia & Levene, 2000)

The building can be described as a 'fragment of the city' (Curtis, 1994), compressed, so to speak, by the order of the outside spaces, into a compact plan that is recursive - defines positive outside space - but which is cut away and opened up in places to absorb the public into the building and to make connections back to the outside spaces.

The outer envelope is, for the most part, a sandstone clad concrete load bearing wall with punctured openings.

Cardinal Belluga Plaza, Murcia, Spain (Google Earth, 2009)

Murcia Town Hall (Google Earth, 2009)



On Freneria Street the alignment is broken, cutting in slightly to open the street up towards the square. (Cecilia & Levene, 2000, p86)

On San Patricio Street the building keeps to the existing alignment. (Cecilia & Levene, 2000, p86)

interface

Facade of Murcia Town Hall (Cecilia & Levene, 2000, p81)

The public face of the building had to present itself as a spectator, in light of the other buildings which would inevitably be the protagonists on the square, but it also had to exert a civic air appropriate to a town hall as the new seat of power. (Cecilia & Levene, 2000)

The palette of materials is limited, comprising mostly a local sandstone, concrete coloured with white cement, and glass, the overall effect of which is rich but restrained.

The expression of the recursive nature of the building is continued in making the public face, which is perfectly flat, planar. The irregular pattern of the columns can be seen as a a pattern on one of the sides of the square, rather than the front of a building. All the gestures of generosity are made by cutting back into the form of the building, and even the enlarged window to the councillors office is expressed without projecting into the 'positive' space of the square.

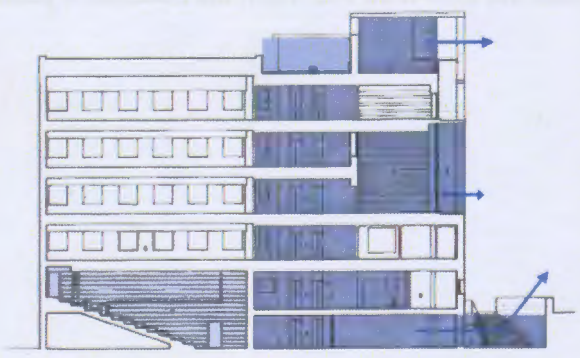
The 640 x 570mm (overall dimension) sandstone clad reinforced concrete columns can have been made in one of two ways: either the concrete is shuttered as per standard practice and the 125mm deep sandstone blocks are epoxyed to its surface, with flush joints, or the 125mm deep sandstone blocks are packed with flush joints, and tension anchored together to form the shuttering, into which the concrete is poured. (Beute, 2009)

The walls could have been made in the same way (the second method), with the sandstone being used in conjunction with conventional shuttering (at the back), to make the form-work into which the concrete is poured.

intermediate spaces

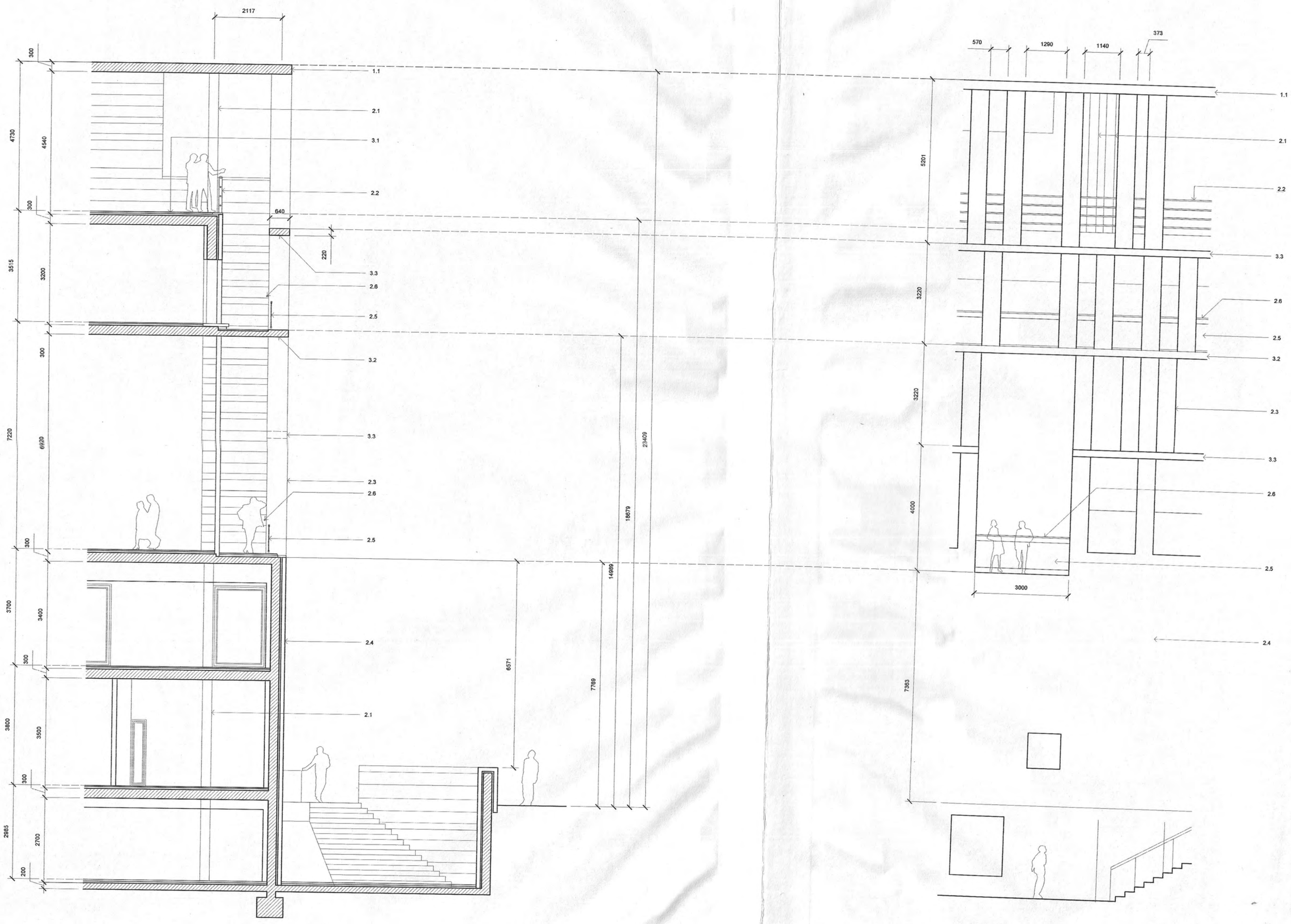
The facade of the building sets up a range of spaces that are part of the building but inextricably connected to the city. These spaces can be accessed via the generous vestibule, and can be used for functions or just for looking out across the square or towards the river.

The main gallery, from where the mayor speaks to people assembled in the square, is filled up by the people of the town themselves on days when religious processions move through the square.



Section, showing in blue the public spaces that relate back to the square: the terrace at the top, the gallery in the middle, and the cafe at the bottom. (Cecilia & Levene, 2000, p82)

View from the terrace across the square to the cathedral (Cecilia & Levene, 2000, p83)



Murcia Town Hall
Section / Stip Elevation

Notes

Drawing scale 1:100

Note: Most dimensions and notes are estimates based on looking at drawings and photographs and making logical assumptions. Structural information has been deducted with the help of a local structural engineer, Jaap Beute.

1 Roof

1.1 Pre-stressed concrete slab

2 Walls / Doors / Windows / Handrails

2.1 300mm Ø reinforced concrete twin-columns

These columns take loads from the top to the bottom of the building, sometimes as circular columns, and sometimes within the wall structure.

The top two columns may be ornamental, as it is likely that the prestressed slab will have been designed without taking them into consideration.

2.2 Balustrade with 4 x 30mm Ø steel rails, fixed flat steel uprights at 1800mm c/c, bolted to 335mm wide steel floor plate (flush with finished floor level), which is epoxyed to the screed.

2.3 640 x 570mm (overall dimension) sandstone clad reinforced concrete columns, made in one of two ways:

a) the concrete is shuttered as per standard practice and the 125mm deep sandstone blocks are epoxyed to its surface with flush joints

b) the 125mm deep sandstone blocks are packed with flush joints, and tension anchored together to form the shuttering, into which the concrete is poured

2.4 450mm (overall dimension) sandstone clad concrete wall, made in one of two ways:

a) the concrete is shuttered as per standard practice and the 125mm deep sandstone blocks are epoxyed to its surface with flush joints

b) the 125mm deep sandstone blocks are packed with flush joints, and tension anchored against standard formwork to form the shuttering, into which the concrete is poured

2.5 Laminated shatterproof glass balustrade with stainless steel top and bottom rail, spanning between columns (maximum distance 3000mm), at height 900mm above ffl

2.6 40mm Ø stainless steel / chrome surge rail at height 1100mm above ffl

3 Floor

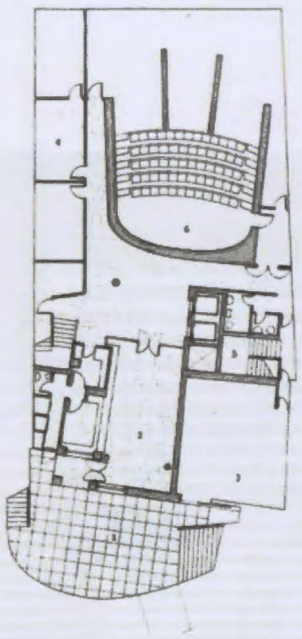
3.1 Concrete tiles with exposed aggregate, butt jointed against one another

3.2 This floor slab, and the roof, extend beyond the gallery to connect to the facade, and serve thus to tie the facade back to the building.

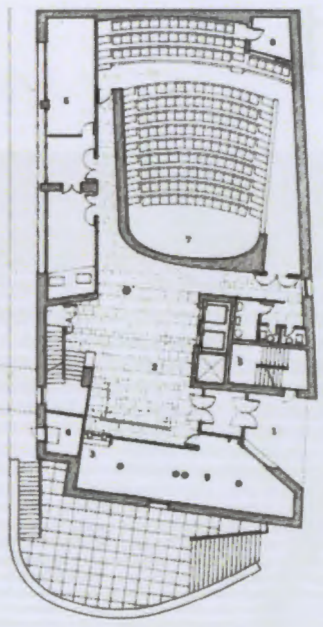
3.3 640 x 220mm concrete beam cast around castellated steel I-beam on its side, reinforcing welded to the castellated beam runs up and down into irregular columns (Beute, 2009)

4 Substructure

drawings



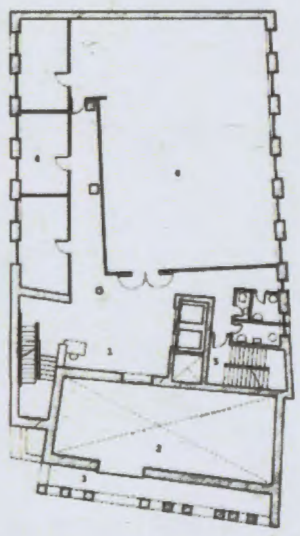
1
1 Sunken court
2 Cafeteria
3 Mechanical equipment
4 Storage
5 Emergency escape
6 Lecture hall



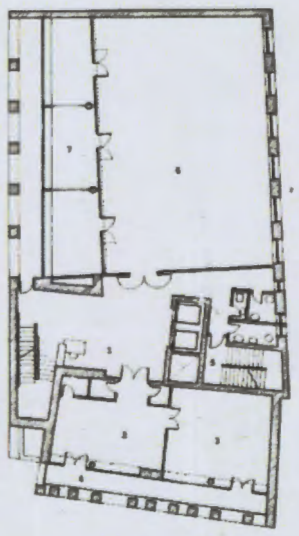
2
1 Entrance hall
2 Vestibule / Information
3 Cashier's desk
4 Rubbish room
5 Emergency stair
6 Office
7 Lecture hall
8 Projection box
9 Offices

3
1 Entrance hall - double height
2 Vestibule / Information
3 Secretary's office
4 Councillor's office
5 Emergency stair
6 Connection to old Town Hall
7 Office
8 Offices

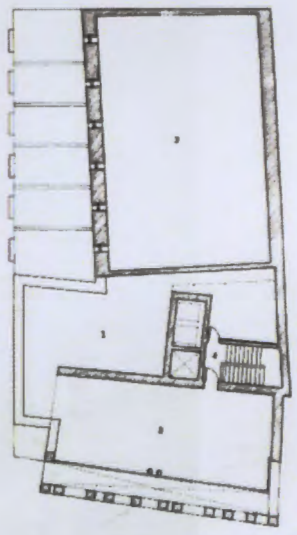
4
1 Vestibule / Information
2 Reception room
3 Gallery
4 Office
5 Emergency stair
6 Offices



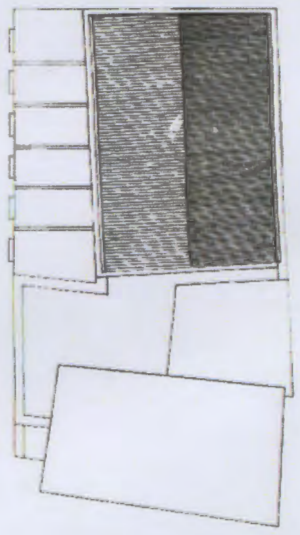
5
1 Vestibule / Information
2 Reception room - double height
3 Gallery - double height
4 Office
5 Emergency stair
6 Offices



6
1 Vestibule / Information
2 Secretary's office
3 Councillor's office
4 Gallery
5 Emergency stair
6 Offices
7 Office



7
1 Mechanical equipment
2 Terrace
3 Offices' void
4 Emergency stair



8

Plans at approximate scale 1:500 (Cecilia & Levene, 2000, p80 / 82)

1 Basement floor plan

2 Ground floor (entry level) plan

3 Mezzanine floor plan

4 First floor plan

5 Second floor plan

6 Third floor plan

7 Mechanical equipment floor plan

8 Roof plan

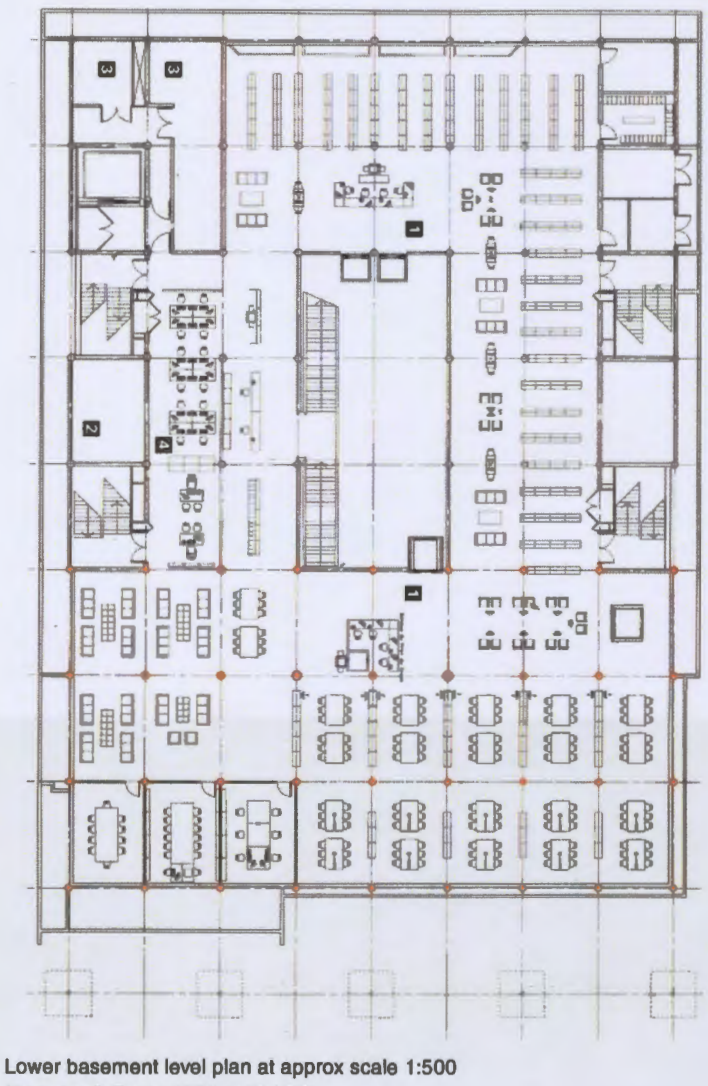
Terrace (Cecilia & Levene, 2000, p85)

carré d'art

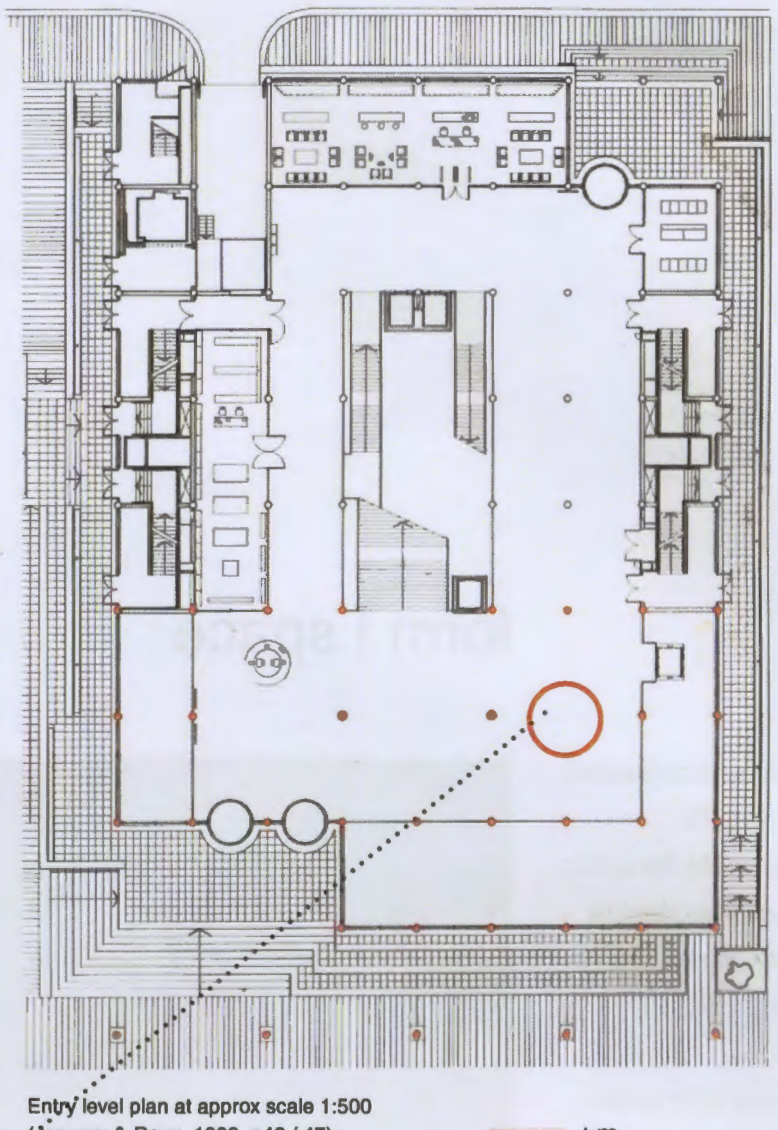
Name	Carré d'Art
Architect	Sir Norman Foster & Partners
Location	Place de la Maison Carreé, Nimes, France
Completed	1994

Carré d'Art (Sullivan, 2007)

The Carré d'Art, an arts centre with a multimedia library, art galleries and a cafe, was commissioned as part of an urban regeneration effort by the then mayor of Nimes, Jean Bousquet, who sought a proposal that had urban place making and the revitalisation of public space at its heart.



Lower basement level plan at approx scale 1:500
(January & Roux, 1993, p46 / 47)



Entry level plan at approx scale 1:500
(January & Roux, 1993, p46 / 47)

7m

5m

10m

Columns, up-stand beams and floors bevelled up at end of floor plate
(January & Roux, 1993, p22 - 23)

Carré d'Art (Sullivan, 2007)

Where the a column is skipped (see highlighted circle), the slab will span in one direction only (7m) and most likely be prestressed.

structural logic

The overall structural logic of the Carré d'Art has its roots in a type that is well used by Foster, which is that of the directional, industrial shed. The technological system of the industrial shed (and of the Carré d'Art) is that of serial construction, with regular structural elements. (Maxwell, 2000, p250)

The regular structural components are a grid of 450mm diameter in-situ concrete columns, which run right from the upper gallery to the lower basement level (6 floors). Below this level they become increasingly wider, reaching 850mm diameter at the lowest level (5 levels below ground).

The grid bay is 7 x 5m (spanning in both directions) or 7 x 10m (spanning in one direction only. The structural members are therefore designed comfortably for the 7 x 5m bay, and will most likely be prestressed for the 7 x 10m bay. 450 x 500mm (deep) up-stand beams run between columns in both directions, with a 250mm floor slab spanning between beams. The floors are bevelled up towards the edge beams at the end of the floor plate, exposing the beam where it meets the column. (Beute, 2009)

Despite Foster's typical use of highly advanced technology, he describes the Carré d'Art as a building that could only have been built in Nimes, where you cannot build any more economically with prefabricated concrete than with in situ concrete. In other words, local building techniques have driven the structural logic in this case. (Foster, 1999, p761)

form | space

The Carré d'Art was considered, from its conception, as part of the city as a whole, and specific consideration was given to how to remake the public space in front of the building, Place de la Comédie (now known as Place de la Maison Carreé), as a "place for people". (January & Roux, 1993, p9)

Foster was looking, through the Carré d'Art project, at how to make sense of existing public places in the city, give dignity to major boulevards, and connect the heart of the city with the airport on the periphery. In other words, the Place de la Maison Carreé was considered, crucially, as part of the network of public spaces that structure the city.

The building is conceptualised as a rectangular box, which reasserts the existing streets around the building.

Carré d'Art and Place de la Maison Carreé (Google Earth, 2009)

Foster's urban concept for Nimes (Machado, 2000, p371)

Inside the box window (January & Roux, 1993, p33)

interface

The elevation to the public square is "calm, neither overly-demonstrative nor obviously recessive or over-respectful." (January & Roux, 1993, p10)

The architecture is not obtrusive or over the top in its high-tech style, and the technical details are restrained and carefully integrated within an overall tectonic system. (Chaslin, 2000, p167)

The façade has two major layers, both comprising columns pulled up from the grid, with no horizontal floor plates connecting them except across the cafe floor.

The outmost layer is made up of five 280mm diameter circular hollow steel sections, which hold panels of shade louvres at roof level. These columns, despite their very slender and delicate appearance, are at a slenderness ratio of 1:62, which is well within the recommended slenderness ratio for steel of 1:80.

Spatial box

The next layer is set right back to create a kind of civic porch, but has a protruding box window. This box is like a big bay window that enables passers by to look down into the library below (as well as letting light down to the library), and its uppermost level supports a café, just below the shade roof.

The columns of the main entrance plane and the box are regular grid columns, 450mm diameter in-situ concrete columns, except that they are exceptionally 'slender'. (Beute, 2009)

Civic porch

The columns on the front façade that hold up the restaurant, specifically, are not laterally braced across a height of 12800mm. At 450mm this puts them at a slenderness ratio of 1:28. The rule of thumb slenderness ratio for concrete is 1:17, which then requires 1 - 8% reinforcement. At 1:28 these columns are considered very 'slender', and will require at least 10% reinforcement.

Balcony / box window

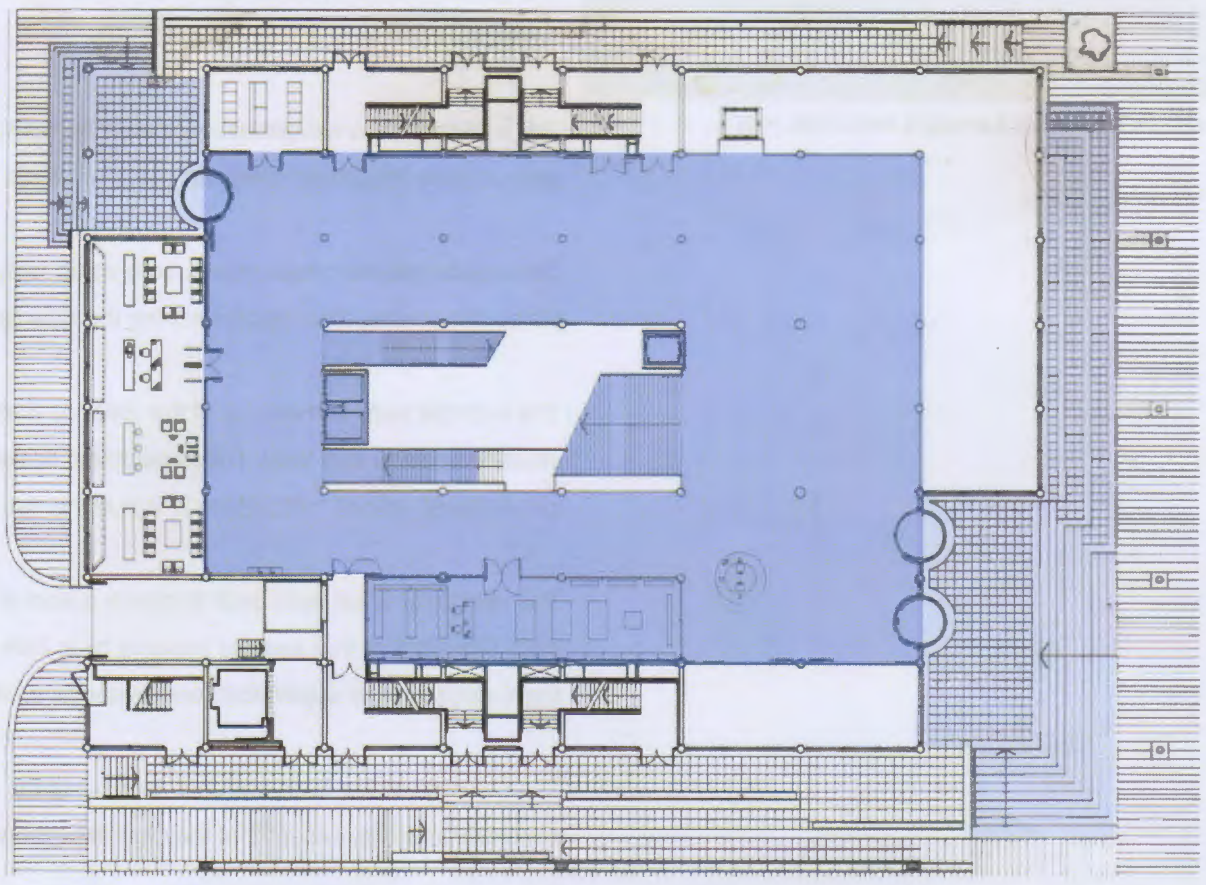
Carré d'Art (Sullivan, 2007)

Carré d'Art (Sullivan, 2007)

intermediate space

The majority of the entry level floor is public, with a 'public' route moving right through the building from one street to another. At the centre of the building is a very generous internal courtyard which serves to get light right down to the basement as well as being the major circulation space in the building. The separation of the gallery spaces which are on the top two floors and the library which is predominantly underground is offset by the central courtyard which serves as an overlap space for everybody. (January & Roux, 1993, p10)

The front 'porch' and the restaurant balcony are the most successful intermediate places, as they are clearly within the defined spatial volume of the Carre d'Art but absolutely part of the city.



Entry level plan (not to scale) showing the generous, sociable space between the libraries below, the galleries above, and the city outside (January & Roux, 1993, p47)

Rooftop outdoor cafe overlooking the square (Faarsdant, 2009)

View from the cafe across the square (Faarsdant, 2009)

Carré d'Art
Section / Strip Elevatio

Notes

Drawing scale 1:100

Note: Most dimensions and notes are estimates based on loc drawings and photographs and making logical assumptions. information has been deducted with the help of a local struct engineer, Jaap Beute.

1 Roof

2 Walls / Doors / Windows / Handrails

2.1 280mm Ø circular steel hollow section columns at 10m c

These columns, despite their very slender and delicate appe at a slenderness ratio of 1:62, which is well within the recomm slenderness ratio for steel of 1:80.

2.2 Aluminium louvres

2.3 Powder coated aluminium window frames, enlarged on th receive a structural steel bar spanning between concrete col

2.4 Shatterproof laminated glass balustrade held between tw plates at floor level, which also provide an edge to the floor s finishes and which step down below the slab to provide a rec services.

2.5 450mm Ø reinforced concrete columns at 5000 / 7000mm

2.6 450mm Ø reinforced concrete columns at 5000mm c/c.

The columns on the front facade that hold up the restaurant shade canopy, are not laterally braced across a height of 12 450mm Ø this puts them at a slenderness ratio of 1:28, (abo as the columns of Bloukrans Bridge, over the Storms River, b Jeffery's Bay and Plettenberg Bay). The rule of thumb slende for concrete is 1:17, which then requires 1 - 6% reinforcemer these columns are considered very 'slender', and will require 10% reinforcement.

3 Floor

3.1 Floor slab bevelled upwards at the edge of the mezzanin provides a recess that is used to house services (lights, extra so on).

3.2 450 x 500mm reinforced concrete upstand beams spann columns, accross structural bays of 5000 x 7000mm

3.3 250mm concrete floor slab spanning in two directions, be upstand beams, across structural bays of 5000 x 7000mm

3.4 The space between upstand beams can be used to lay a and service ducts, before making the floor surface.

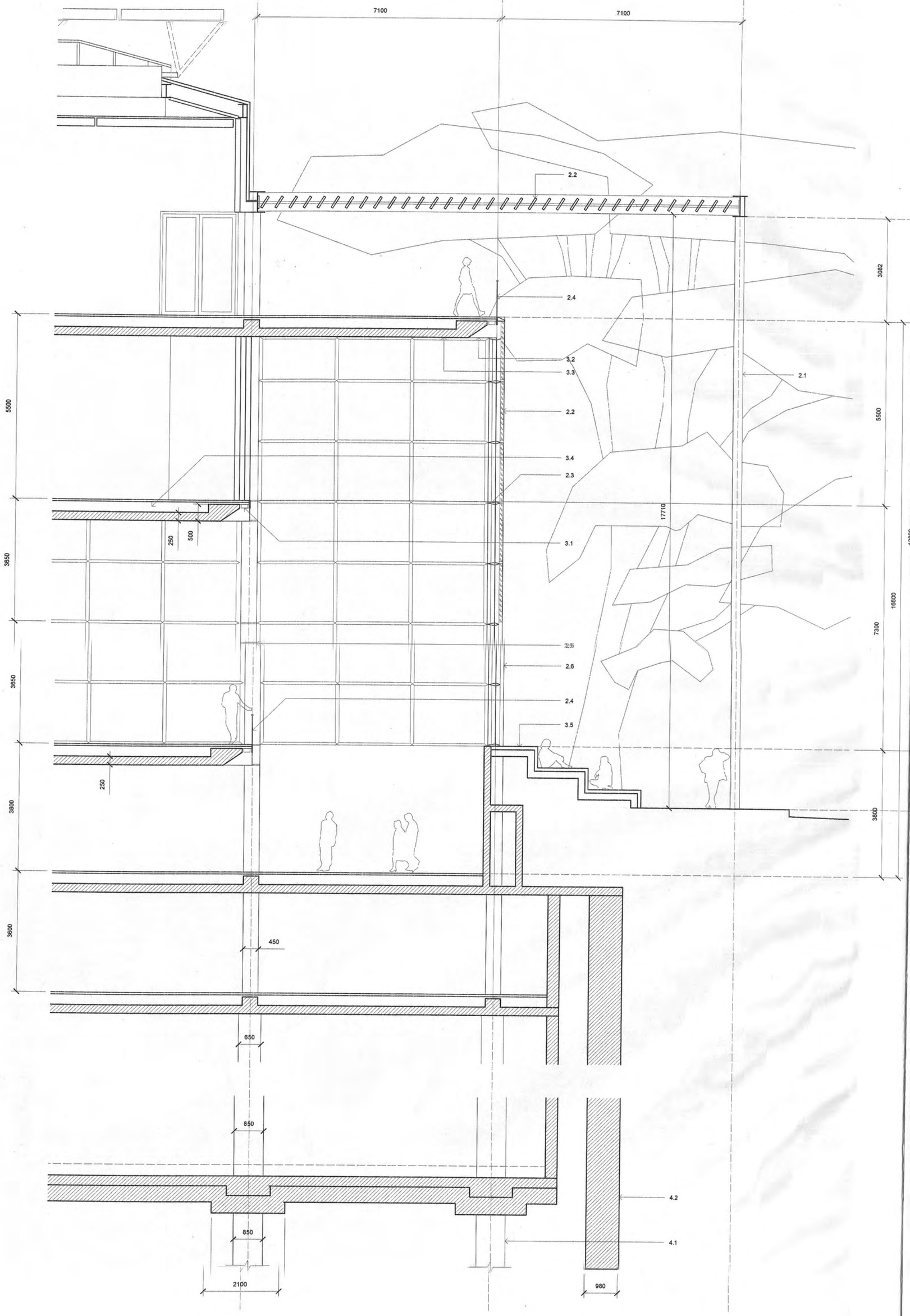
3.5 Stone clad steps lead up to the entry level floor, which we well above the outside natural ground level when, during the construction stage, that entire area of the city was flooded.

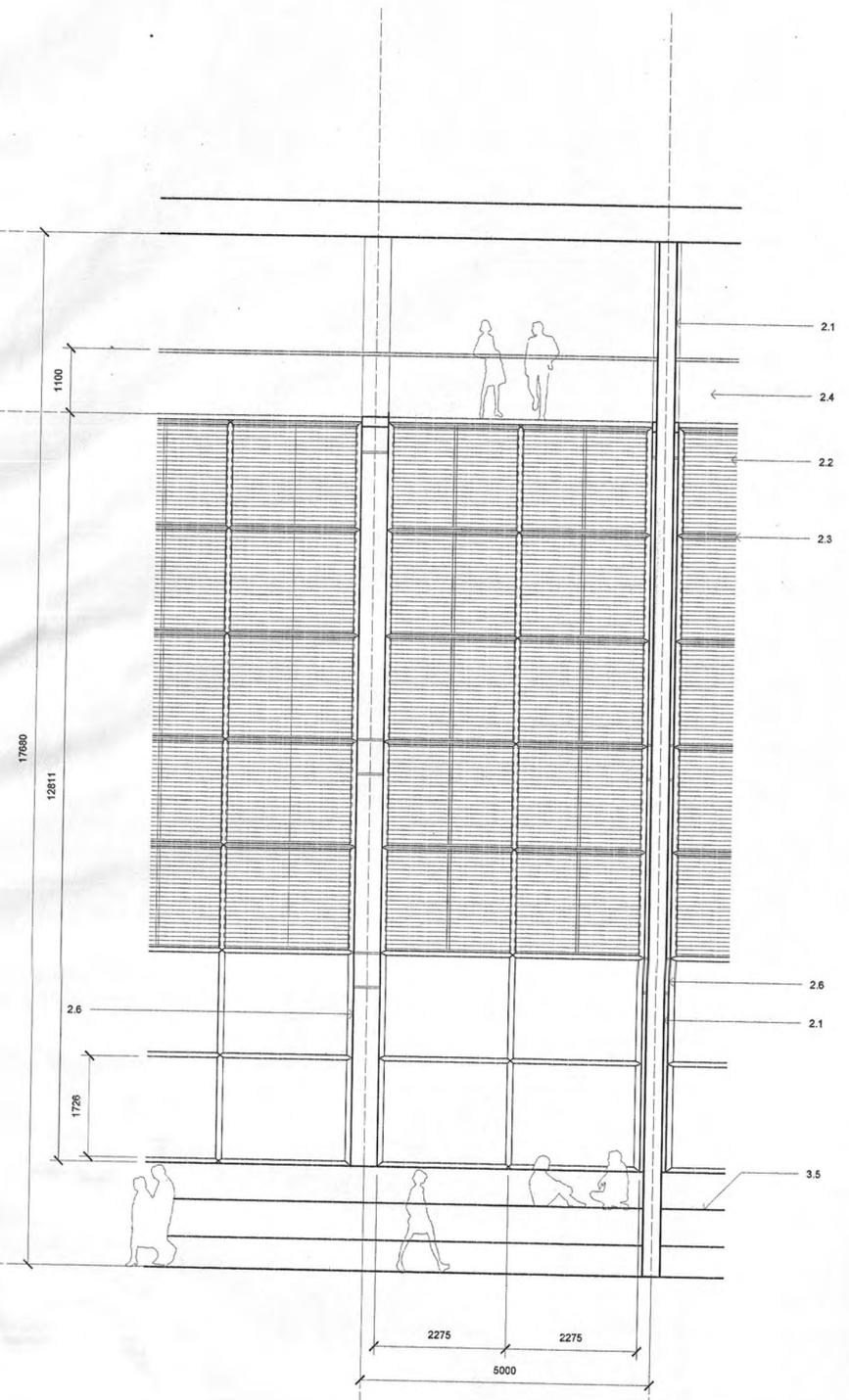
4 Substructure

4.1 The foundations will depend on the soil conditions. If the conditions are poor or unpredictable, then they would probab gone with piles, as indicated on the drawing.

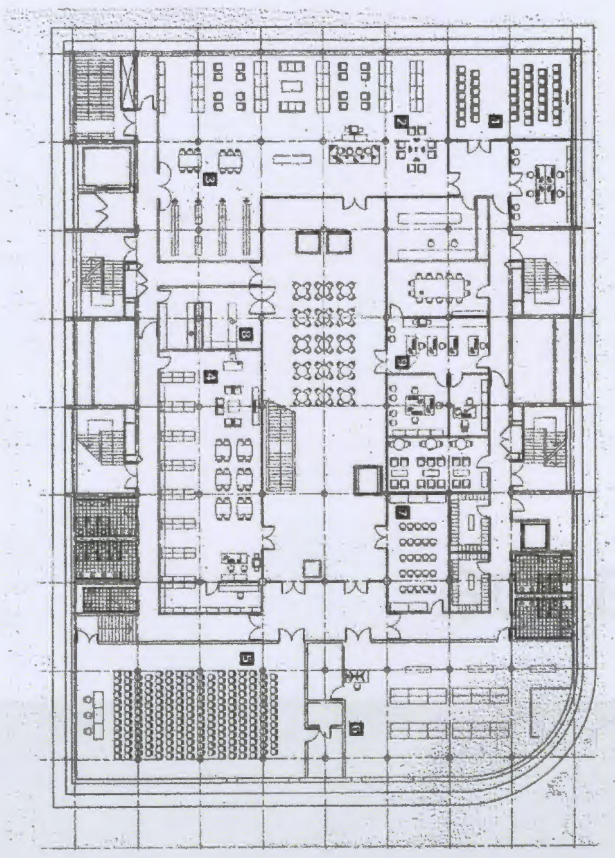
4.2 This wall indicates that an excavated well was created in building could be built under normal conditions.

It could have been a pile against pile excavation (piles drilled literally next to one another to form a wall) or a soil anchor ex (soil excavated and the earth wall held back by shutters whic anchored into the earth itself), or a combination of the two.



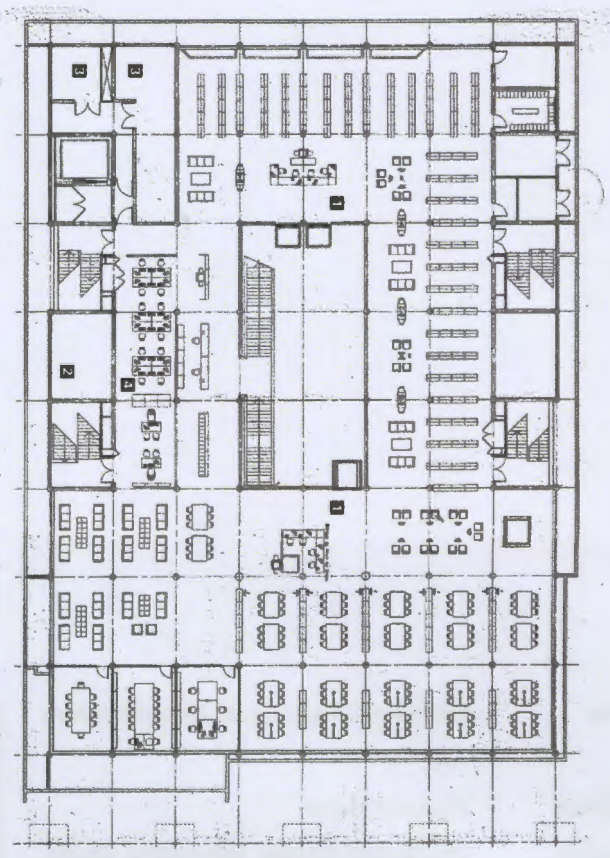


drawings



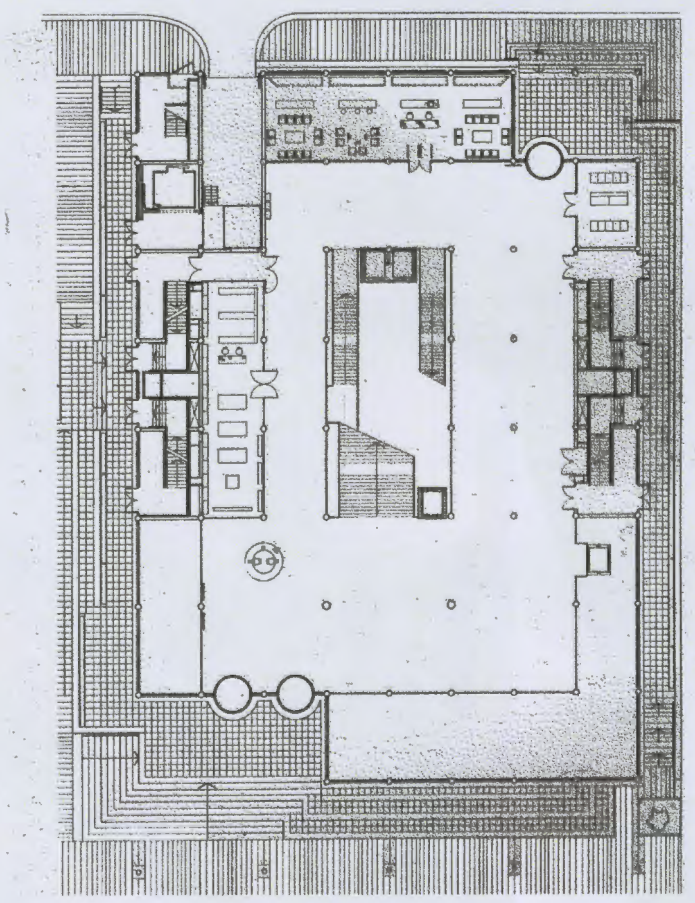
1 Lower basement floor plan

1 Auditorium
2 Music mediateque
3 Work room
4 Museum archive
5 Projection / conference room
6 Temporary exhibitions
7 Small conference room
8 Cafe
9 Administration

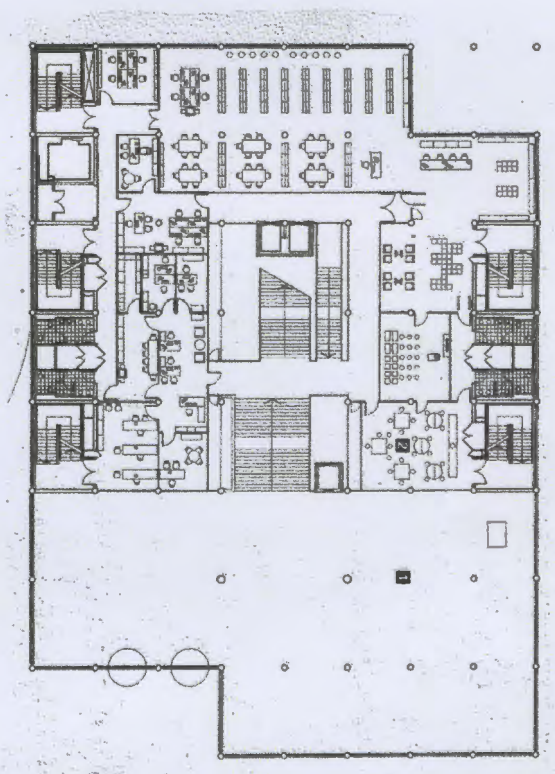


2 Basement floor plan

1 Adult mediateque
2 Air conditioning
3 Refuse
4 Administration

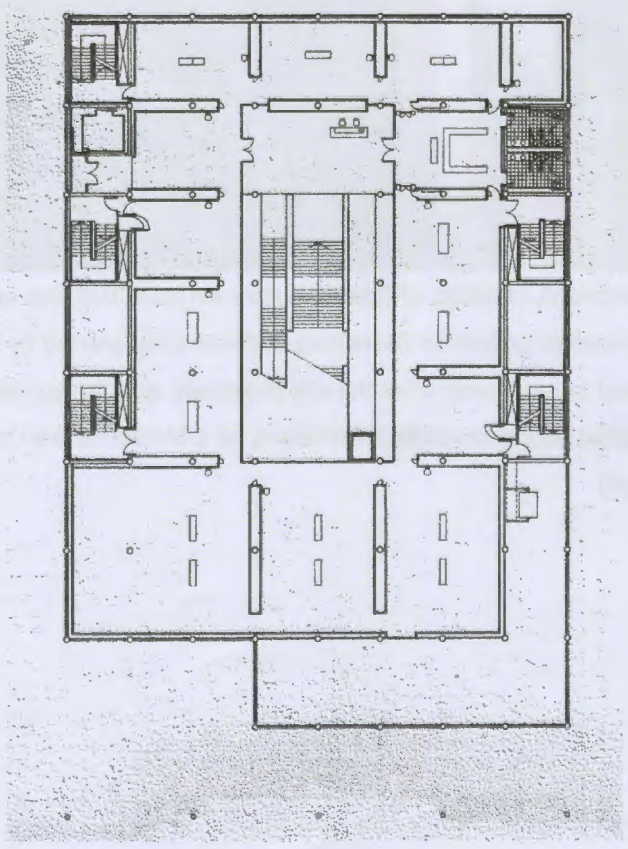


3 Entrance level floor plan

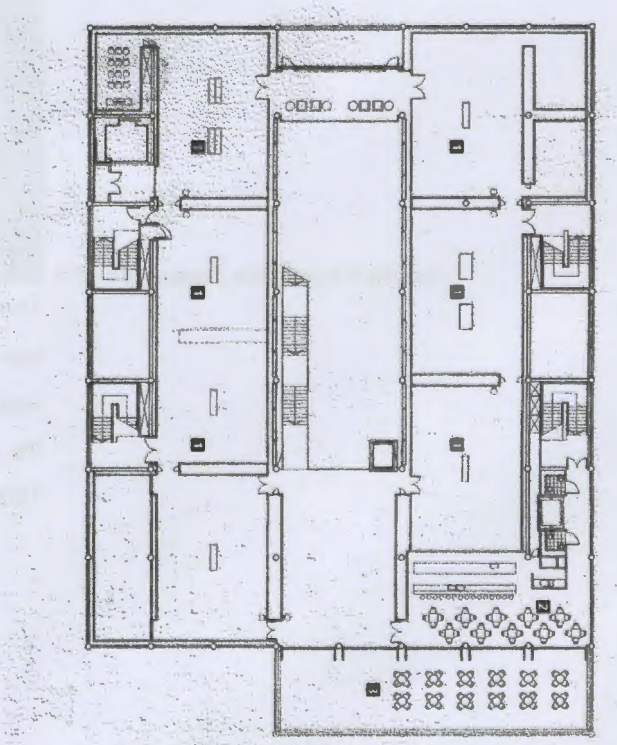


4 Mezzanine floor plan

1 Void
2 Children's area



5 Lower gallery floor plan



6 Upper gallery floor plan

1 Gallery
2 Bar
3 Terrace

Plans not to scale (January & Roux, 1993, p46/47)

macba

Name	Barcelona Museum of Contemporary Art
Architect	Richard Meier
Location	Placa dels Angels, Barcelona, Spain
Complete	1995

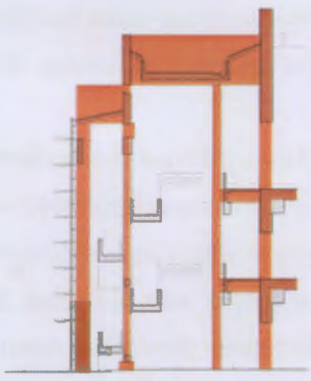
Facade of the MACBA (Green 1997, p31)

The Barcelona Museum of Contemporary Art [MACBA] was conceived as part of an ongoing urban transformation project for Barcelona that was jump started by the 1992 Summer Olympics. This mega-event was used to reconceptualise the city physically, and the successive directors of city planning have continued the original efforts to position Barcelona as a Mediterranean cultural capital, and a 'walker's city'. (Dollens, 1997, p9)

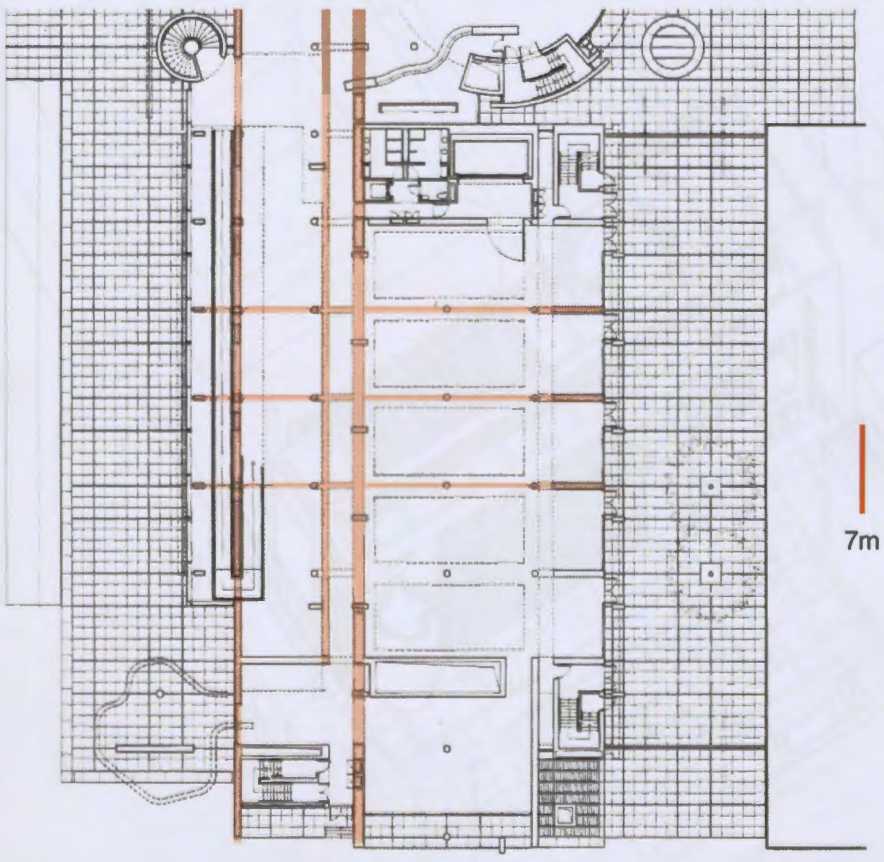
structural logic

The major superstructure is a massive, irregular concrete framework that often even protrudes through the roof in the form of fins. Most components span between modules of the framework, only the feature ramps cantilever off it.

The orange on the accompanying drawings shows the general logic of the framework.

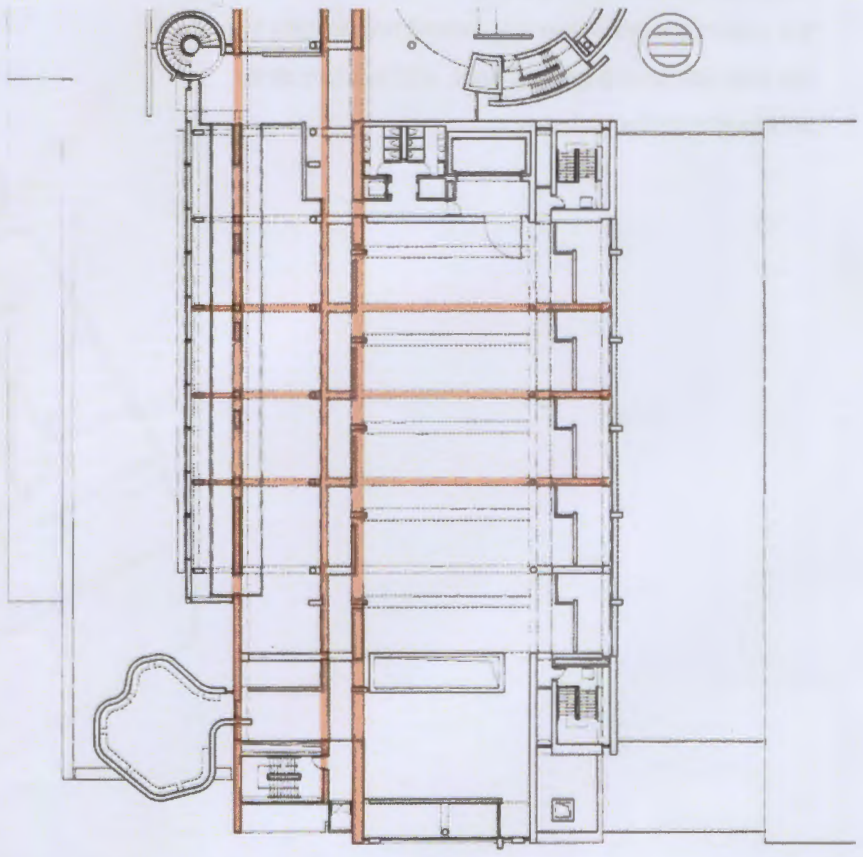


Concrete frame superstructure
(Green, 1997, p12)



7m

1 Ground floor (entry level) plan



2 First floor plan

Plans not to scale (Green, 1997, p24 / 25)

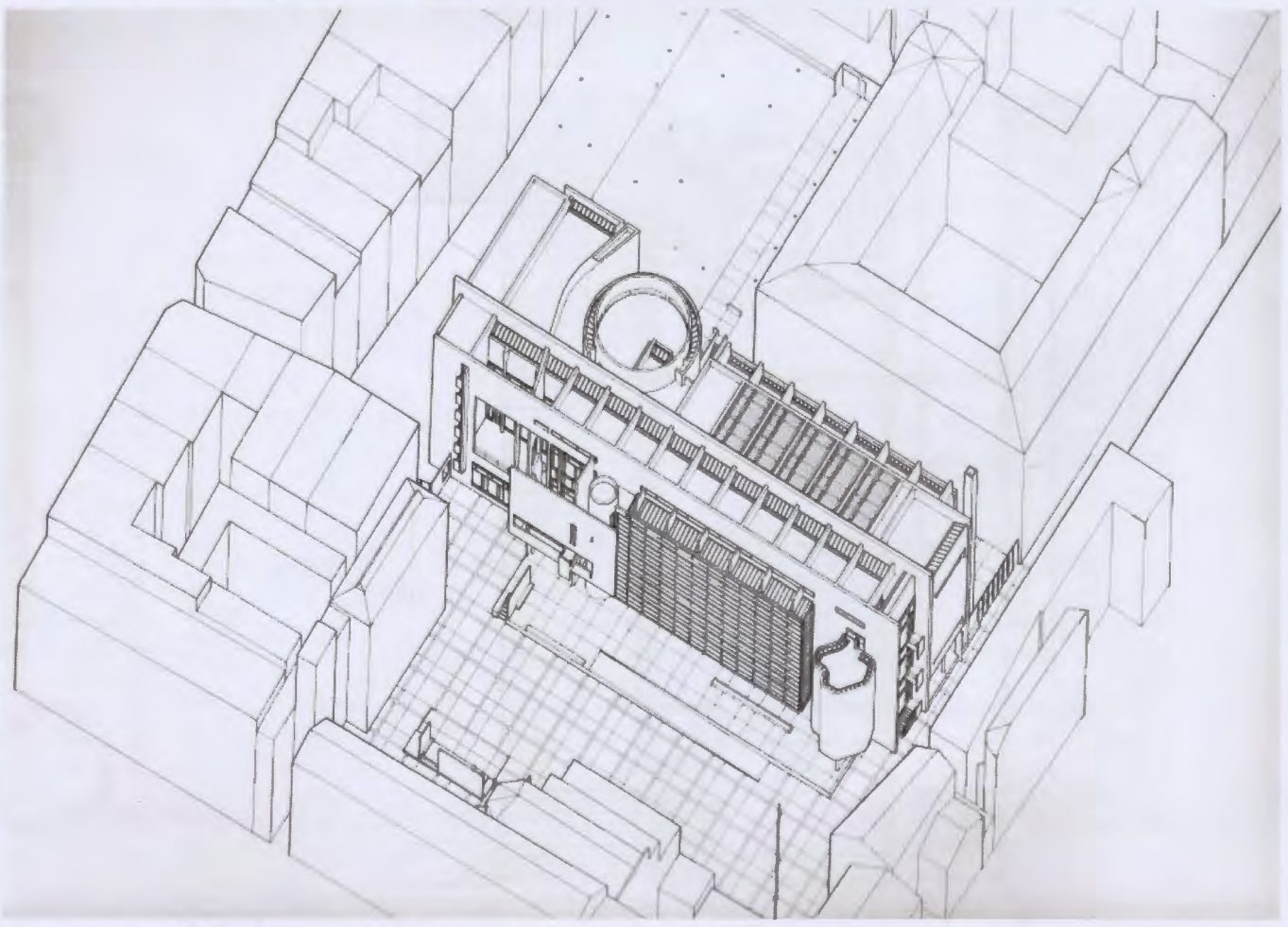
form | space

The city planners of Barcelona have made sure that walking remains a priority and that new works of architecture are worthy of walking around or through, as well as being points of discussion. The web of connective tissues in the city (public streets and spaces) has been enhanced, and architectural monuments such as MACBA have been inserted into the urban fabric. Collectively, the new urban interventions make the city more *hospitable* to its inhabitants and walkers. (Dollens, 1997, p9)

The building was envisioned in conjunction with a pedestrian plaza, which was intended to be a place where people could meet, read, take children to play or walk their dogs. Several abandoned buildings were taken down to open up such a space. The building was designed in response to the walking routes across the site, and as such there is a pedestrian route right through the building, which is used by both locals and visitors. (Meier, 1997, p16)

Although the MACBA is a distinct spatial volume, the public spaces of the city extend horizontally into the MACBA on the ground floor, and subsequently vertically into the galleries.

The MACBA and Placa dels Angels (Google Earth, 2009)



Axonometric of the MACBA (Green 1997, p31)

interface

The main entrance to the museum from the Placa dels Angels is along a low ramp that runs parallel to the façade, and under the floating concrete screen. Once inside the building there are another set of ramps parallel to the façade that take visitors up to the galleries.

The façade comes across as a continuous, multi-layered element, and screens the fact that the building is, in effect, two buildings.

The ramps sit within an enormous glass box, or bay window, which projects into the plaza. The window is made up of continuous modular glass panes held in a deep aluminium frame. The frame is coated with a baked, white enamel to match the exterior of the building. There is a recessed steel corner making a right-angle turn to join its front and side walls. The sun screens are composed of simple rectangular and tubular elements in aluminium. (Dollens, 1997, p13)

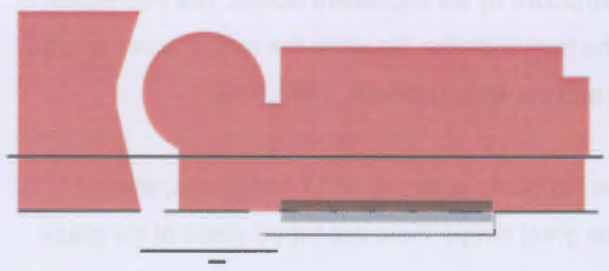
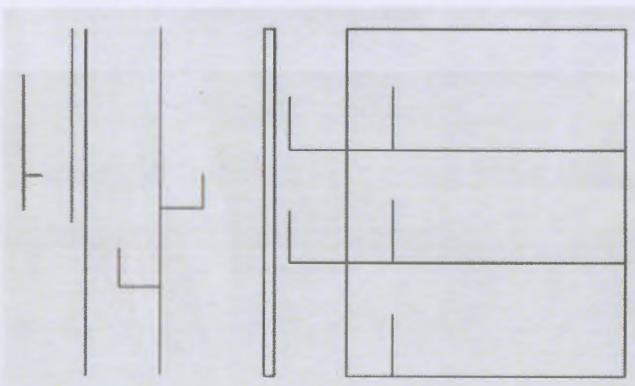


Diagram showing building as, in effect, two parts, with planar elements creating the impression of a unified whole on the side of the Placa dels Angels



Schematic diagram of planar elements (Placa dels Angels is to the left side of the page) (Green, 1997, p14)

Critic Dennis Dollens (1997, p13) sees this enormous bay window as a screen into the museum's interior structure and life, and as part of an overall intention to overlap inside and outside spaces by creating layers of semi-permeable planar elements, starting from the small balcony over the entrance, then the large exterior wall screen, then the big 'bay' window and finally the superstructure holding the major ramps. The first real break in this series of interstitial spaces comes at the entrance to the galleries themselves, which are set back into the building by at least one third of its depth. (Dollens, 1997, p14)

The layered public façade therefore does two things. Firstly, despite its complex arrangement, and the movement of public space through the building, it forms an unambiguous limit to the spatial experience of the plaza. Secondly, it serves to absorb the outdoor public space into and through the building by means of its layers.

View of the façade from Placa dels Angels
– showing the façade as one complex element, despite the building behind being, in effect, two separate buildings
(Frampton, 2003, p252)

intermediate spaces

These main circulation ramps (shown below) are the grandest architectural gesture in the museum. The concrete frame that supports the ramp seems to be part of a wall, but it is not. The frame is supported on six blocks at the floor and is separated from the ceiling superstructure by six equivalent blocks. The impression is that the structural frame is held in compression between the twelve blocks. So while the ramps hover around the structural frame, the frame hovers between the ceiling and the floor. (Dollens, 1997, p13)

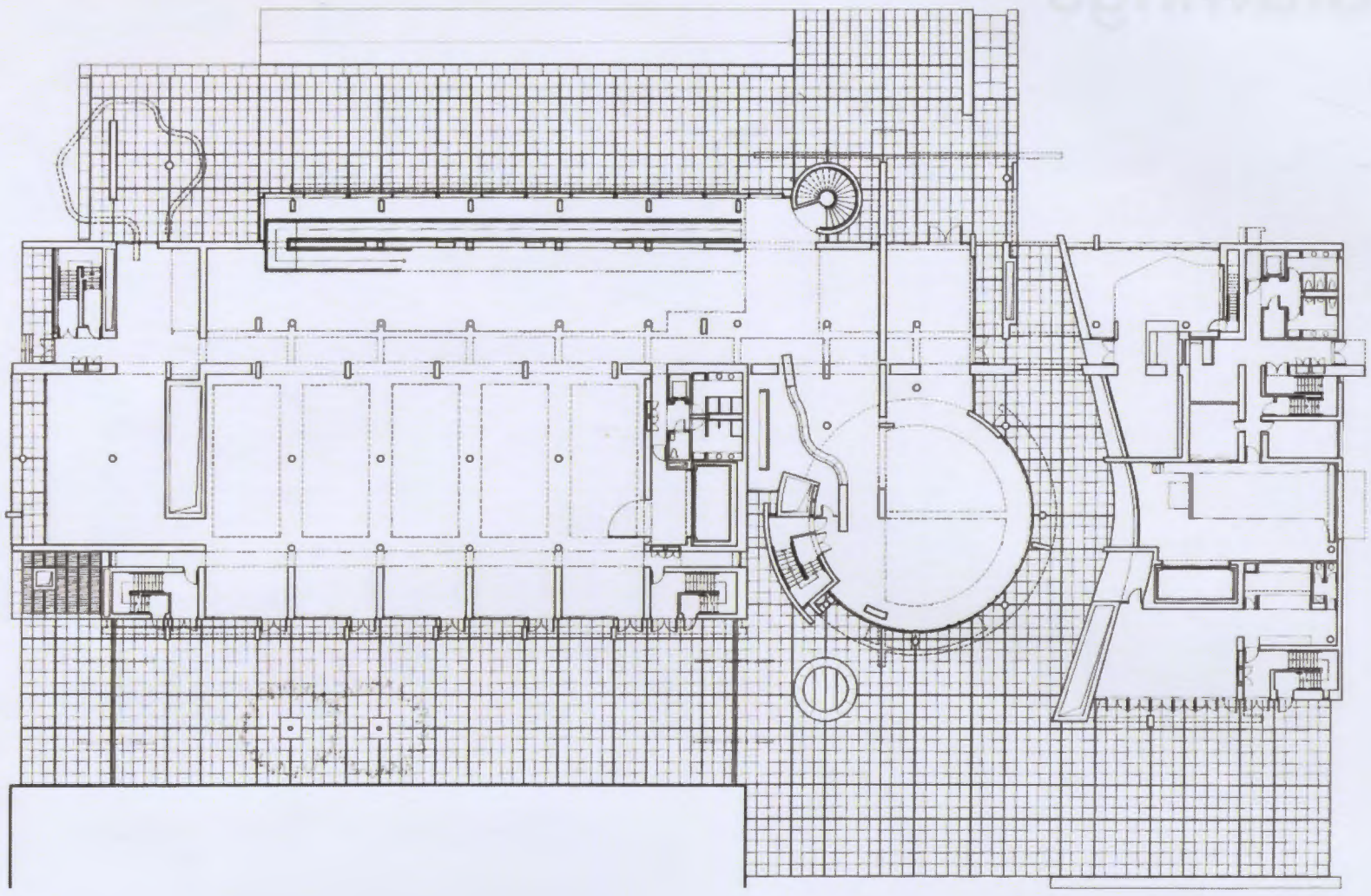
The main hall that houses the circulation ramp is seen as a big public space open to many uses, which mediates between the city and the gallery spaces. From the great ramps there are broad views of the plaza and the city beyond. (Meier, 1997, p16)

The long hallways next to the galleries, edging the great hall, are paved in glass blocks, and from below they appear as paths of light. (Dollens, 1997, p14)

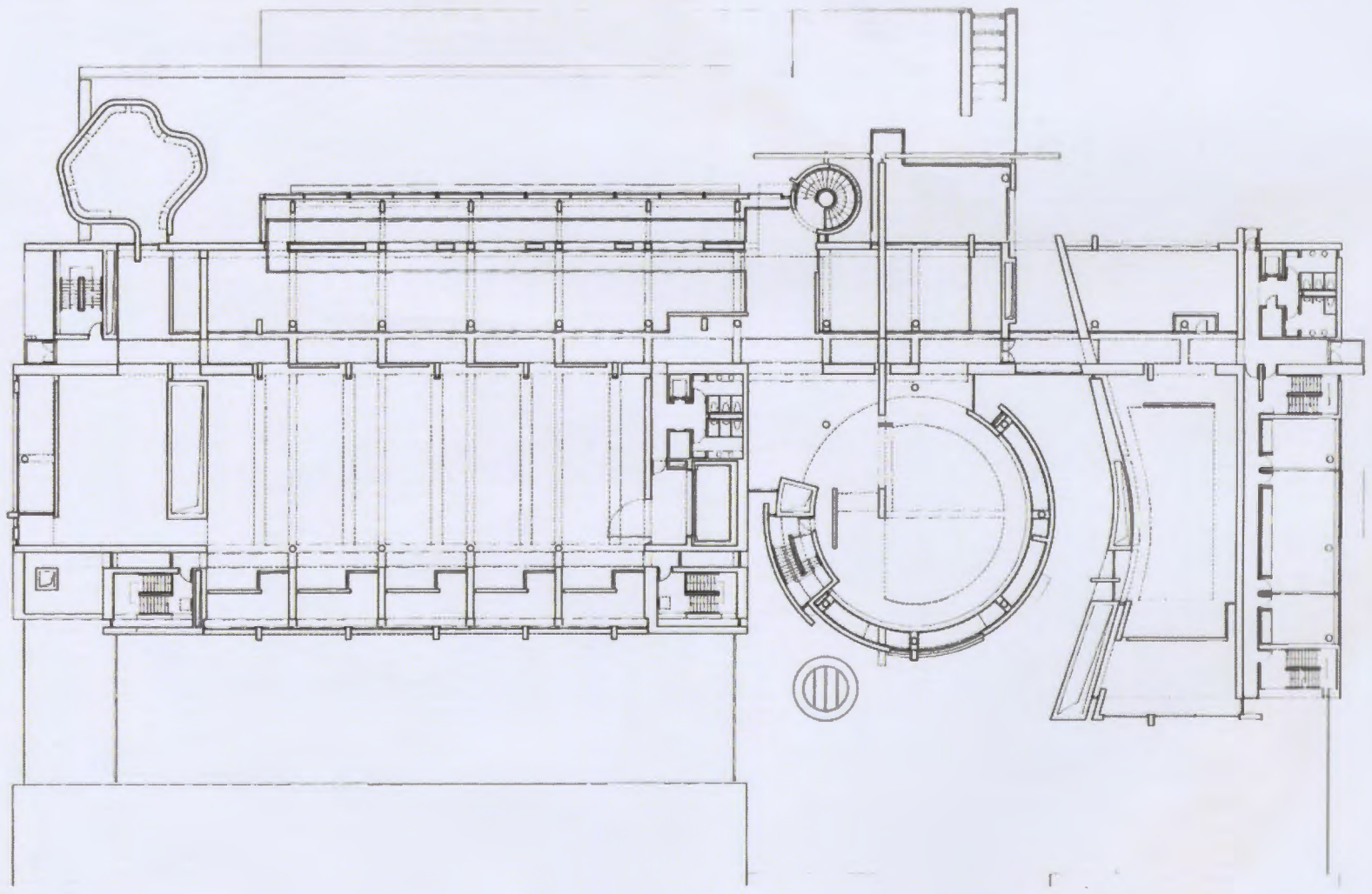
View of great hall from first floor (Green, 1997, p67)

View of great hall from ground floor (Green, 1997, p66)

drawings

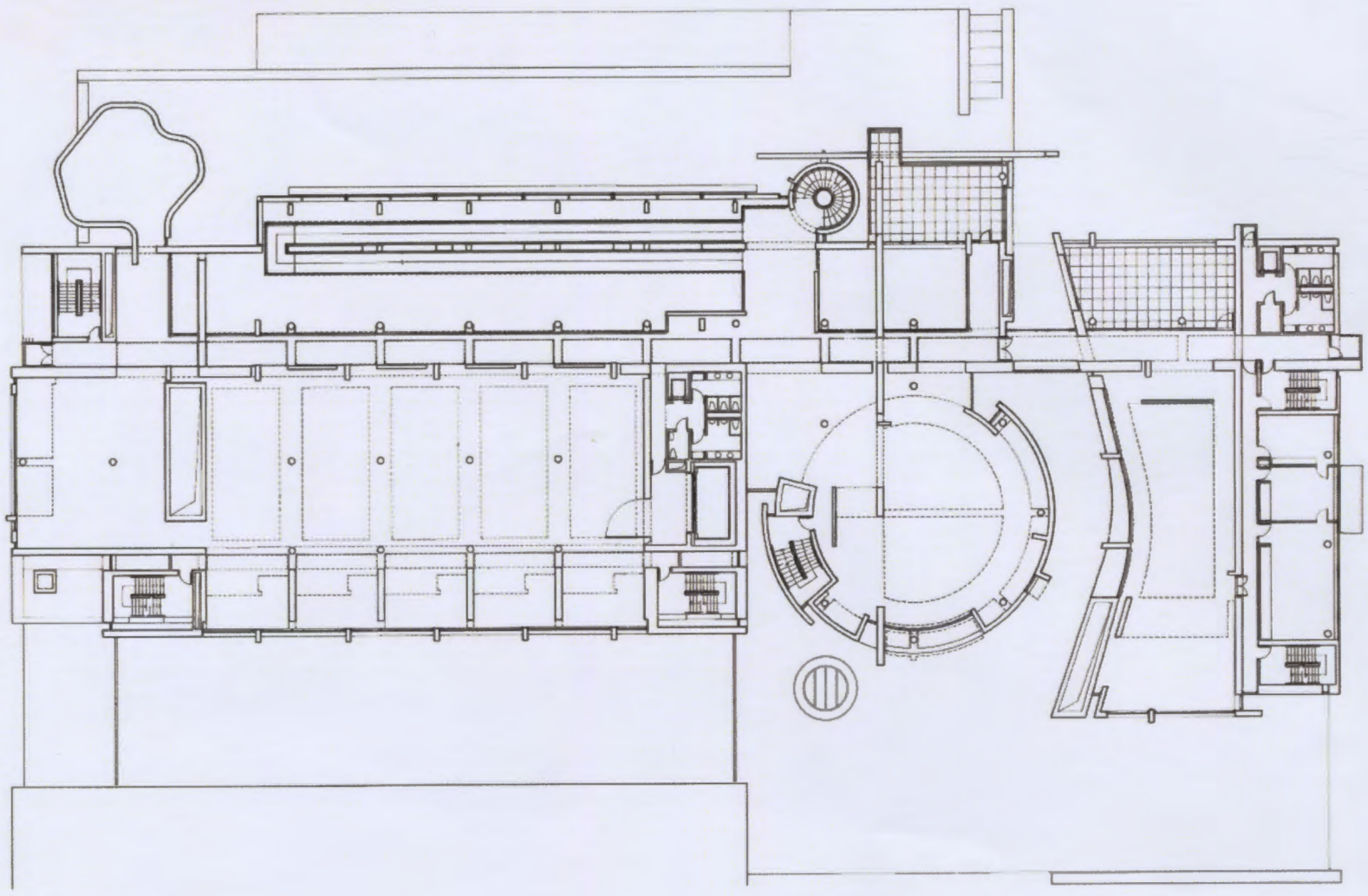


1 Ground floor (entry level) plan

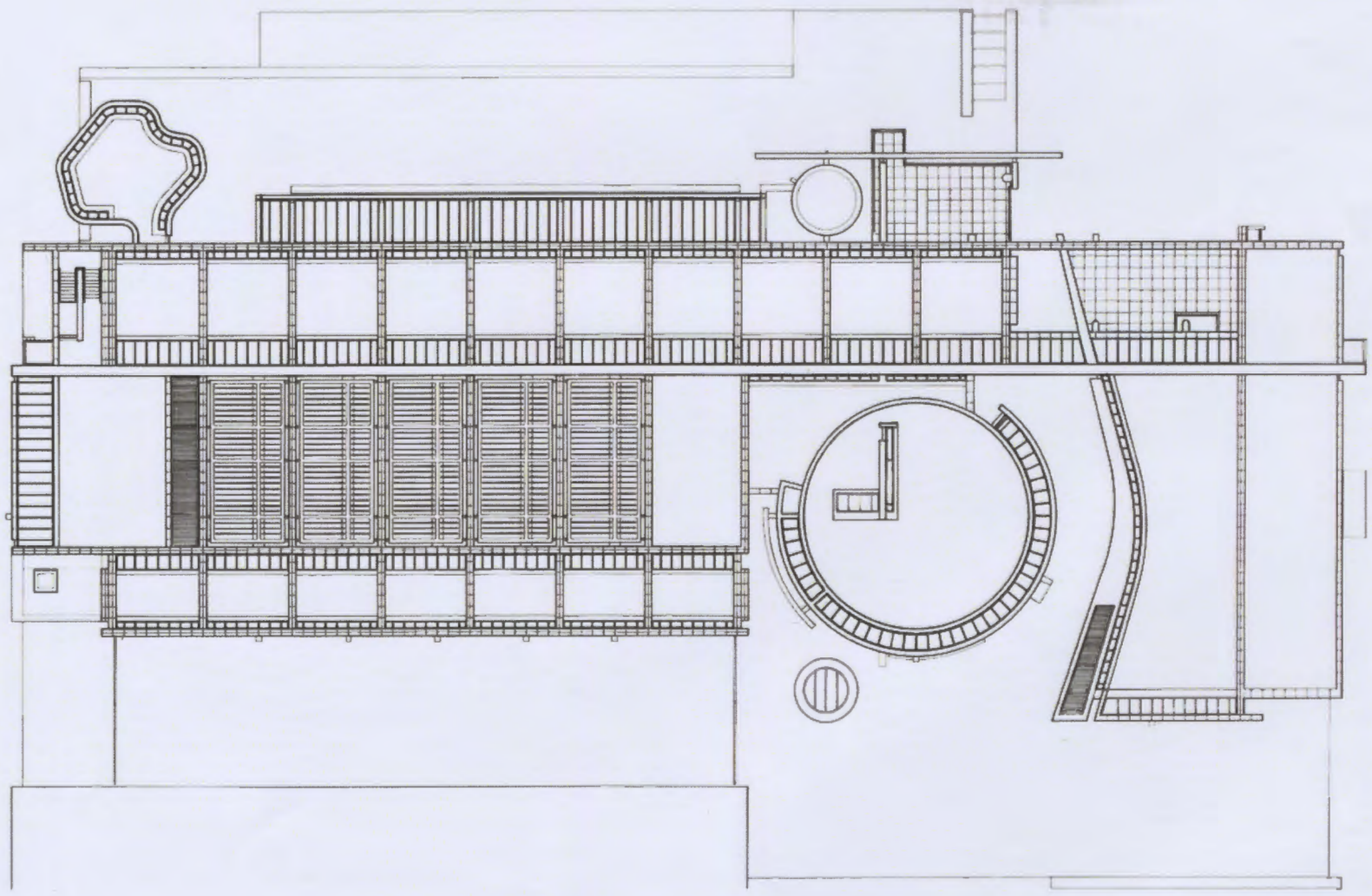


2 First floor plan

Plans at approximate scale 1:500 (Green, 1997, p24 / 25)



3 Second floor plan



4 Roof plan

Plans at approximate scale 1:500 (Green, 1997, p24 / 25)

MACBA
Section / Strip Elevation

Notes

Drawing scale 1:100

Note: Most dimensions and notes are estimates based on looking at drawings and photographs and making logical assumptions. Structural information has been deducted with the help of a local structural engineer, Jaap Beute.

1 Roof

1.1 Concrete roof to falls in two directions, either carrying water to downpipes in columns, or to openings in the concrete fins (see roof plan) from where the water can pass into the next bay and onwards

1.2 Glass skylight in aluminium frame, enamel baked white to match aluminium tiles

2 Walls

2.1 730mm rectangular and tubular aluminium sun screens , pinned back to the aluminium box frame windows at 3500mm c/c - in line with vertical window mullions

2.2 3500 x 850mm modular glass panes held in a 200mm deep aluminium frame, enamel coated white to match the exterior of the building. The aluminium grid framework holding the panes of glass is pinned back to the superstructure at 7000mm c/c, not at the vertical mullions but in line with the concrete fins.

2.3 White enamel coated aluminium tiles

2.4 800 x 400 concrete fin (part of major structural frame) at 7000mm c/c

2.5 Concrete framework 350 x 350mm at 7000mm c/c

2.6 Concrete fins that support the ramp, 1500 x 630mm at 7000mm c/c

3 Floors

3.1 400 x 1400mm concrete ramp attached to concrete frame at 700mm c/c, but also to the short walls which span at regular intervals between the structural frame, and which serve to provide enough wall space for the ramps to grid to, but which don't hold any overhead structura. these walls are slightly wider than the structural frame itself, and stretch for 1500mm parallel to the ramp, at 7000mm c/c.

The ramp is tension cabled onto this wall, by pulling a cable perpendicularly through the floor of the ramp and into the wall, then filling the sleeve for the cable with grout and cutting off the tensioning bolts, to get the perfect finish that can be seen in the photographs. (Beute, 2009)

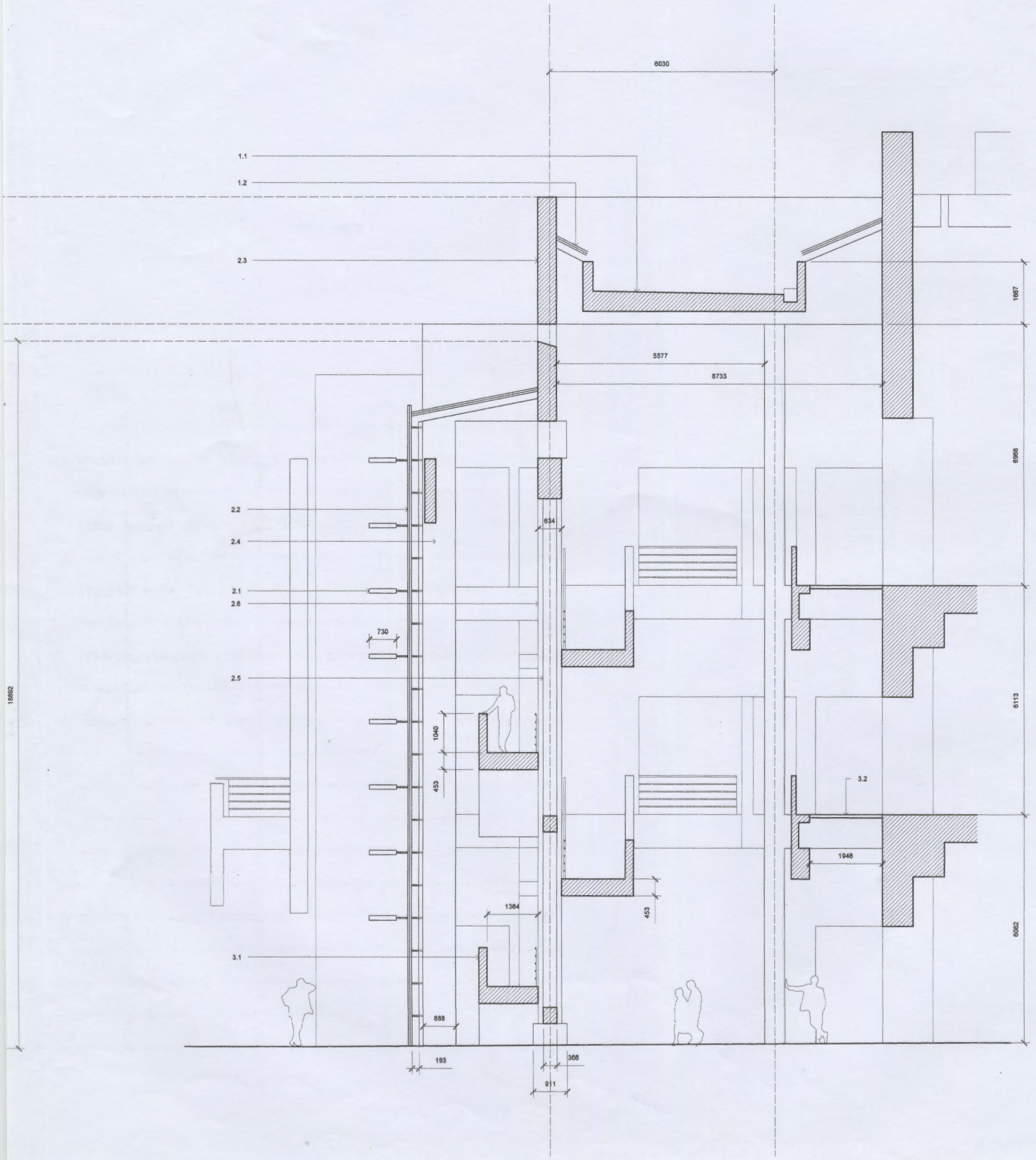
The ramps would also have reinforcing steel running parallel to the walking direction, to span between the tension cables into the wall.

The effect of the ramps being balanced on either side of the structure balances the load on the wall.

3.2 Glass bricks held on metal T grid spanning 2000mm across the walkway and 7000mm between concrete fins

4 Substructure

No information available


6030
1.1
1.2
2.3
1667
5577
8733
6968
2.2
634
2.4
2.1
2.6
730
2.5
18892
1040
453
6113
3.2
1946
1364
453
6062
3.1
888
193
366
911

conclusions

Form / Space

In terms of defining positive space outside the building, both the Murcia Town Hall and the Carré d'Art are incredibly successful, both in totally different ways. The Carré d'Art defines a delicate spatial box which is framed by regular, slender columns all around the building, and which is strictly adhered to - all the intermediate spaces are recessed within this box.

Murcia Town Hall also recesses all the intermediate spaces within a formal envelope, but this envelope is not defined by an obvious spatial volume, but is a result of the order of the streets and spaces around the building compressing the building, and it works very well for such a compact site. This envelope then becomes a heavy, load bearing wall, and is combined with a few carefully positioned columns.

The MACBA, while it is certainly not recursive but rather made of lots of objects, makes a strong connection to the public spaces of the city by taking outside walking routes right through the building.

Carré d'Art cafe balcony (Sullivan, 2007)

The MACBA 'street' (Greene, 1997, p14)

Background to the public place

All the buildings present themselves as a background to the public place, and in each case the background effect is achieved through an element of constraint.

In Murcia, this is apparent in the strict adherence to the recursive plan, and the expression of this through very controlled sandstone cladding. In the Carré d'Art it comes through the very controlled grid and refined tectonic resolution of the glazing and louvres. The MACBA too exhibits restraint in Meier's characteristic use of the colour white for everything, which gives all the disparate forms a strong sense of continuity.

The MACBA uses planar facade elements layered accross the front to evade the fact that the building is actually two separate buildings behind, and I think this has been successful in terms of making a continuous background to the square.

Murcia Town Hall intermediate spaces (Cecelia & Levene, 2000, p85)

Generous intermediate public spaces

The most generous interface with the public space is the Carré d'Art, simply because the intermediate spaces are actually outside the building, and therefore wholly accessible to users who may never enter the building. Also, the cafe balcony, which has views all across the city but especially of the Place de la Maison Carreé, is outside, but within the volume defined by the steel columns. These real outside places are much more connected to the city than the glass bay window of the MACBA. The glass is much more reflective than it is transparent, and the experience of the great hall comes across as a very inward focussed one.

Murcia Town Hall, on the other hand, has fantastic intermediate spaces that are, like the Carré d'Art, outside, within the spatial envelope, with a fantastic feeling of connection to the city. However, these spaces are not programmed for constant use, nor are they accessible when the building is closed (with the exception of the sunken cafe).

The lessons learnt here constitute a palette of ideas that inform my architectural proposal for a cluster of social facilities that exceed their utilitarian functions to become the background to collective life.

designing

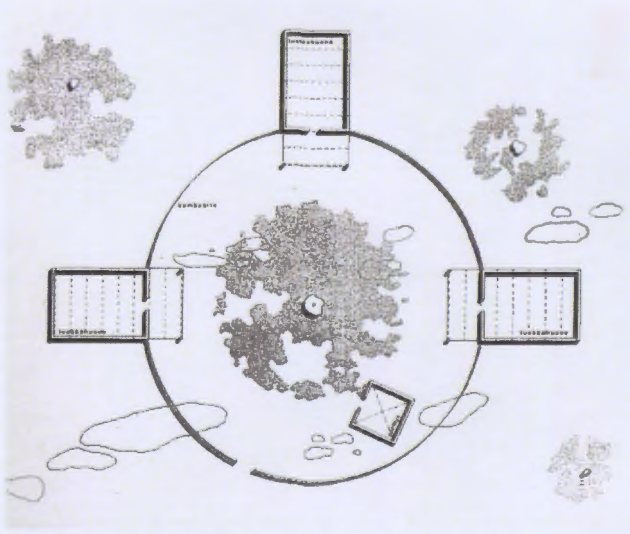
architectural themes

The first chapter of this thesis explicated a set of principles that I believe can contribute to making social facilities and public spaces that provide the background to collective life. These principles are reconsidered here in terms of architectural, spatial relationships.

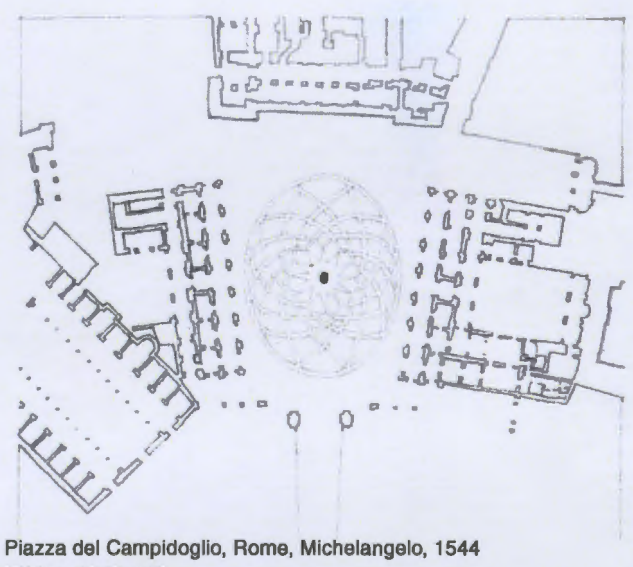
The original principles include that the facilities should be clustered, that all the amenities should be as multi-functional as possible, that the buildings should articulate positive collective spaces, that the relationship between the buildings and space should be legible, and that the spaces provided should be generous and flexible.

The plan of a village school in Guinea and Michelangelo's Piazza del Campidoglio embody the principles outlined above, in terms of architectural or spatial relationships. Three main areas of interest come to the fore when examining these plans:

- Relationship between form and space
- Interface between building and space
- Intermediate spaces



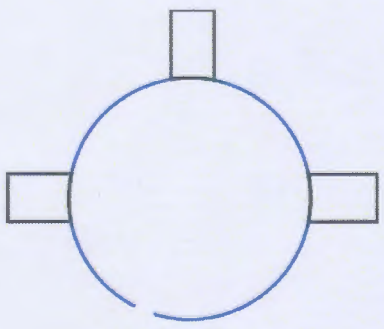
Village School in Guinea. (Grondlund et al, 2002, p34)



Piazza del Campidoglio, Rome, Michelangelo, 1544
(Ching, 1943, p5)

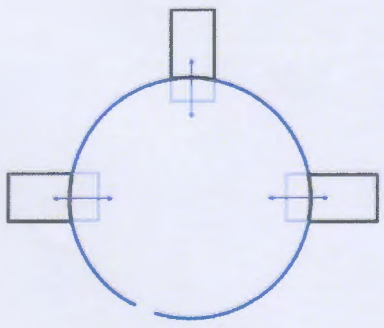
Form / Space

The relationship between buildings and space is considered as a whole. The buildings are not agglomerations, but recursive, subtractive forms that respond to the order of the public space. The public space, then, is a 'positive' space, not a ground for a figure, but a figure in itself.



Interface

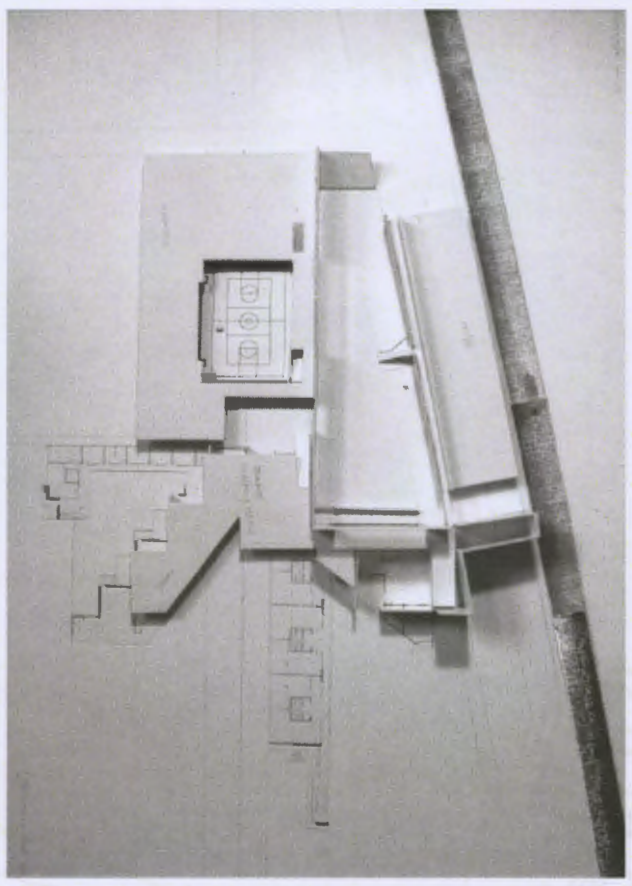
The interface between the buildings and the public space is seen not only as the face of the building, but as the background to the public space. Its role is both to relate and separate activities inside and outside the building, and to define the character of the public space.



Intermediate spaces

The interface between the building and the public space, provides a range of intermediate spaces, that range from very exposed to quite intimate, which are generous, flexible spaces, open to any use.

initial concept model



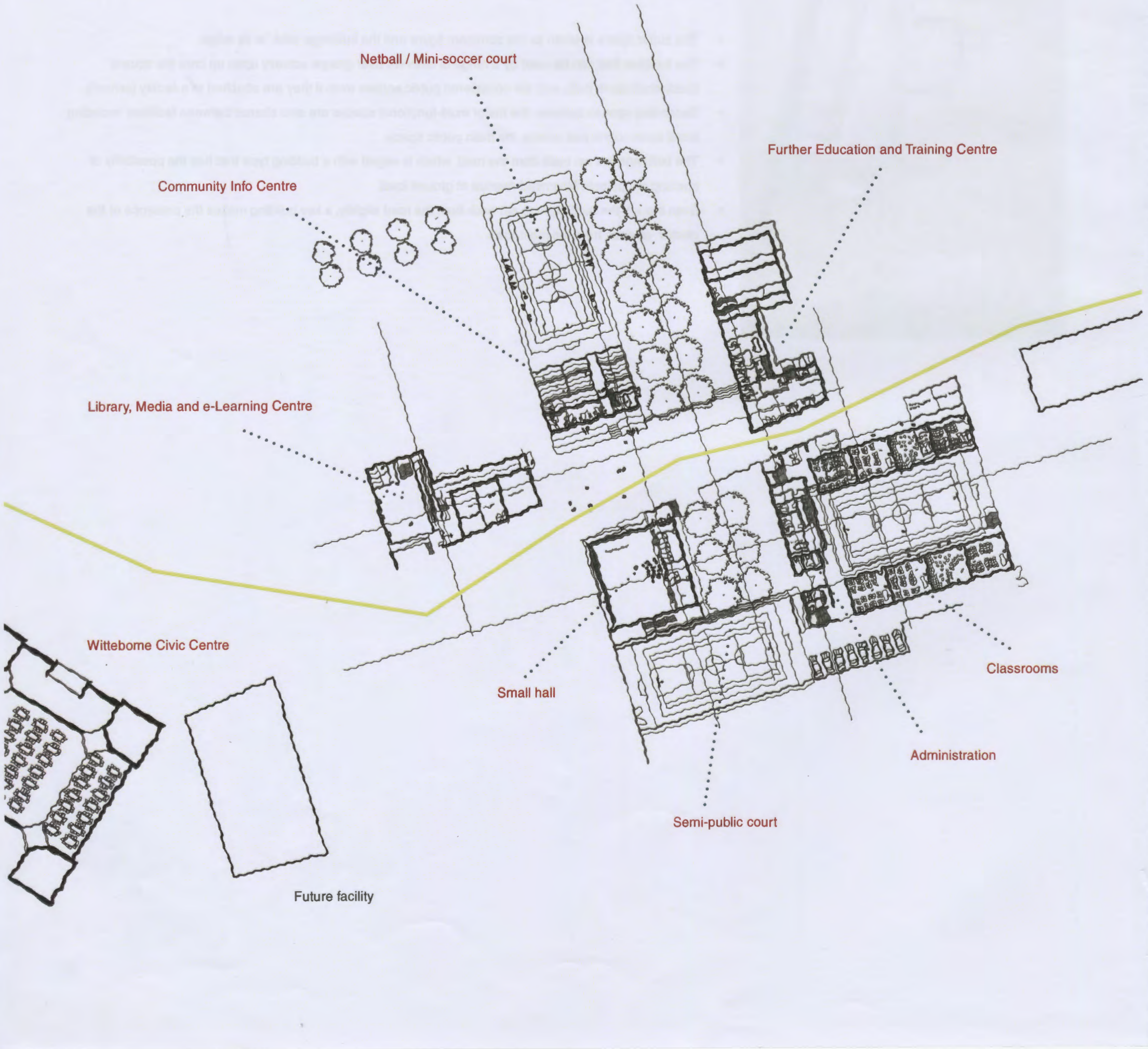
This initial concept model is not site specific, but acknowledges the predicted situation where the cluster of facilities needs to be as exposed as possible, without having the main road (Rosmead Avenue) running next to it or through it.

The model explores the following ideas:

- The public space is taken as the dominant figure and the buildings 'stick' to its edge.
- The facilities that can be used by a range of different user groups actually open up onto the square (basketball court, hall), and are considered public entities even if they are attached to a facility (school).
- Secondary spaces between the major multi-functional spaces are also shared between facilities, including small open courts just outside the main public space.
- The buildings are set back from the road, which is edged with a building type that has the possibility of opening shops onto Rosmead Avenue at ground level.
- Even though the buildings are set back from the road slightly, a key building makes the presence of the cluster obvious from the main road.

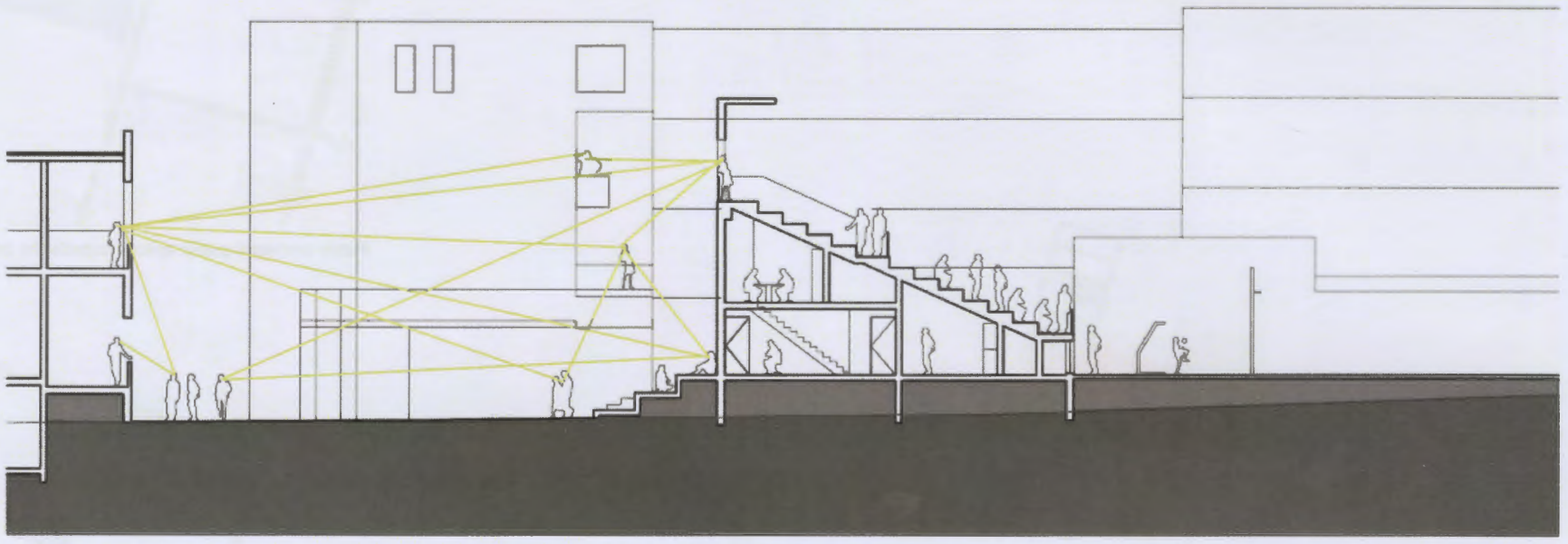
form | space

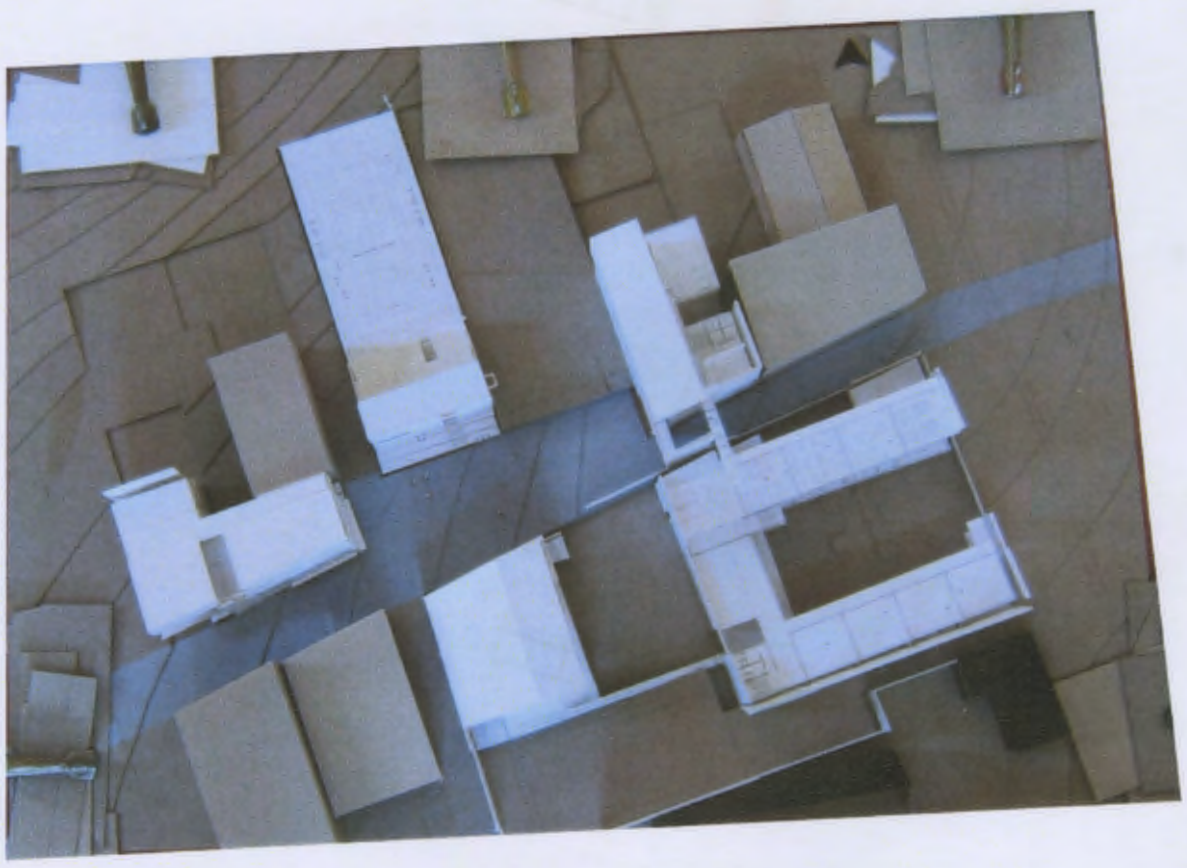
All the buildings are urbane fragments of the city (Curtis, 1994) which, as the first buildings of a large scale development on a vast site, take up the role of articulating the system of public space links all important or special places on the site. Open spaces are carved out of the plots, rather than form being made through agglomerations of objects. The system of public space is as much a figure as a ground.



interface

The facades of the buildings will be recursive, space defining planes, but with openings cut in varied and interesting ways that relate different parts of different buildings to one another.



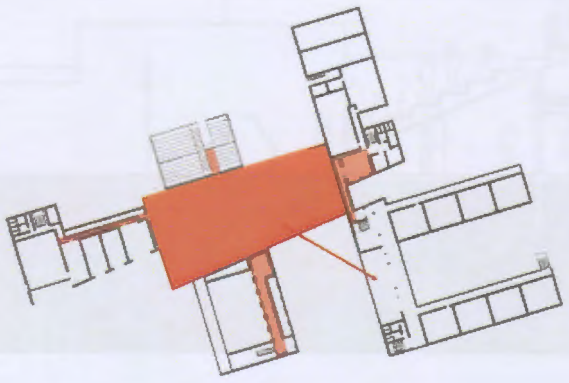


interstitial spaces

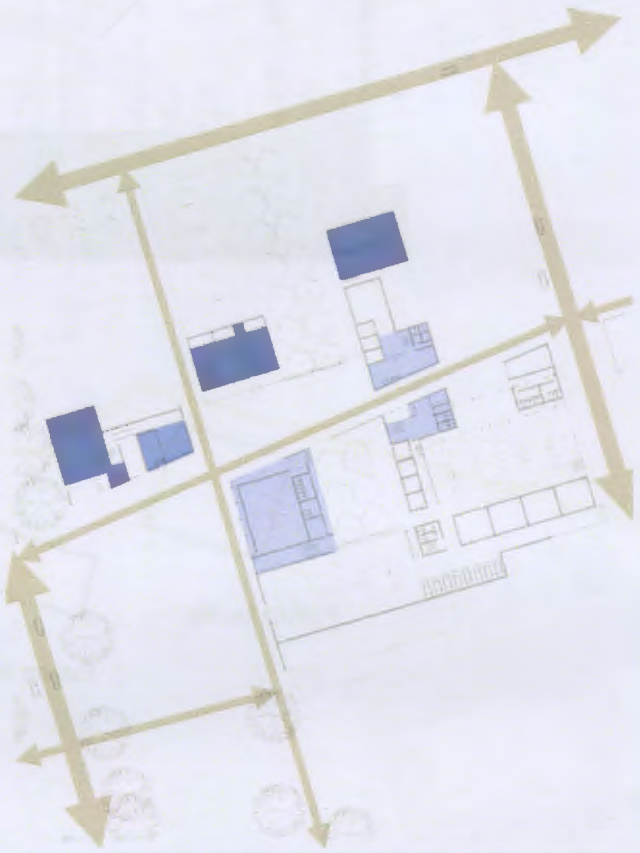
Each level of every building has spaces that relate to the public domain (see diagrams below). Some are in between places that can be used at different times by different people, and others are restricted to the users of the building but serve to relate inside spaces to outside space.

The most prominent interstitial space is the court at ground level that is shared between the school and the community. This tree filled court can be used as a fore court to the school, and would be used as such during the full course of the school day, but in the afternoons or evenings it could be used as a fore court to the forum. Tucked underneath the forum are toilets and a kitchen that service the school in the day but can be used for functions in the afternoon and evening.

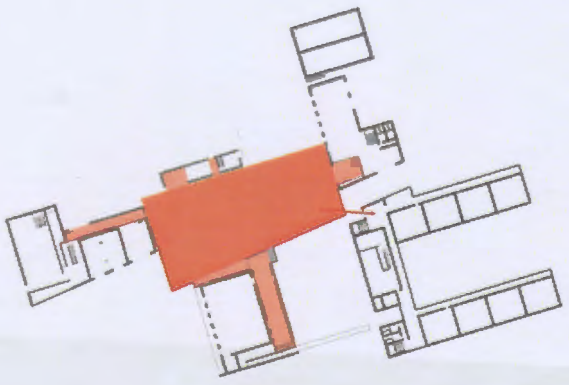
Public and semi-public spaces outside the buildings at ground floor



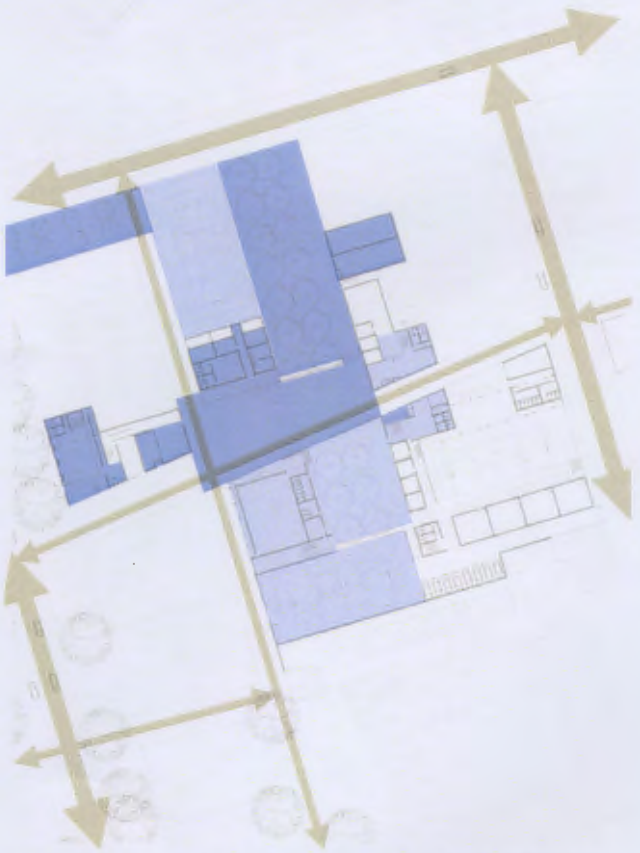
Level 2



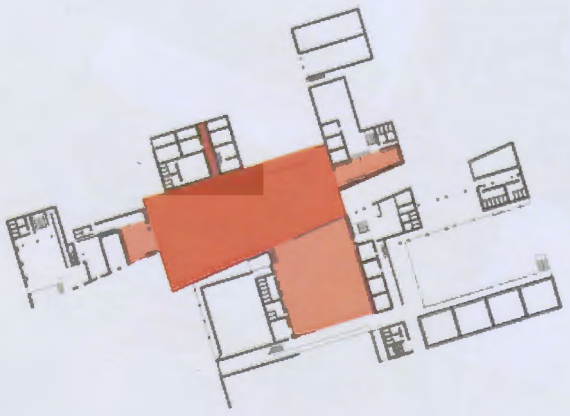
Public and semi-public spaces inside the buildings at ground floor



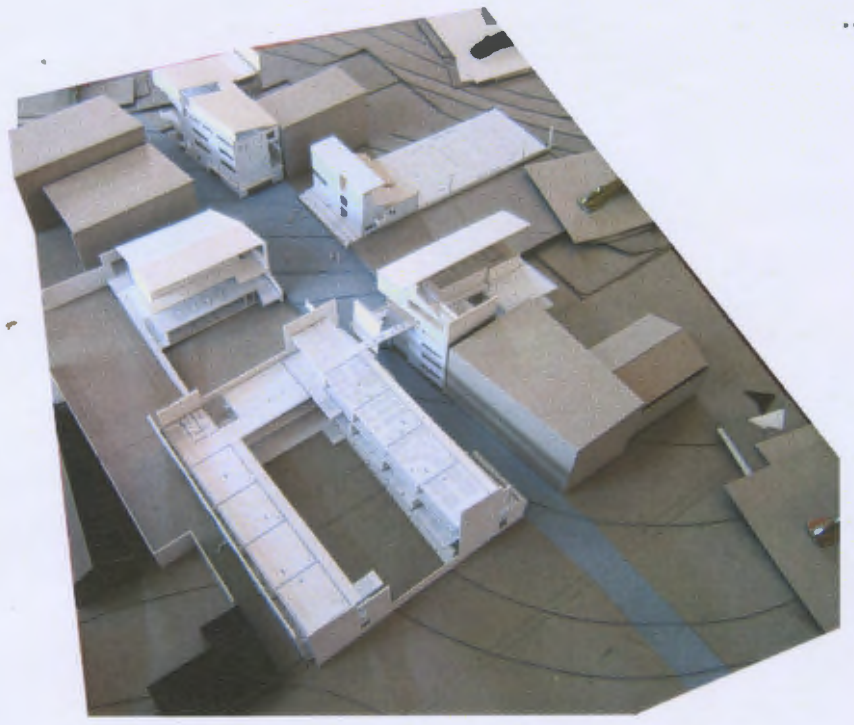
Level 1

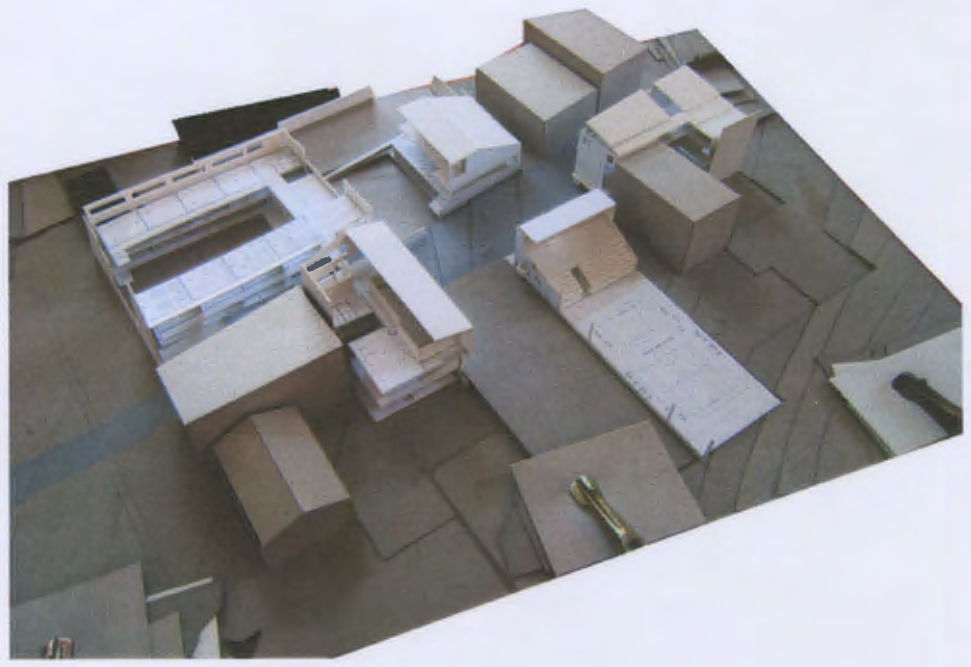


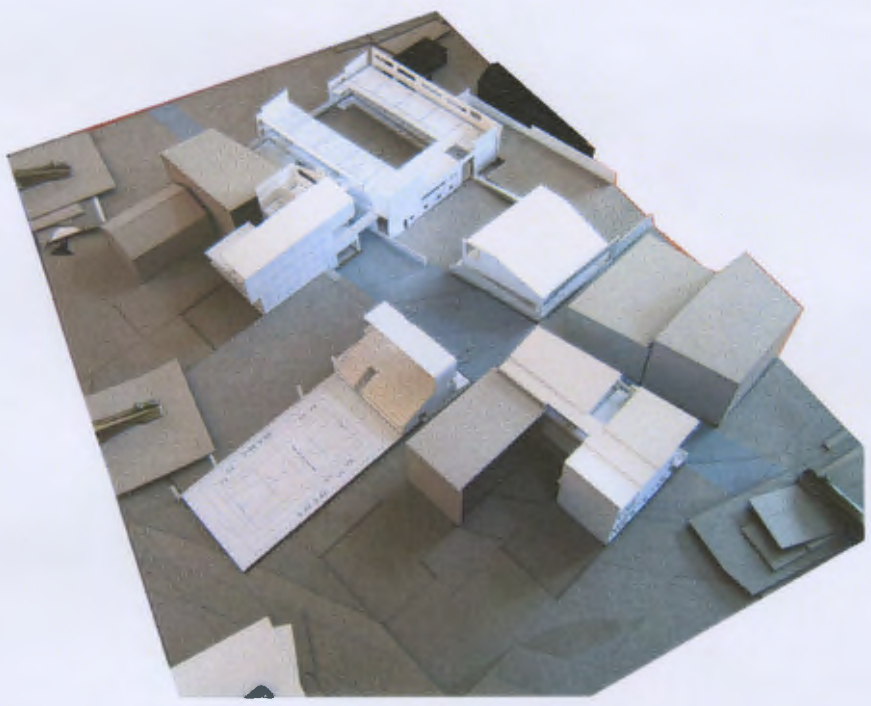
Public and semi-public spaces outside and inside the buildings at ground floor

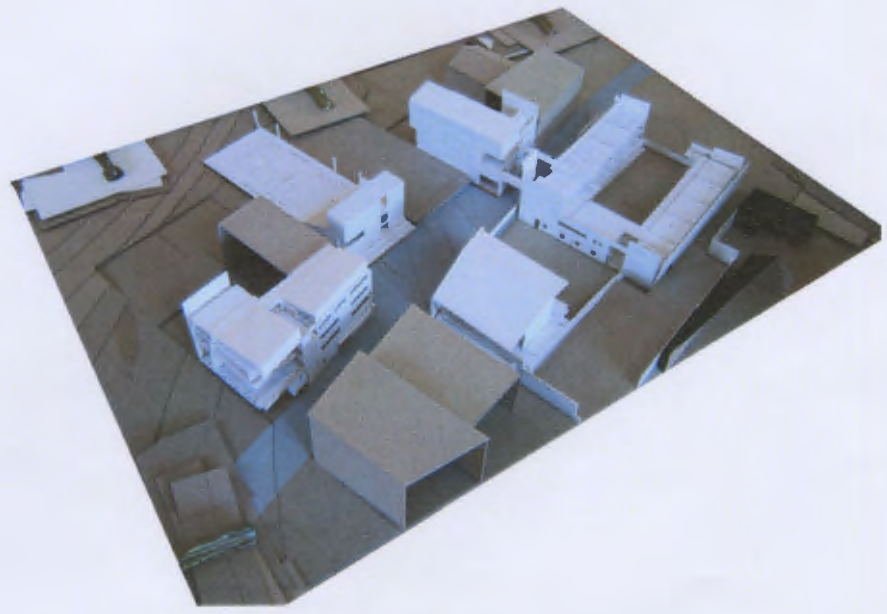


Ground floor









conclusion

In re-imagining the primary elements of a subsidised housing scheme, I have proposed that social facilities and public spaces can be provided strategically so as to improve the quality and accessibility of the resources and services they offer, at the same time as providing spaces and shelter for collective urban life. By providing the background to collective life, architecture provides the preconditions for rich urban qualities to emerge.

A number of principles have guided this approach. Firstly, facilities should be provided in clusters, to make them more conveniently accessible, to enable amenities to be shared, and to create a natural gathering place in the community. All facilities should be as multi-functional as possible, so that they can be used to their maximum potential. Facilities should be used to make positive public space, as well as a range of intermediate spaces that are open to any use. The urban structure - the relationship between buildings and space - should be legible enough that buildings can change and grow without compromising the overall sense of place. And finally, all spaces should be generous and flexible enough that they are open to multiple, overlapping and unpredictable uses, now and in the future.

This strategic approach is taken through into the framing and siting of an acupunctural insertion of primary elements and subsidised housing. The search for site considered specifically the release of residents from the poverty trap of spatial disadvantage, by allocating land that is well located in terms of access to jobs, pre-existing public facilities, commercial activity and an integrated transport system.

Finding and exposing existing site conditions led to an urban design for the overall site, which specifically took on board the idea of clusters of facilities that are highly accessible and which can be used by people from disparate neighbourhoods.

The urban design and the identification of the Wittebome cluster as an important node set in motion further investigations in terms of the programming of such a cluster of facilities. Out of this research came the idea of a cluster of facilities, anchored by a high school, but which also has the capacity to disseminate information around labour, housing, health and education issues, to support and train adult learners, and to provide support for new and existing businesses.

Finally, the making and design of public buildings is explored through three case studies of buildings that have generous public frontages. The main architectural themes are the relationship between form and space, the interface of the building with the public space, and the generous interstitial spaces that the building may offer to public use.

Ultimately, these themes are explored through drawings, diagrams and models of the Wittebome cluster of facilities itself, which allows ultimately for the crystallisation of the many different but overlapping investigations documented in the various chapters of this thesis.

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