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Figure 5.1 Montage of various precedents



5

Precedents & Testing

Guideline Testing vs Precedents
Lessons learnt from precedents

TAU village - Pretoria

Brickfields - Johannesburg

Joe Slovo Precinct (of N2 Gateway project) - Cape Town

Mieres Social Housing - Mieres, Spain

Public Reception Square - Grenoble, France

Duren Residential - Duren, Germany

Linked Hybrid - Beijing, China

31 Lower Terrace - Pretoria

Testing of developed guidelines against existing residential buildings already implemented locally and abroad. These projects provide important lessons on background, design and execution of social orientated housing projects

Table 5.2 Testing of guidelines against precedents

Testing of guidelines against precedents

Guidelines	Local Precedents			
	Tau Village	Brickfields	N2 Gateway	Dewar and Uitenbogaard
1. Located in a functional environment				
2. Medium to high density				
3. Balanced mixed-use environment				
4. Part of a long-term plan				
5. Address the immediate needs of locals/residents				
6. Facilitate the formation of communities				
7. Appropriate & responsive pedestrian scale				
total	3 - 43%	3 - 43%	3 - 43%	4 - 57%

International Precedents

Herman Hertzberger		Aldo van Eyck		Steven Holl					total
Duren Residential	Nieuwmarkt	Herbertus House	Nieuwmarkt	Linked Hybrid	Simmons Hall	Mieres	Grenoble		
									7 - 59%
									9 - 75%
									5 - 42%
									6 - 50%
									5 - 42%
									3 - 25%
									4 - 33%
3 - 43%	3 - 43%	3 - 43%	4 - 57%	4 - 57%	3 - 43%	3 - 43%	3 - 43%		

Lessons learnt from precedents

Tau Village

The Tau Village development demonstrates the possibilities of incorporating a number of different uses into a single development and the importance of implementing a hierarchy of access control measures that also cater for social facilities that require increased control. The location and density displayed by the development is due to existing factors but are nonetheless appropriate for the building's new programme.

Brickfields

The scale of Brickfields means that it has a significant impact on the housing stock for the area and indeed the city of Johannesburg. One of South Africa's first large-scale housing developments to combine opportunities for separate small business premises, as well as units with space to live upstairs and work downstairs and direct exposure to the street and the public. The courtyard typology was also used in this case, with the open space used for parking and children's play areas. A healthy variety of units and types has resulted in a viable mix of users and usages. Also, being part of a larger series of implementation, Brickfields was designed as the housing initiative for broader development.

N2 Gateway project

The immense scale of this Cape Town project has proven to be a stumbling block in achieving successful implementation and ongoing

maintenance of the project. Initially an exciting intervention, much of the original hype has died away as residents have become unhappy due to poor upkeep of the rental units and a lack of attention given to creating and maintaining public areas. This proves the importance of initiating and implementing a system of housing and living that can become sustainable. A valuable lesson to be learnt from this project is the importance of insightful planning of implementation system and how the development functions as a whole.

Mieres Social Housing

Much like Brickfields, the social housing development in Mieres in Spain by Zigzag architects forms part of a much larger development and framework. Mieres exhibits a history similar to Salvokop with its railway and industry background. The fresh application of the courtyard city block with a semi-public space shows the potential of design in a challenging environment. The connection to the site and the manner in which naturally existing informants were used to encourage the design show the possibilities of simply calculate decisions.

Project for a public reception square

The public reception Square illustrates the potential for a public space which is supported by surrounding buildings and landscaping. Mixed use on ground floor with offices or housing above, along with

its location in the middle of the city, close to transport links, provides a platform for a vibrant public environment which also acts as an important information node for new visitors to the city.

Grenoble

The Grenoble Housing block located in a growing city at the foot of the French Alps is part of a larger urban development plan. Environmentally sustainable solutions have been applied, including an innovative system for the façade, but it is the influence as a part of a broader development that makes it so successful. This housing project demonstrates the value of a simple solution as a portion of a larger-scale endeavour.

Duren Residential

Unlike the Grenoble example, Herman Hertzberger's Duren Residential block in Germany does not fit into its environment seamlessly. Instead, an island of housing has been created in a neglected suburb of old houses. With a strong physical connection to its surroundings suburbs by means of pedestrian and vehicular access routes, the project adequately demonstrates the balance between providing for residents and the neighbouring community. A large public green space bisected by an access road and surrounded by double storey-walk-ups ensure a safe environment for inhabitants and the general public to interact in a pleasant outdoor space.

Linked Hybrid

Steven Holl's renowned Linked Hybrid in Beijing challenges the traditional standards of volume for inner city buildings. Breaking the mould for conventional housing blocks the opportunity has been used to create a cluster of eight tower blocks of different heights, linked at different levels. Public functions inhabit the more easily accessed levels whilst over 600 living units complete the complex. The unique pedestrian bridges over seventeen stories above ground level create a unusual interaction for residents and visitors and create niches of activity despite the immense scale of the project

31 Lower Terrace

House 31 in Lower Terrace St, Pretoria provides an example of how a steel structure can be appropriately implemented for residential purposes. Due to the roof being largely a separate component of the structure, it can be simply removed to accommodate the installation of additional stories should the need arise. The corrugated sheeting skin, including face-brick and plastered surfaces, results in a variety of façade that creates a pleasant aesthetic. The large surfaces of glazing are appropriately orientated and afford the building interior a healthy dose of light.

An adaptive re-use project incorporating a variety of uses and functions. The architects of this recently completed (Sept 2010) project were faced with a variety of challenges when converting the abandoned offices of the Transvaal Agricultural Union (TAU) to a mixed-use housing development: first of all, the issue of re-using an existing building and converting its function has specific challenges, and secondly the incorporation of various uses into a single structure.

Re-use

The building's existing blocks A and B were converted and upgraded into housing units, with retail spaces on the ground floor facing the street, whilst a new block (C) was built at the back of the site and accommodates Lerato House, an old age home, a crèche and additional housing units.

Due to the poor condition of the interior, caused by the illegal occupation of the building prior to renovation, a replacement of finishes was desperately required. Selected fittings and refurbishments are simple and heavy-duty, which offer the interior spaces an elementary feel. Combined with the red, blue and yellow paintwork to highlight important structural or circulatory elements (columns, balustrades and central passages) an uncomplicated language is articulated throughout the structure inside and out. Re-appropriation of the



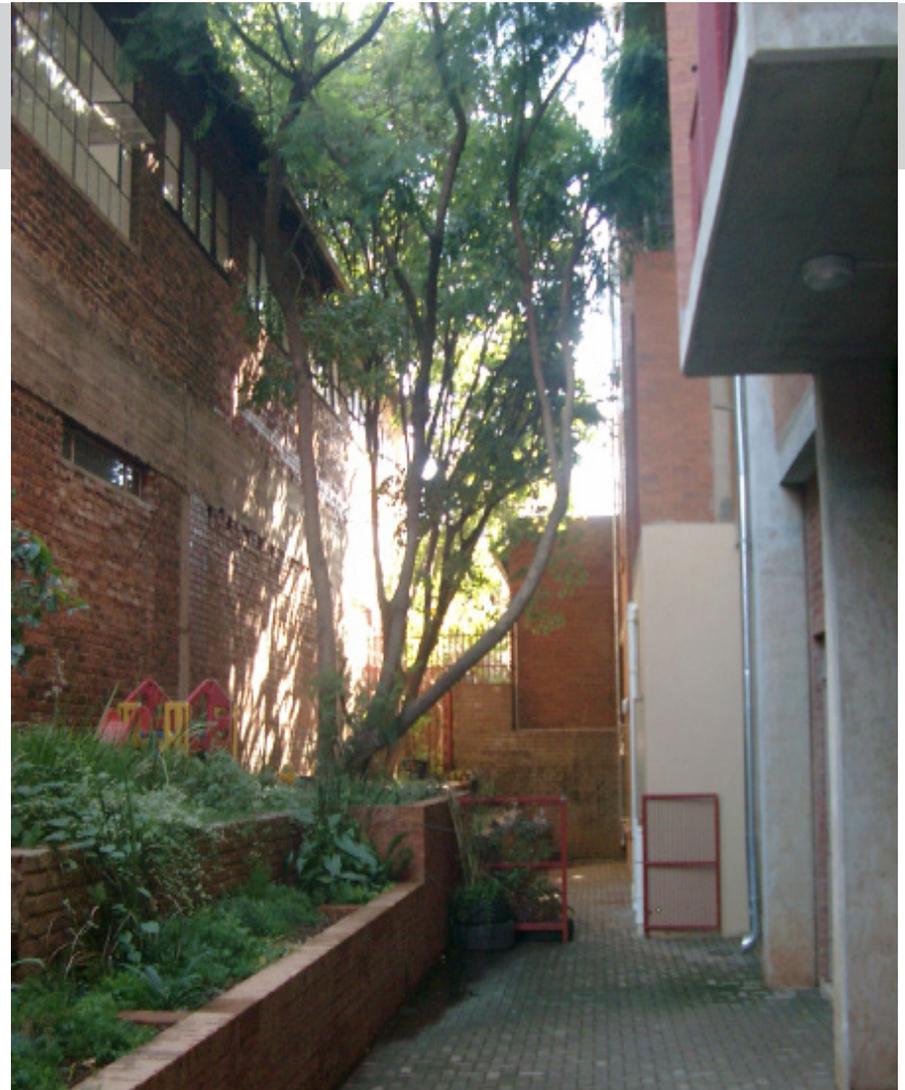
Illustration 5.3: The inconspicuous facade of the TAU building with shops opening up onto the street

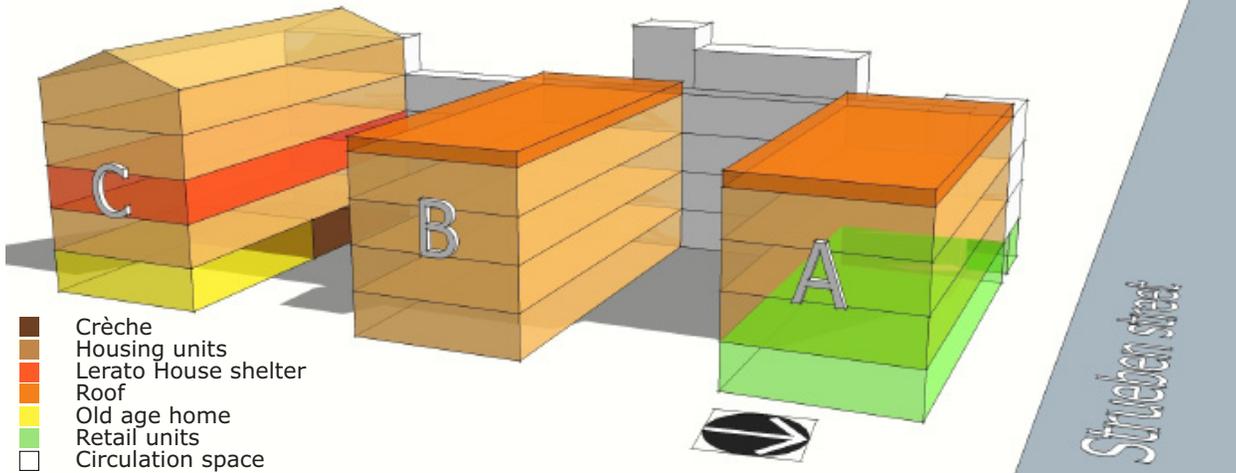
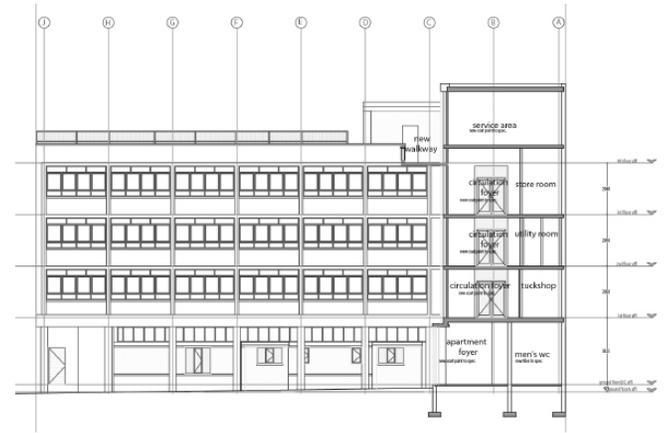
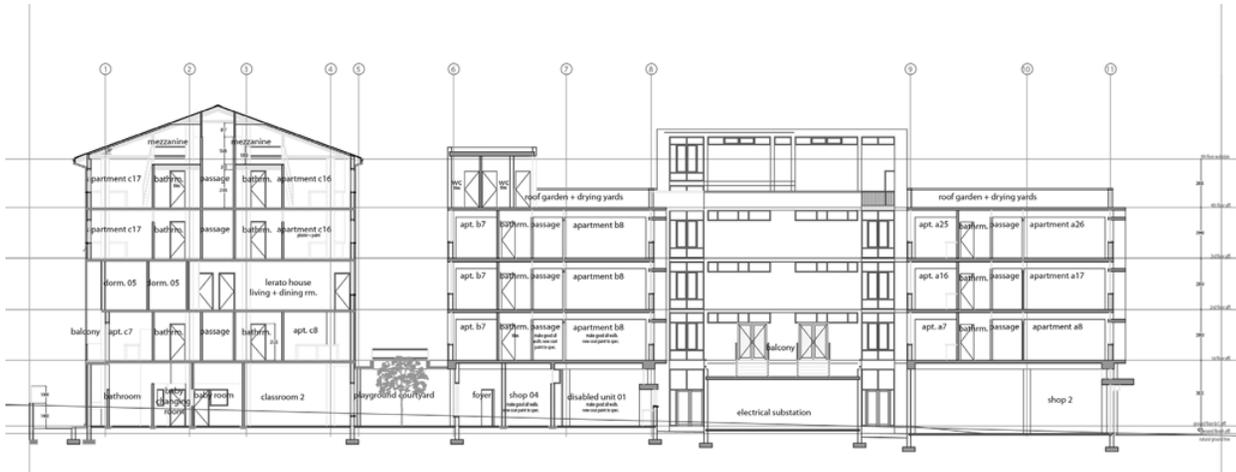
Opposite page:
Illustration 5.4: The quiet green space at the back of the lot provides a peaceful breathing space in the busy city

existing office space proved more of a challenge than originally anticipated when the structure was deemed unsuitable for any extension. This meant that the flat roof was not able to support additional floors or a roof garden unless costly structural upgrades were undertaken. The change in use required a relocation of the central wet services areas required in each of the units. Bathrooms were placed on the inner, passage-way side of the unit to maximise natural lighting into the unit. Unfortunately a similarly healthy dose of light and air could not be afforded to the dark corridors throughout the development due to fire regulations restricting the use of the existing fanlights.

Mixed-use

The development accommodates a healthy variety of uses with retail spaces for small businesses, accommodation for families, couples, working individuals, the elderly and disenfranchised young women, and provides accommodation for pre-schoolers with working mothers. The access to these various uses is controlled primarily through an existing circulation axis located on the west side of the building which was extended into the new C block, whilst the existing vertical circulation shaft between Blocks A and B was retained and easily serves all three blocks. Ease of movement through the ground





floor spaces is required due to the high traffic caused by the need to drop-off and pick-up users of the crèche and old age home facilities. Any additional space on the ground floor was utilized to create small gardens which included the use of old tyres as containers for small plants.

Due to restrictions of time and money the developers' intentions to install components such as solar-water heaters and flower-boxes on the façade could not be realised, and their absence is notable. The simplefunctional language is however successfully sustained throughout, providing a platform for future additions.

The housing units are small but still appropriate, and whilst the majority of the residents prefer the newly built C block which overlooks

the surprisingly tranquil green space at the back of the lot, it is neither the freshness of the new building nor the green space which attracts them, but instead the comparatively quiet, tucked-away environment which it offers so effectively. However where some residents enjoy the peacefulness of block C, others have the easily accessible flat roof directly above which offers stunning night views and on occasion the distant roar of the lion from the Pretoria Zoological Garden.

Conclusion

Although the approach to the construction of the new TAU building does anything but draw attention to itself, as a whole the building provides a uniquely responsive living environment, one shaped by modest green spaces, open gathering areas and living units, all set out in a fashion appropriate to high density city living. The success of this project is confirmed by the extensive waiting-lists for occupation.

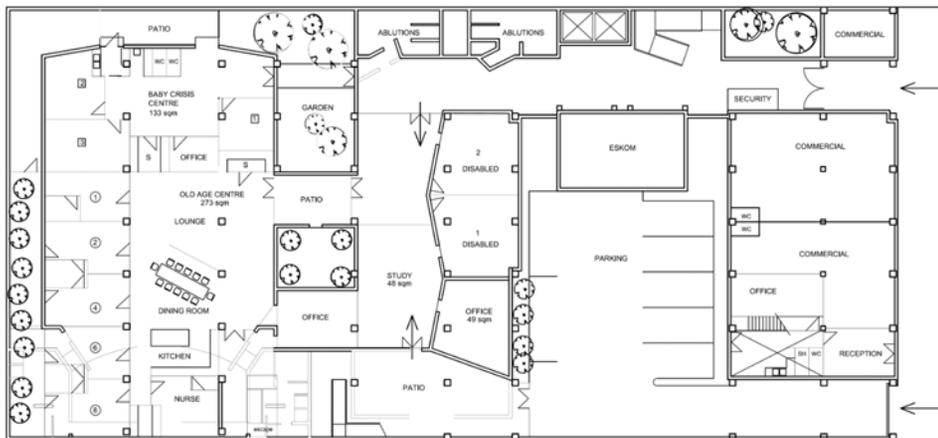


Figure 5.9: Ground floor layout showing commercial spaces, offices, the crèche, old age home and circulation spaces

Opposite page (Clockwise from top right):

Figure 5.5: North elevation of the centre block (B)

Illustration: Computer render showing unit interior

Figure 5.7: Figure showing use allocation

Figure 5.8: North-South Section



Location



Density



Mixed-use



Long-term plan



Immediate needs



Community



Pedestrian

Brickfields - Johannesburg

Savage & Dodd Architects cc, Fee & Chalis Architecture
& Makhene Architect and Associates

Brickfields is part of a larger redevelopment project in the area of Newtown, Johannesburg. Along with two other precincts (C & A/B) Brickfields provides the previously absent residential component to this area which is experiencing much needed upliftment, whilst the Nelson Mandela Bridge and the Metro Mall transport Interchange provide the infrastructure to support the overall regeneration initiative.

Two and three bedroom units are arranged in four storey walk-ups with considerable street frontage around a large courtyard which includes parking and children's play areas. Two tower blocks (nine and ten stories high) located at opposite corners of the precinct provide a high-density living environment and an increased number of residential units. Live-work units are located on edges of the redevelopment facing Ntemi Piliso and Gwigwi Mrwebi Streets, which are important pedestrian routes and provide opportunity for small businesses selling groceries and snacks, or offering personal services such as dry cleaning and laundry services, hairdressing and similar.

Social facilities, including a crèche and a home economics centre, are also incorporated into the development to promote the mixed-use nature of the project.

Simple materials are used throughout with a basic aesthetic created through the utilisation of exposed brick, interspersed with brightly painted plaster finishes which also create visual variety.





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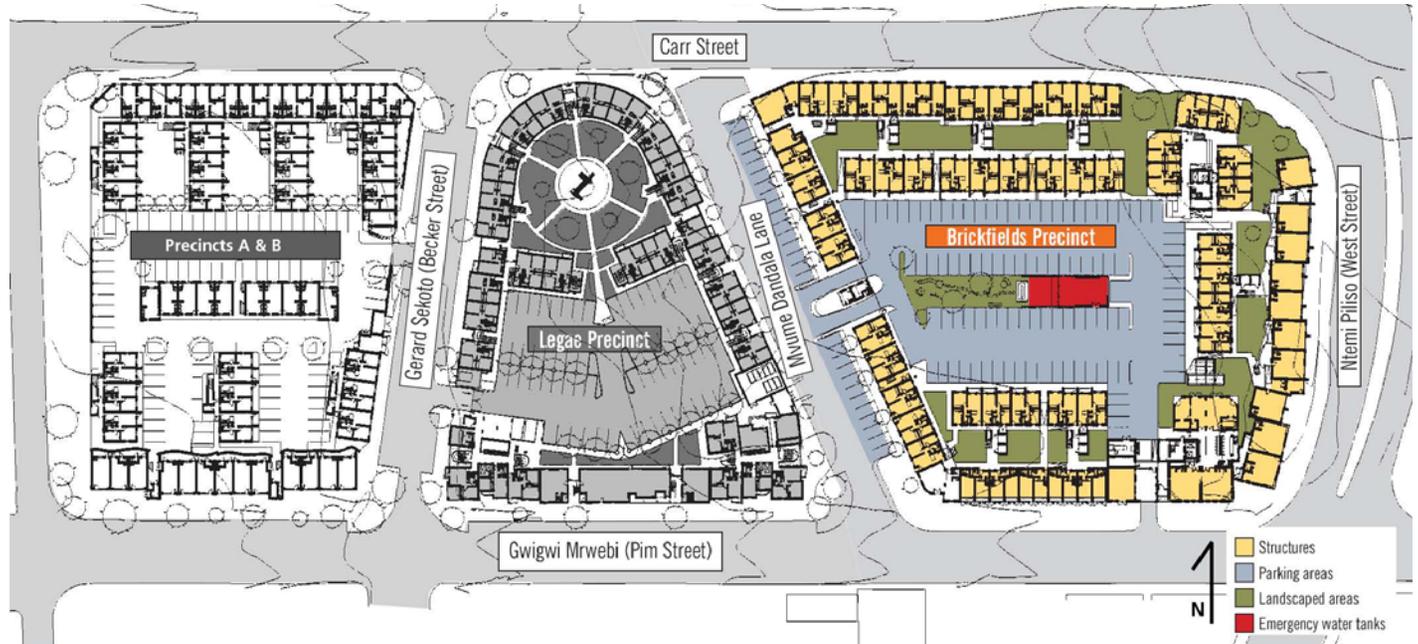
Illustration 5.11: Interface of the shop component of the live-work units with the street

Figure 5.12: Plan of the entire development with the Brickfields precinct in colour

Illustration 5.13 Deserted courtyard spaces inbetween housing blocks originally planned for landscaping

Opposite page:

Illustration 5.10: View of the central courtyard space with parking and childrens' play area, with the nine-storey tower block in the background



Joe Slovo precinct - Cape Town

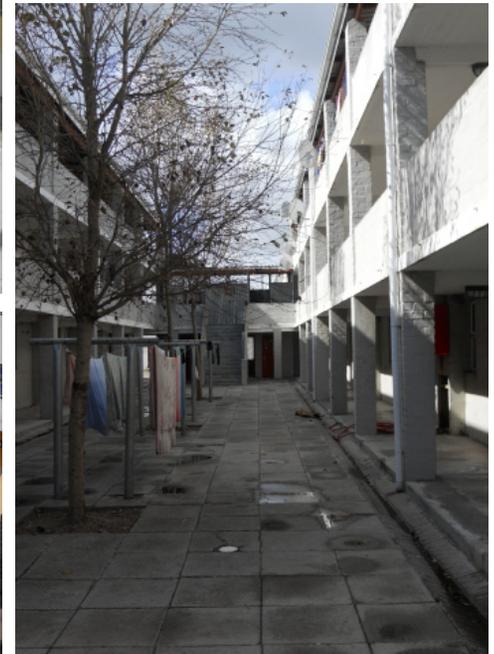
JSA Architects and Urban Designers

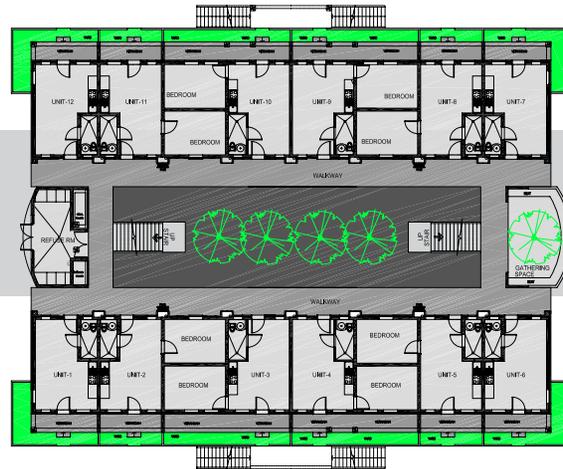
The Joe Slovo precinct was completed in June of 2006 in Langa, Cape Town along the N2 highway and forms part of the larger development known as the N2 Gateway project. The site was chosen because of its proximity to the Joe Slovo Township which allowed the opportunity for an upgrading of existing infrastructure as opposed to the more costly establishment of new infrastructure.

The housing consists primarily of bachelor, and one and two bedroom units arranged in medium density three storey walk-ups. This higher density design capitalised on the opportunity offered by the strategically located land with its ease of access to existing facilities and impressive views of Table Mountain. The units face onto internal courtyards which create a space for social interaction and the hanging of laundry.

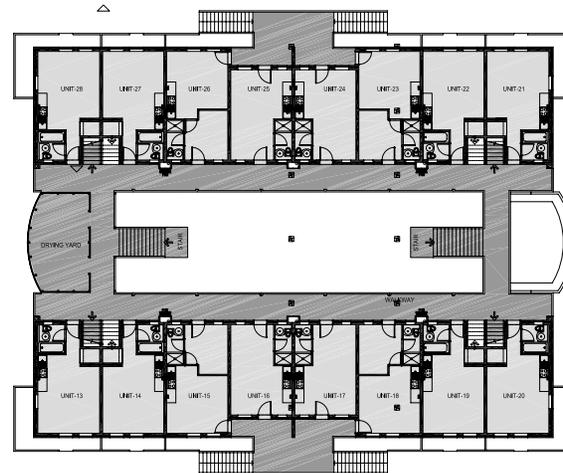
Due to the expansive nature of the development a number of these courtyard blocks were linked with narrow streets creating a network of linked public gathering spaces throughout the development. The extensive scale of the development also informed the design on a smaller scale with robust materials and simple details repeated throughout.

Although largely mono-functional the development does also allow for the operation of small businesses and social facilities such as a crèche and a trading area.

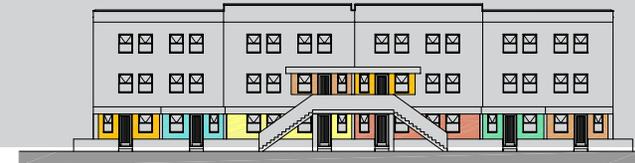




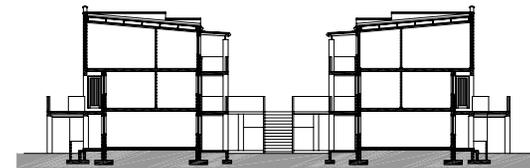
Typical ground floor plan



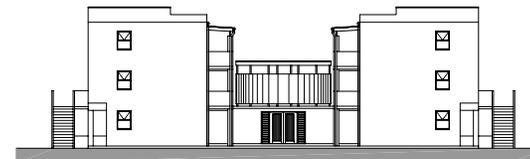
Typical first floor plan



Typical front section



Typical section



Typical side elevation

Opposite page (Clockwise from top-right):

Illustration 5.14: Units have a combination of access from inside and outside the courtyard.

Illustration 5.15: Courtyards are generally darker and used primarily used as clothing hanging space

Illustration 5.16: The extensive installation of satellite dishes indicates the more middle class (as opposed to lower-class) parts of the development
Illustration 5.17: Narrow roads between blocks allow for the circulation of vehicles but miss the opportunity to provide pleasant landscaped strips.

Figure 5.18: drawings showing typical blocks of the three-storey walk-ups

Mieres Social Housing - Spain

Zigzag Arquitectura

Mieres is a small town in the North of Spain with a fading legacy of mining and heavy industry. Situated just to the south of the centre of town is a vacant area awaiting interventions that will result in redevelopment. The proposal for social housing by Zigzag architects was approved for implementation because of its appropriate use of materials and its arrangement of varying sized apartments.

The scheme is based on a conventional courtyard block which is adapted to maximise views of the surrounding mountains and solar gains - which was in accordance of the intention of the architects: that the building would be connected to the site.

The implementation of contrasting façade materials informed users of the distinction between public and private realms. An African hardwood was chosen for the areas facing the courtyard to symbolise a return to nature and the courtyard itself is planted with native grasses and bamboo to create a “secret garden” effect in the form of a semi-public area, a breathing space in the harshness of the surrounding urban environment.

An overwhelming aspect of the scheme has been its capacity to transform a neglected precinct through the application of appropriate architecture. (Slessor: 2011, 54-61)



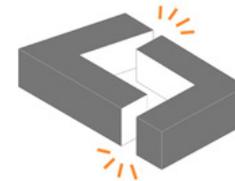
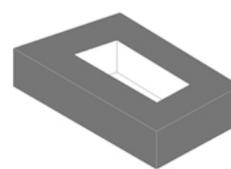
Illustration 5.19 A view of the entrance from the street

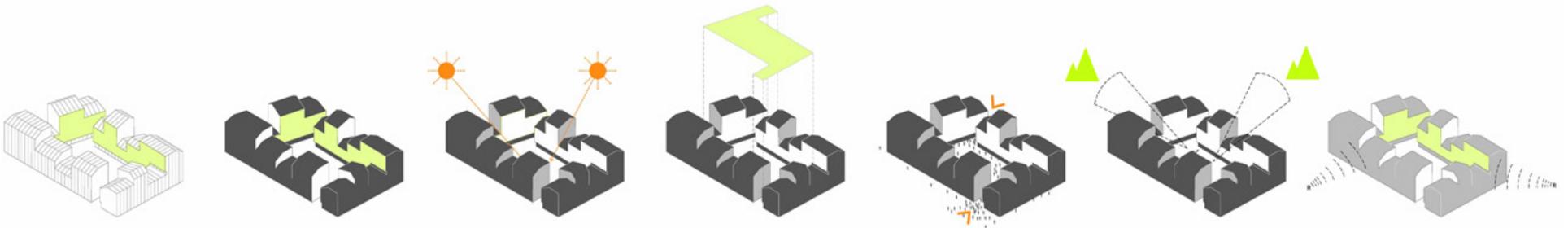
Figure 5.20: A progression of the building form due to various contributing factors

Opposite page:

Illustration 5.21 The paved and landscaped courtyard at the heart of the block

Figure 5.22: Ground floor plan (1. street entrance, 2. courtyard, 3. shops, 4. staircase, 5. apartments)





Project for a public Reception Square

Uitenborgaardt and Dewar

One of the proposals included in *South African Cities: A Manifesto for change* (Dewar and Uitenborgaardt, 1991: 108) was a Reception Square for a South African city. The purpose of the space is to allow for a welcoming public square located close to an important transport terminal. The space receives visitors and guides them towards a place of information. This model is especially relevant in South Africa due to the high number of rural dwellers who are occasional city users. They travel long distances from their rural homes to receive health care, apply for identity documents or to buy items that are not available in their rural centres.

The reception square promotes the establishment of an economic strip giving users immediate access to the relevant shops and services. The arrangement of the surrounding buildings supports the form and function of the square. Multi-storey buildings of moderate density ensure the development is not out of context in the city, whilst landscaping softens the hard edges of the urban landscape.

The reception square proposal provides an important public space for visitors and locals to access a variety of goods and services as well as an opportunity to interact with one another in an open public environment.

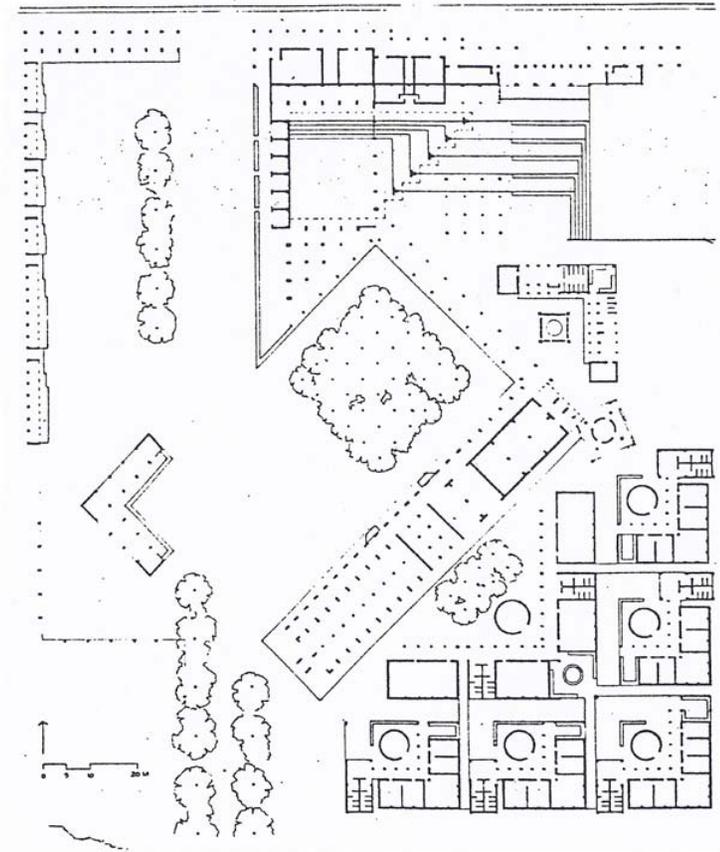


Figure 5.23 Plan of public reception space project



Location



Density



Mixed-use



Long-term plan



Immediate needs



Community



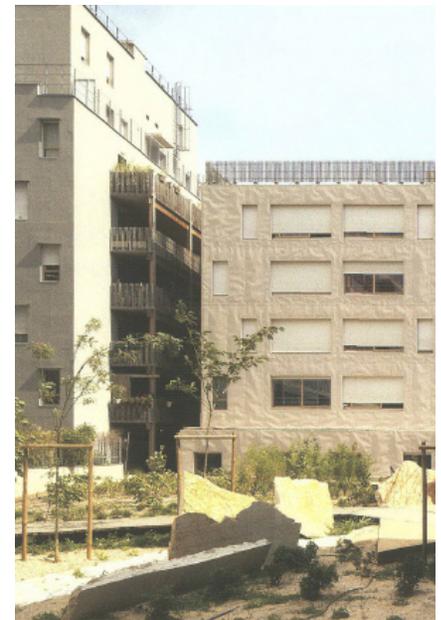
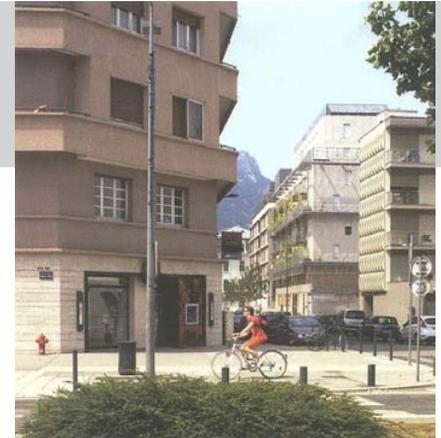
Pedestrian

Grenoble

Eduard Francois

Located in a growing metropolis at the foot of the French Alps the social housing development in Grenoble is an experiment within a greater exploration. Forming part of the zone d' management (ZAC), a well-known urban redevelopment plan, Francois's housing blocks is one of many players in this so-called "eco quarter". Along with a host of other architects and urban planners the entire precinct is being redeveloped, with the intention of having a greater positive impact on social systems whilst conversely having a lighter impact on environmental ones (Slessor: 2010, 72-74).

Innovation on the façades through use of new materials that change over time due to weathering and vegetation growth are only mildly significant in comparison to the larger impact the building has as part of a broader and therefore more substantial development.



Clockwise from left

Figure 5.24 Facade detail which over time will become animated by flourishing greenery

Figure 5.25: Grenoble context, housing block on the right of the street with the Alps in the background

Figure 5.26: Private housing block overlooking the courtyard at the centre of the development

Duren Residential

Herman Hertzberger

When viewed in context, it is clear that the residential complex at Duren is not simply “business as usual”. Located in and amongst many run-down welfare houses the housing development by Herman Hertzberger sets an appropriate precedent for what could be. A perimeter block with double storey walk-ups and an access road bisecting the central courtyard allows for a balance between communal interaction and privacy.

The scale of the open space has become an opportunity, and has been adopted by locals from the entire suburb as a town square and meeting place. The development of this open space was not subjected to a sacrifice of socio-spatial quality, but instead it still fulfils the needs of the residents through the implementation of small-scale elements like balconies and galleries (Raith & van Gool, 1998: 18-28).

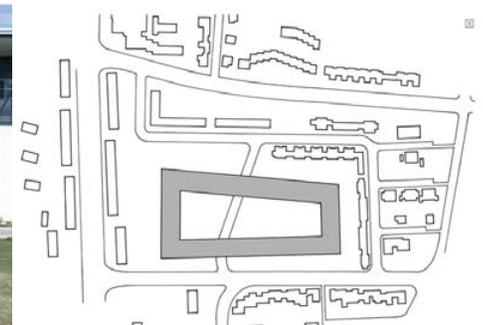
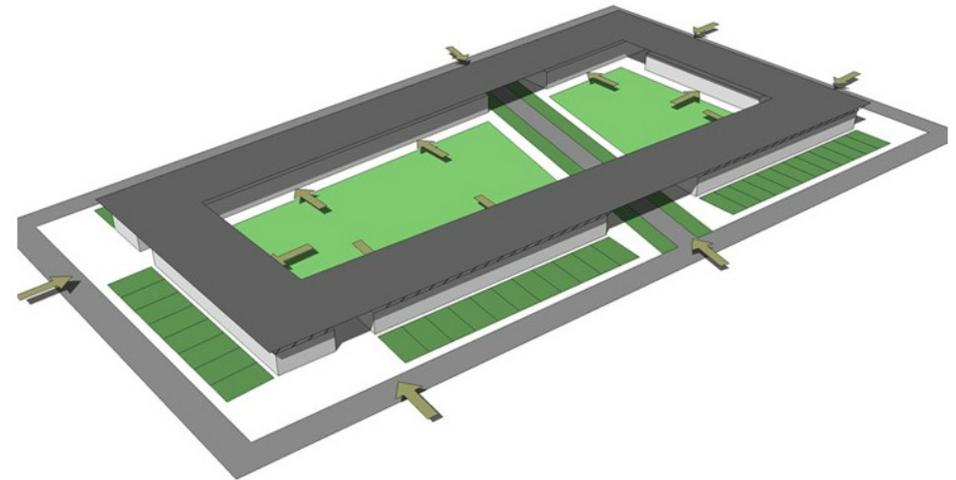
Viewed as whole, set within a slightly dysfunctional suburb, the residential complex at Duren strikes a balance between the immediate needs of its residents as well as those of the broader community.

Clockwise from top

Figure 5.27: Image showing the movement through the block and spill over from the housing into the green courtyard

Figure 5.28: Plan showing the location of the residential development

Illustration 5.29: View of housing units surrounding a green courtyard



Linked Hybrid

Steven Holl

Located in the densely populated metropolis of Beijing, Linked Hybrid challenges the notions of horizontality and verticality that so often dominate the urban skyline under the hybrid typology banner. Eight towers of varying height are joined at the base by a ring of structures used to fulfil public functions. This linkage is repeated at the unusual height of about seventeen stories above the ground. This elevated ring of activity spaces provides a platform for the inclusion of more public leisure facilities such as a gym, library, exhibition space, cafeterias and a jazz night club closer to the potential users. (Domus, 2004)

The massive scale of this residential project successfully integrates public space with private living. The emphasis on combining mixed-use and pedestrian-friendly systems is specifically relevant to the high density context in which the building rests, where the private car is not a significant factor. The landscape and the building interact on a three dimensional level, and maintains the privacy of use for residents in certain areas.

The inclusion of a geothermal heating and cooling system makes the Linked Hybrid one of the largest “green” residential projects in the world and ensures the interior remains comfortable throughout the year.



Clockwise from top left
 Illustration 5.30: View of three of the towers and the linking bridges
 Illustration 5.31: View of the first four floors demonstrating the public use on ground floor and residential units above.
 Figure 5.32: Diagram showing the relationship created between horizontal and vertical planes by using the linking bridges

Technical precedent

31 Lower Terrace - Pretoria

Thomas Gouws Architects

The Residence at 31 Lower Terrace Road is a 4 bedroom home with connected studio and quadruple garage and is located in the residential suburb of Menlo Park, Pretoria. The structural frame consists of a steel skeleton with brick infill. A combination of plastered and un-plastered brickwork, together with corrugated sheeting and large panels of glazing forms the skin of the building. The corrugated iron roof is attached to steel rafters which are supported by the structural columns at two places at each of the eaves.

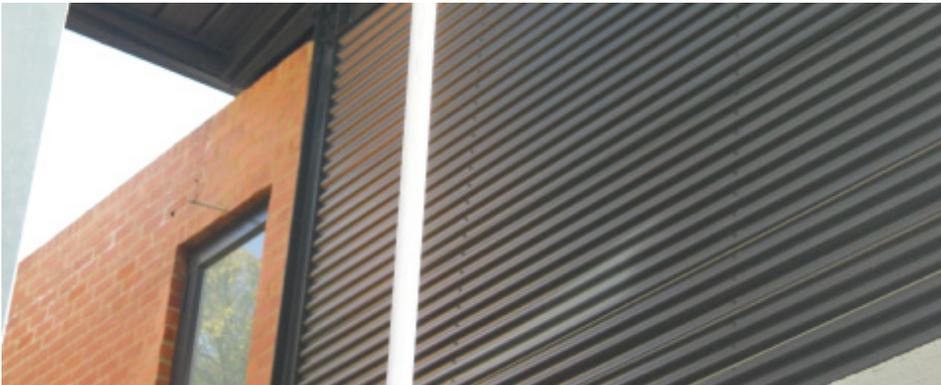
The combination of exposed brickwork and glass and steel on the façade creates a surprisingly home-like aesthetic with large north facing windows allowing light to penetrate deep into the building.



Figure 5.33: View of the street elevation

Figure 5.34: Exploded perspective showing roof assembly





Clockwise from top right
Figure 5.35: View of the various skin construction materials
Figure 5.36: View of the balcony from the street showing the roof structure
Figure 5.37: View during construction showing the structural frame and infill