

Heritage
The housing units on the competition site bear the pedigree of post-war British experiments in 'Swedish-style' humanist public housing. They, and the exceptional nearby housing of Sydney Ancher, have formed the stimulus for our approach to the problem of addressing the challenge of a much greater population density for inner Canberra. With regard to the heritage value of the existing housing blocks, the Brief notes the current heritage process being undertaken. The Bradaton and Turner sites have in our scheme been subdivided into plots: Turner site three lots, and Bradaton site two lots. Thus, development can occur in stages, and some of the existing units can be retained if required.

Urban Strategy
Northbourne Avenue possesses symbolic importance and visual impact as the entrance into Canberra from both Sydney and Melbourne: it deserves to be developed as a gateway into the capital city. Its significance is further emphasized by the historic landscape design of the avenue and the intersecting Haig Park. Our scheme enables the sites to interact with the street, encouraging pedestrian activity and transport accessibility by bus stops and side roads. A pedestrian crossing is provided between the two sites, connecting with community facilities and forming a real community hub. While celebrating the civic importance of Northbourne Avenue, our scheme avoids the ponderous seriousness of much 'official' design. Rather than synchronization and repetition, we advocate a diversity within a regular rhythm. Chubby Checker dancing the Twist rather than synchronized dancing! More seriously, we advocate the development of an urban structure that allows for diversity and local event, while constructing a larger-scale rhythm appropriate to an urban context. The buildings infect to give variety. But at a closer scale, the complex works like a traditional urban quarter: the taller slab housing is sheathed by 'mews' housing, and three-storey walk-ups, which could also be developed as town-houses, mediate between the large scale of the group housing and the small close grain of the existing detached houses. The wedge-shaped courtyards permit local events, such as a health club, or a child-care centre, on the 'quiet' sides, and public, sun-catching courtyards that open up opportunities for urban gardens, a good cafe, and convenience shops.

Housing and Parking Provision

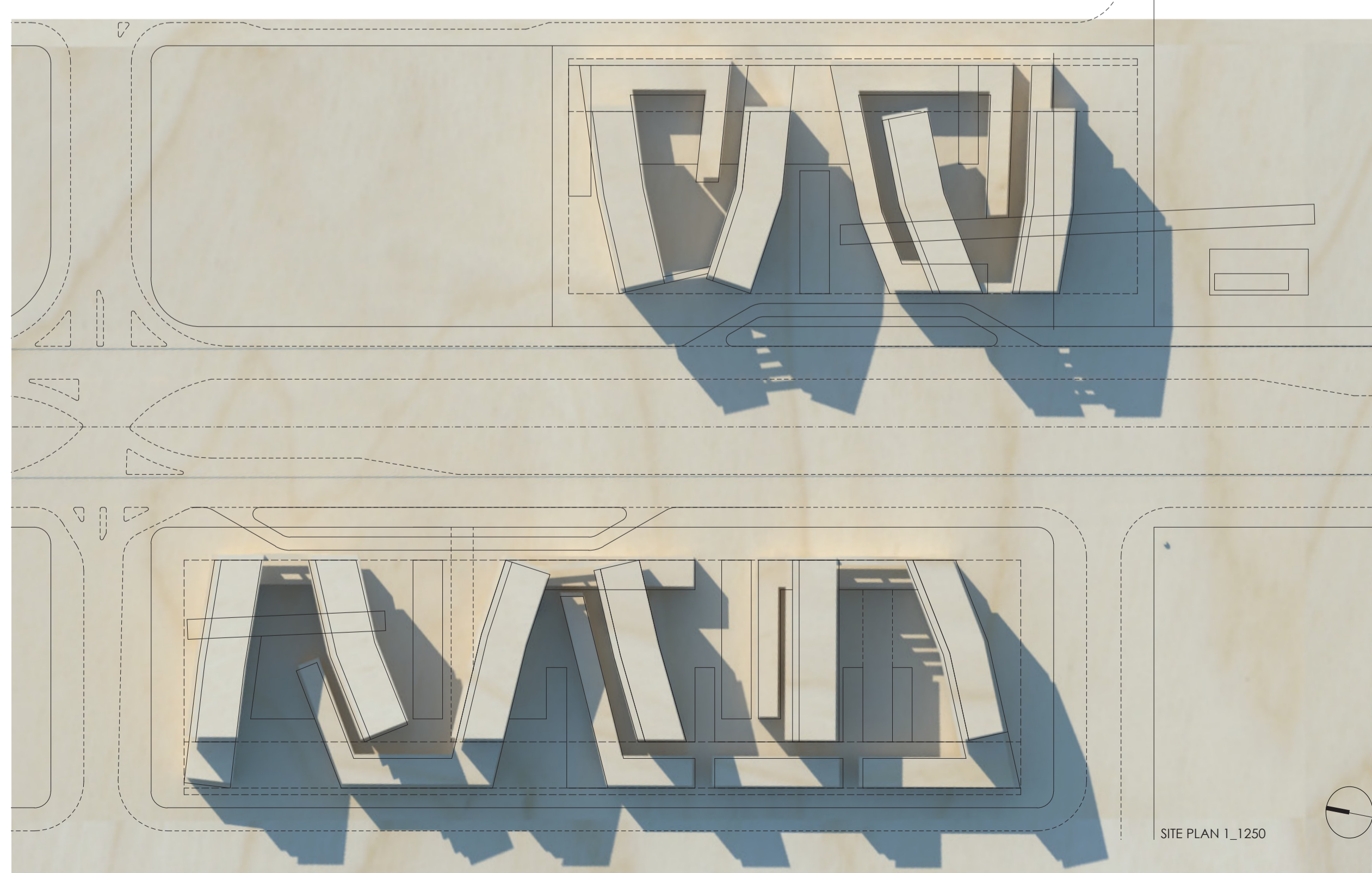
1 Bed: 410 (50%)	58-65m2
1 Bed + Study: 101 (12.3%)	67-72m2
2 Bed: 298 (36.3%)	83-88m2
3 Bed: 11 (1.4%)	110-120m2
Total: 820 apartments	
Car spaces: 1527	
Bike bays: 1030	

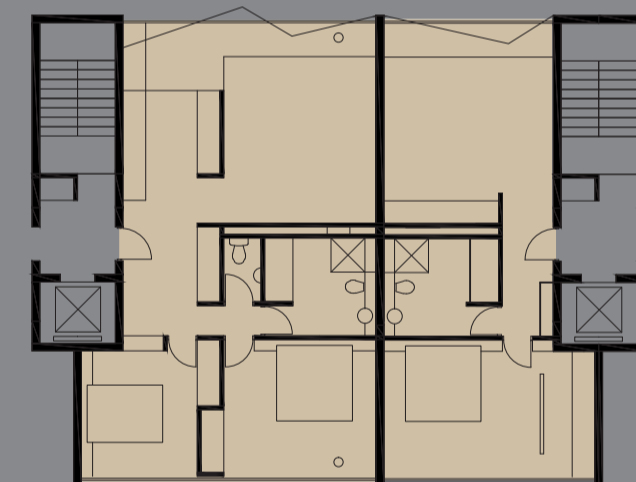
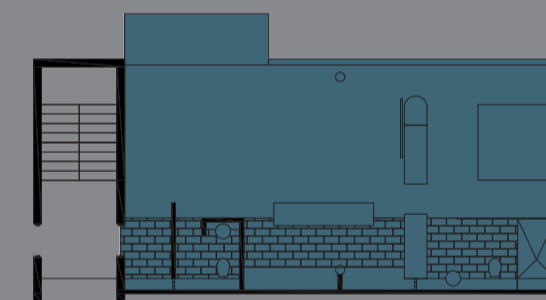
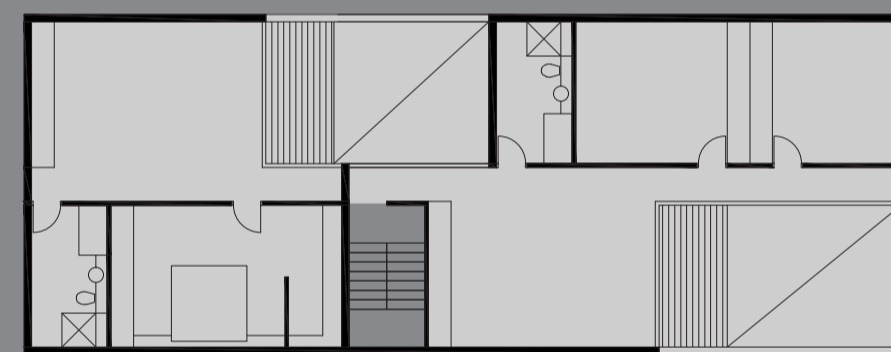
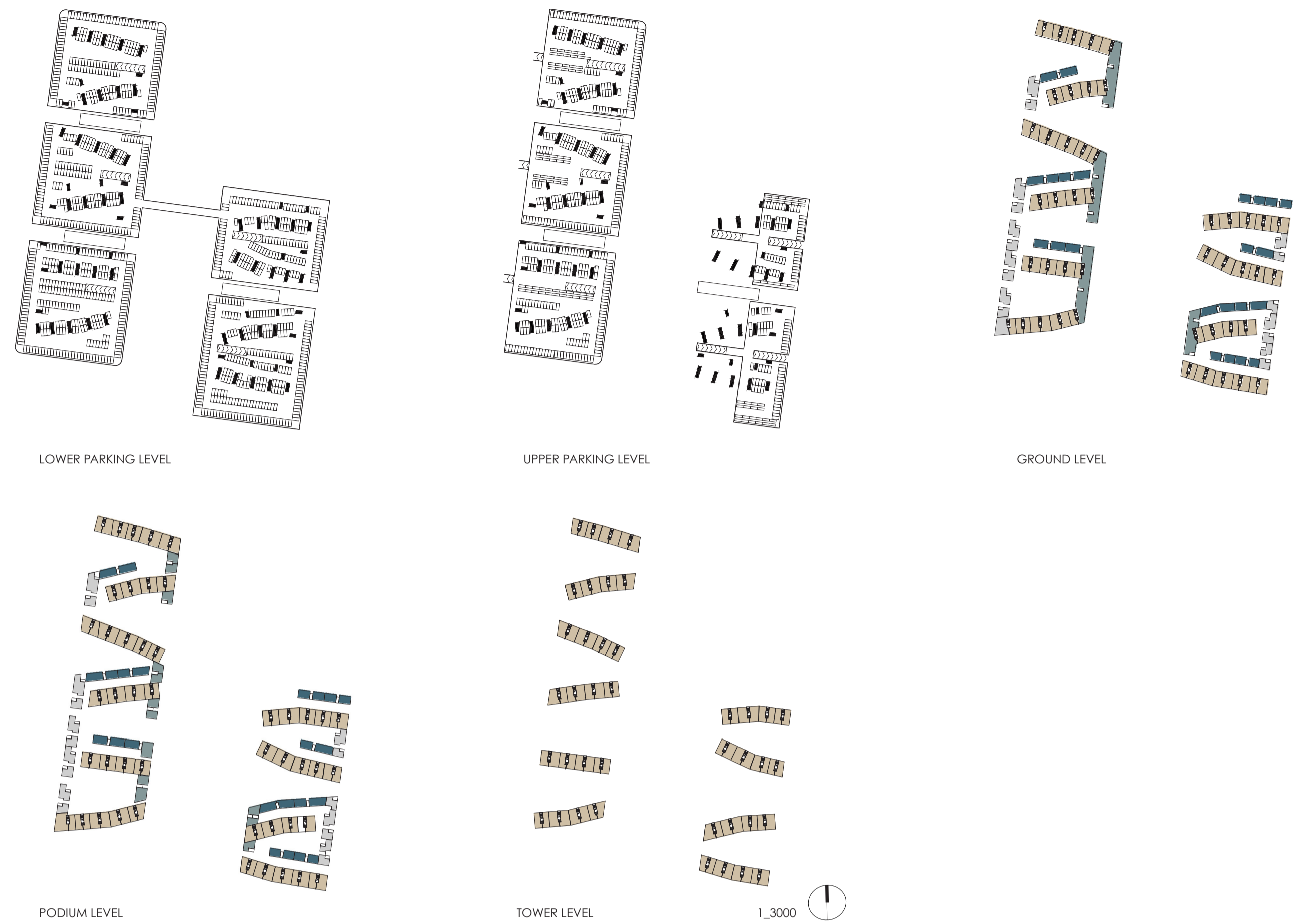
We note that the site density of the sites can be increased to meet the Briefs objective to provide somewhere between 900 and 1000 units, however the amenity for the residents is equally important, and the buildings are designed not only to provide a dense urban environment, but also an enjoyable residential and community space which will provide a model and benchmark for future similar developments. Thus, over 95% of our units direct northern exposure.

Tower
The 10 eight-storey buildings comprise eight apartments on each level. The apartments are served by their own lift and stairs. Social housing project in cities such as Madrid, for example, have been developed along similar lines. Each apartment has aspects to the north (from the living areas) and the south (from the bedrooms), with through-ventilation. Sunlight and air is maximized to each building, and the outlook from each apartment is oblique to the building in front or behind, with views out of the site. The roof of the tower is a terrace offering a public viewing platform. The floating cantilevered roof above the terrace provides the structure for photovoltaic cells and solar hot water.

Podium
The three storey podium buildings front the rear residential streets, and fold in to the site to create courtyards and pedestrian streets. The roofs of the three storey buildings contain extensive community gardens that will provide an attractive view from the higher apartments will be particularly attractive for the residents. The depth of soil is proposed to vary between 450mm and 900mm. In addition to the lower apartments continuing down through the podium, there are different apartment types proposed in the lower levels of the buildings to offer variety to potential residents.

Ground
The proposed facilities are: on-site sustainability manager, perhaps combined with janitor, Swimming pool, Auditorium, Bicycle discount shop / repairs and maintenance, Cafes etc. combined with bus stops, Outdoor dining facilities, Wellness Centre, Measured walks (2km, for example), ATM, gyms, pools, supermarket, childcare, health care professional, organic food, bike facilities, compost etc, public transport.





APARTMENT TYPOLOGIES 1_200

SUSTAINABLE HOUSING

Energy Rating
We propose that it is possible to develop this scheme as an industry-leading seven star-rated complex, through our choices of construction materials, solar exposure, and programmatic mix. [See green star report on DVD.]

Solar design
The Brief notes the requirement that 70% of proposed apartments receive sunlight to part of their Living Rooms on the winter equinox, 21 June. Please see the computer animation, included on our CD, showing the resultant shadows on the new development, run for Canberra on 21 June. This animation shows that the sunlight can penetrate into almost every new apartment on that day. This has been achieved by modifying the building massing to minimise overshadowing. The roofs of the taller buildings are equipped with solar array, providing electricity and hot water to the complex.

Wind and Ventilation
The strongest and most frequent winds in the Canberra region come from the west to north-west wind directions with secondary winds from the east-south-east to south. The remaining wind directions are relative light and infrequent. Our urban layout has been designed to provide shelter to the complex in the majority of weather conditions. All units have controllable trickle through ventilation through above-window closable vents.

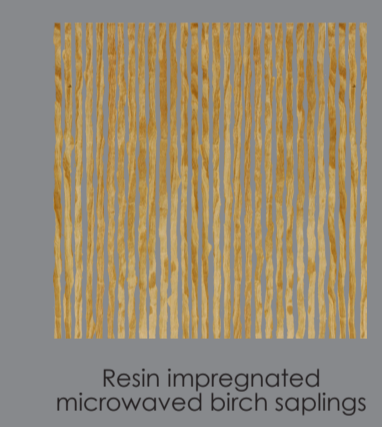
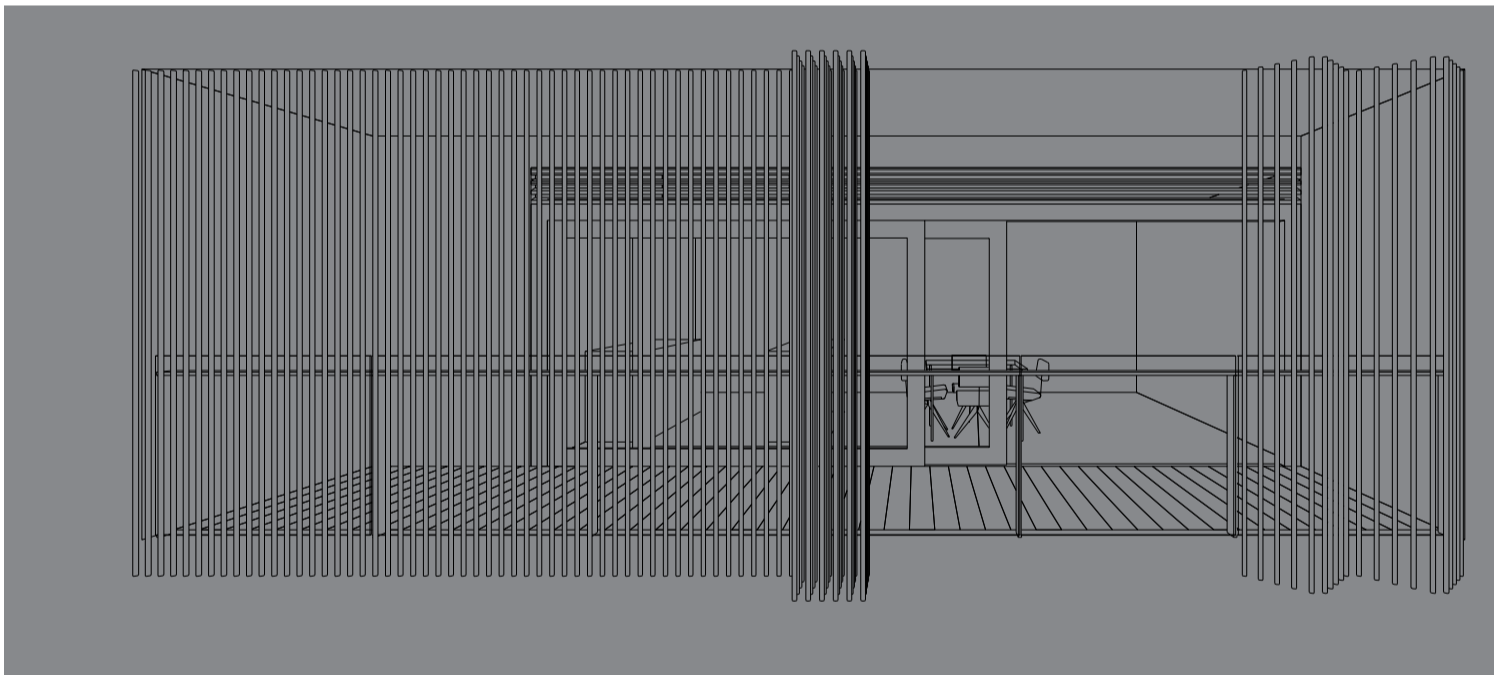
Water Use
Between each of the developable plots, natural ground has been set aside as a reserve. This will be equipped with a subterranean reservoir for grey water storage from the buildings' run-off that will be employed for landscape irrigation on-site.

Groves of Displaced Trees
The Landscape Site Inspection Report notes that, due to the historical architectural value of the currently situated Northbourne Flats multi-unit buildings, the surrounding tree plantings could potentially be of significant cultural, visual, ecological or botanical value. We therefore propose to provide a series of Groves of Displaced Trees within the site boundaries. Existing and new trees are incorporated into strip planting separating each of the developable plots. They will provide shade and visual screening to apartment dwellers.

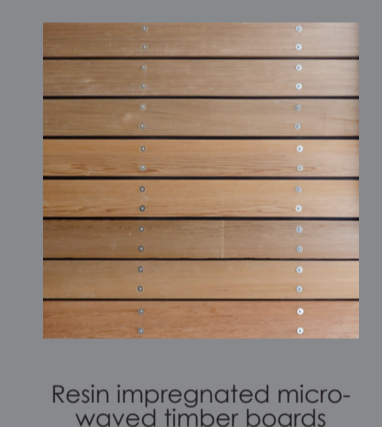
Public Art
Marion Mahony and Walter Burley Griffin introduce our project in Haig Park - their over life-size statues facing each other across Northbourne Avenue, to celebrate the centenary of their plan for Canberra. It is intended that they, too, will be made of recycled materials.



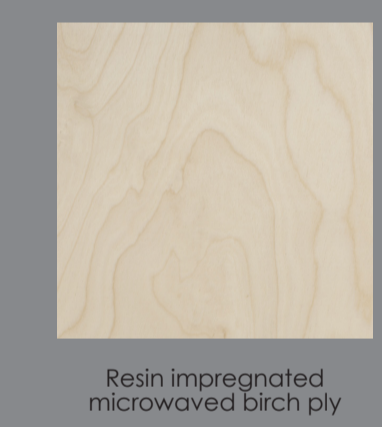
SECTION 1_200



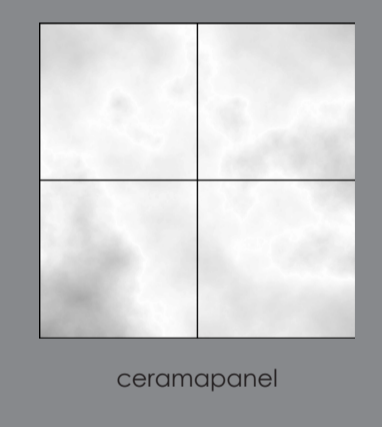
Resin impregnated microwaved birch saplings



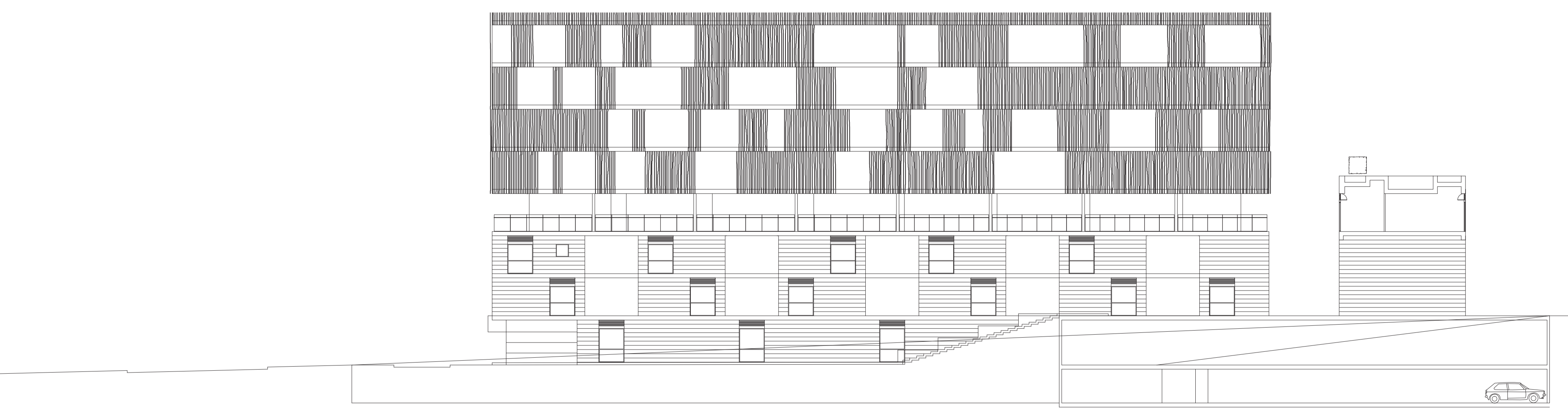
Resin impregnated microwaved timber boards



Resin impregnated microwaved birch ply



ceramapanel



ELEVATION 1_200

MATERIALS: Engineered timber

Our complex has been designed to market-leading energy conservation standards. We have followed the recent innovations in green technology developed in Sweden, in proposing housing that is almost entirely constructed in timber – both structure and cladding. Multi-storey timber construction has been recently employed for the Stadthaus, a nine-storey timber apartment building, employing cross-laminated cellular timber construction. Much taller structures are currently being designed. Mirvac have recently undertaken studies for a ten-storey timber-construction residential tower in Melbourne. The advantage in these approaches is a much smaller energy footprint for the buildings, and high embodied energy for the complex. Such an approach is employed in this design.

We are further building upon recent research on engineered timber, in proposing cladding systems that are based upon microwave technology, involving the microwave extraction of moisture without cracking, and the pressure-injection of resin preservatives, that ensure that cladding systems will have a long-term low maintenance regime. This technique is proposed for the sunscreen system, here proposed as plantation birch, micro-waved, straightened and resin-impregnated.

A number of companies are currently developing and marketing plantation timbers; the proposal here is that thin saplings are pressure impregnated with preservative and resin sealer to give them a good design life. They are then microwaved to become more regular, and to enable penetration of resin. Effectively, they will become plasticized. This has been done experimentally by timber researchers in Australia. The north façade of the upper part of the tower controls penetration of direct sun by fully-retractable folding screens clad in irregular timber saplings, all mounted on tracks to allow the screens to be opened and closed. The position of the screens in front of each balcony and window are capable of being readily changed and animate the the building facade. In this way, the occupants' differing uses of their apartments create the animation and diversity of the facades, rather than the designers' arbitrary compositions. The slightly irregular screens will create a fascinating play of light and shade on the interior.

The building weather-membrane is also proposed to be based upon engineered timber. For the lower three storeys, the base cladding system of 30mm engineered softwood is used as a breathable weather membrane, and 3m x 1.2m marine ply is employed for the higher-rise cladding, both again being microwaved and pressure-impregnated under factory conditions. The result will be a long life-cycle cladding system, which does not employ toxic chemicals, lowering long-term maintenance and replacement costs. Visual relief to the timber is provided within the balcony inset areas by the use of white ceramipanel cladding, which also possesses a long design life and minimal maintenance.