6 DESIGN WITH NATURE AND THE RETURN OF COMMUNITY 1955 - 1975

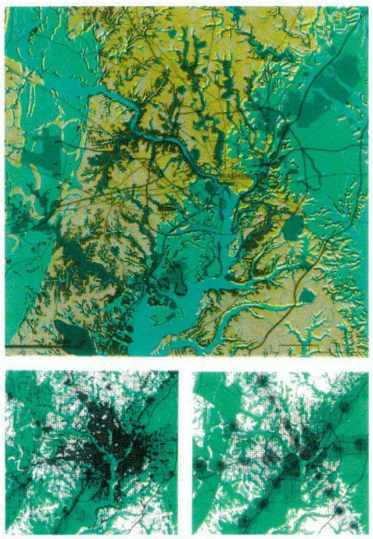
6.1 BACKGROUND AND STANDARD PRACTICE

Like the turn of the century and the end of the Second World War, the 1960's and 70's were a period of significant social change and upheaval. While the post war boom had greatly improved living standards, providing mass housing as noted above, its physical impact began to be felt. In the United States freeways built as a result of mass housing, cut through old neighbourhoods. Communities began to organise against development, forming preservation and later environmental groups. Consumer advocates arose at the same time. As was the case for Ebenezer Howard and Clarence Stein, the new ideas of social reform were initially encapsulated in key texts rather than projects. What is different is that the environmental and community activism movements were not advocating better urban environments; rather they were fighting to preserve the existing environment. This included existing neighbourhoods as well as natural areas. A brief background is set out below.

6.1.1 Design with Nature

In 1969 Ian McHarg, the landscape architect, wrote 'Design with Nature'[76] a seminal text that questioned prevailing attitudes to development. While the Garden City had proposed a closer relationship with the countryside, it was postulated from the point of view of the dweller. McHarg proposed a fundamental shift in thinking – consider development and its environmental impact in the one process. This view of our relationship with the environment and respect for nature signalled a paradigm shift which is still with us today. 'The problem of man and nature is not one of providing a decorative background for the human play, or even ameliorating the grim city: It is the necessity of sustaining nature as source of life...'[77] For McHarg 'man is therefore the potentially most destructive force against nature'[78]. As a landscape architect and planner McHarg applied his principles of environmental analysis to large highway routes and land use patterns rather than housing.

The Australian scientist and conservationist George Seddon further elaborated values similar to McHarg. In his book of essays Seddon [79] differentiated conservation from preservation. 'The emphasis in conservation should be on environmental design, not just on preservation, although much should be preserved. The first step in design is recognition, the ability to see what there is. Only then can we see whether a given structure is appropriate to its setting or whether a land use is appropriate in a given environment (P.112)'. In Seddon's view appropriate design must recognize and acknowledge the environmental values of a place. It is not enough to preserve nature and then design housing that does not recognize that place. Seddon called this view 'The custodial view – we believe that degradation of the environment is an infringement on the rights of future generations. This is intellectually the position of ecologically sustainable development/design.' For McHarg and Seddon the values of conservation and preservation are quite different.



76 Ian Mc Harg, Design with Nature, 1969, The Natural History Press, New York, p.19

77 Ibid

78 Ibid

79 George Seddon, Landprints, 1997, Cambridge University Press

LAND VALUES

LAND VALUES

ZONE 1 $3.50 a square foot and over.
ZONE 2 $2.50-$3.50 a square foot.
ZONE 3 Less than $2.50 a square foot.

TIDAL INUNDATION

ZONE 1 Inundation during 1962 hurricane.
ZONE 2 Area of hurricane surge.
ZONE 3 Areas above flood line.

HISTORIC VALUES

ZONE 1 Richmondtown Historic Area.
ZONE 2 Historic landmarks.
ZONE 3 Absence of historic sites.

SCENIC VALUES

ZONE 1 Scenic elements.
ZONE 2 Open areas of high scenic value.
ZONE 3 Urbanized areas with low scenic value.

RECREATION VALUES

ZONE 1 Public open space and institutions.
ZONE 2 Non-urbanized areas with high potential.
ZONE 3 Area with low recreation potential.

WATER VALUES

ZONE 1 Lakes, ponds, streams and marshes.
ZONE 2 Major aquifer and watersheds of important streams.
ZONE 3 Secondary aquifers and urbanized streams.

FOREST VALUES

ZONE 1 Forests and marshes of high quality.
ZONE 2 All other existing forests and marshes.
ZONE 3 Unforested lands.

WILDLIFE VALUES

ZONE 1 Best quality habitats.
ZONE 2 Second quality habitats.
ZONE 3 Poor habitat areas.

RESIDENTIAL VALUES

ZONE 1 Market value over $50,000.
ZONE 2 Market value $25,000-$50,000.
ZONE 3 Market value less than $25,000.

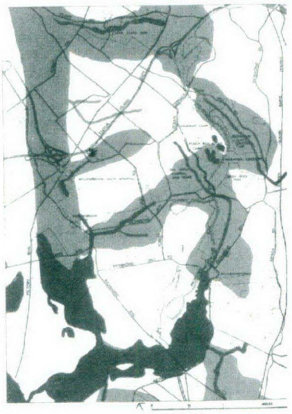
INSTITUTIONAL VALUES

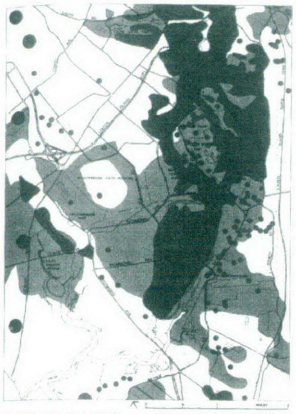
ZONE 1 Highest value.
ZONE 2 Intermediate value.
ZONE 3 Least value.

HISTORIC VALUES

TIDAL INUNDATION

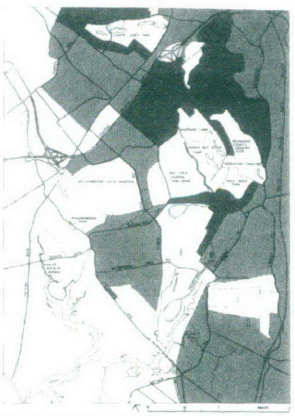
WATER VALUES





SCENIC VALUES

RECREATION VALUES

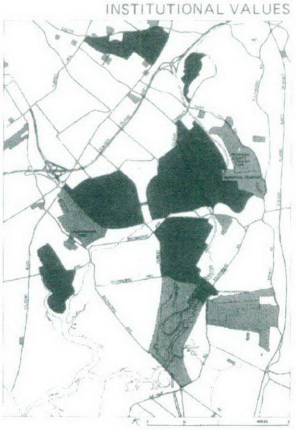


RESIDENTIAL VALUES

FOREST VALUES

WILDLIFE VALUES

INSTITUTIONAL VALUES



6.1.2 The Return of the Community

The consultative approach has been identified by Sir Peter Hall as one of the major changes in housing over the 20th century[80]. Even more than Environmental Response, this approach is more one of method than planning model, though it did signal a questioning of what a community is. It also reflected a significant shift in values – one of citizen participation and consumers' voice in how communities might be organised.

Like the environmental movement, consultative planning has arisen in response to rapid change in cities that either destroyed or significantly changed the existing built environment. Community anger over new freeways routed through existing residential areas led to the advent of organised community groups. While the environmental movement grew in response to the increasing loss of natural landscapes and forests, change to existing built environments has perhaps had a greater impact on more people living in metropolitan and later, suburban areas.

One of the first significant texts to address community action and its implications for planning was Christopher Alexander's Pattern Language[81]. Well known for its methodology as well as advocating new forms of community, Alexander's community based approach favoured small scale incremental changes to existing settlements rather than comprehensive clean slate planning approaches. For Alexander these formal patterns ignored existing natural and man made patterns. More importantly, Alexander observed that communities of more than 5,000 – 10,000 lacked an effective voice[82].

The values of community consultation put the rights of the community and groups above those of any particular planning model. Arnstein's Ladder proposed a hierarchy that linked citizen participation to the devolution of political power,

'...the fundamental point [is] that participation without redistribution of power is an empty and frustrating process for the powerless. It allows the power holders to claim that all sides were considered, but makes it possible for only some of those sides to benefit. It maintains the status quo'. [83]

Interestingly, since the advent of community consultation, regional planning has seen a decline in structure planning in favour of more policy oriented plans until very recently with the development of the Sydney Metropolitan Strategy where the actual structure plans have not been publicly released.

The two issues of environmental impact and community consultation arose out of broad community opposition to both development and the construction of major freeways that required the bulldozing of large areas of existing communities in the 1960's and 70's. Like all other paradigm shifts this coincided with significant social upheaval. The era of the Vietnam War was also the time of reaction against government and large multi nationals. Key texts included 'Small is Beautiful'[84] and 'Design with Nature'[85]. Housing paradigms shifted away from 'nature as garden' towards 'nature as ecology'.

80 Sir Peter Hall, Cities of Tomorrow, 1988, Basil Blackwell Oxford

81 Christopher Alexander, A Pattern Language, 1977, Oxford University Press

82 Ibid, p.71.

83 Arnstein S., 'A Ladder of Citizen Participation', AIP Journal, 1969, pp. 216-224.

84 EF Schumaker, Small is Beautiful: Economics As If People Mattered, 1974, Abacus, London

85 Ian Mc Harg, Design with Nature, 1969, The Natural History Press, New York

Sea Ranch in the United States and Tapiola in Europe were paradigms of escape from the city and the suburbs where ecological impact outweighed the benefits of Garden City principles developed over the 20th century. Instead of the neighbourhood there was the clustered 'village', a self sustaining agrarian model. The notion of self sufficiency was also championed by Christopher Alexander.

Unlike the previous Garden City and Radburn paradigms a lasting comprehensive neighbourhood planning model has not emerged from this period apart from the 'cluster' principle. The principles of environmental impact and conservation did not create a new cohesive model for street or subdivision patterns. There was however a new attitude to land uses – that of land capability and impact assessment. The interest in conservation was however also to revive interest in more traditional neighbourhood patterns in the late 1980's. In addition a number of innovative housing types were developed in the United States, Scandinavia and Australia. This included the courtyard house and housing cluster. Whether the cluster is a continuation of the Radburn model or more a move to the traditional village form is an interesting one. In some ways the paradigm was anti suburban and was a dead end.

6.2 INTERNATIONAL EXEMPLAR - TAPIOLA 1952 - 1970

'Every civilized culture has found a way to accommodate itself graciously to its natural surrounds'[86]

6.2.1 BACKGROUND AND VALUES

The new town at Tapiola was created by Asuntosaatio, a housing foundation established in 1951. 'We do not want to build houses or dwellings but socially healthful surroundings for contemporary man and his family'[87] . The site is 268 hectares and was planned as a self sustaining community in the spirit of the original Garden City. Creating jobs was a priority in planning the New Town. The basic values and elements were:

- The integration of buildings and landscape
- Rejection of the traditional pattern of streets and blocks
- Socially, biologically and physically healthy environments
- Individuality and choice
- Proximity and a strong relationship with nature
- The preservation of ecological systems and values
- Strong precinct centres
- Architectural excellence

Tapiola is 10 kilometres west of Helsinki and was part of Eliel Saarinen's plan for Greater Helsinki of 1918. A later plan of Tapiola by Otto Meurman divided the plan into four residential neighbourhoods. Tapiola was planned to accommodate a wider population of 80,000 residents with 5,000 to 6,000 jobs (59% of local employment required). In 1968 Tapiola generated 3,000 jobs which were 50% of the potential eligible population. It was projected to double this figure to 80%. The final plan was based on a density of 60 persons/hectare assuming say 16,000 residents on 268 hectares.

Tapiola was seen as a model and experiment for a contemporary new town. It was to challenge accepted ideas on residential area design and future patterns of urbanization. It was developed further in the 'Seven Towns' plan for Helsinki that envisaged a string of centres of about 100,000 to 200,000 totalling 630,000 people. This eventually became the seven sub regions plan for Uusimaa 2010 in 1968[88].

The Tapiola planners were well aware of Port Sunlight, Riverside, and Forest Hills Gardens, as well as Geddes, putting the Garden City into a regional context. In essence the plan proposed relatively high density satellites surrounded by woodland to avoid the conventional spread of development common at the time. In fact the Tapiola plan, while accepting the earlier structure plan by Meurman, significantly increased the density proposed from the original plan of 740 houses – 3,000 – 4,000 persons (15 persons per hectare or around 1/3 of that of the standard American Suburb) to 75 persons per hectare. While the density is relatively high, the quantum of built form footprint is low.[89]

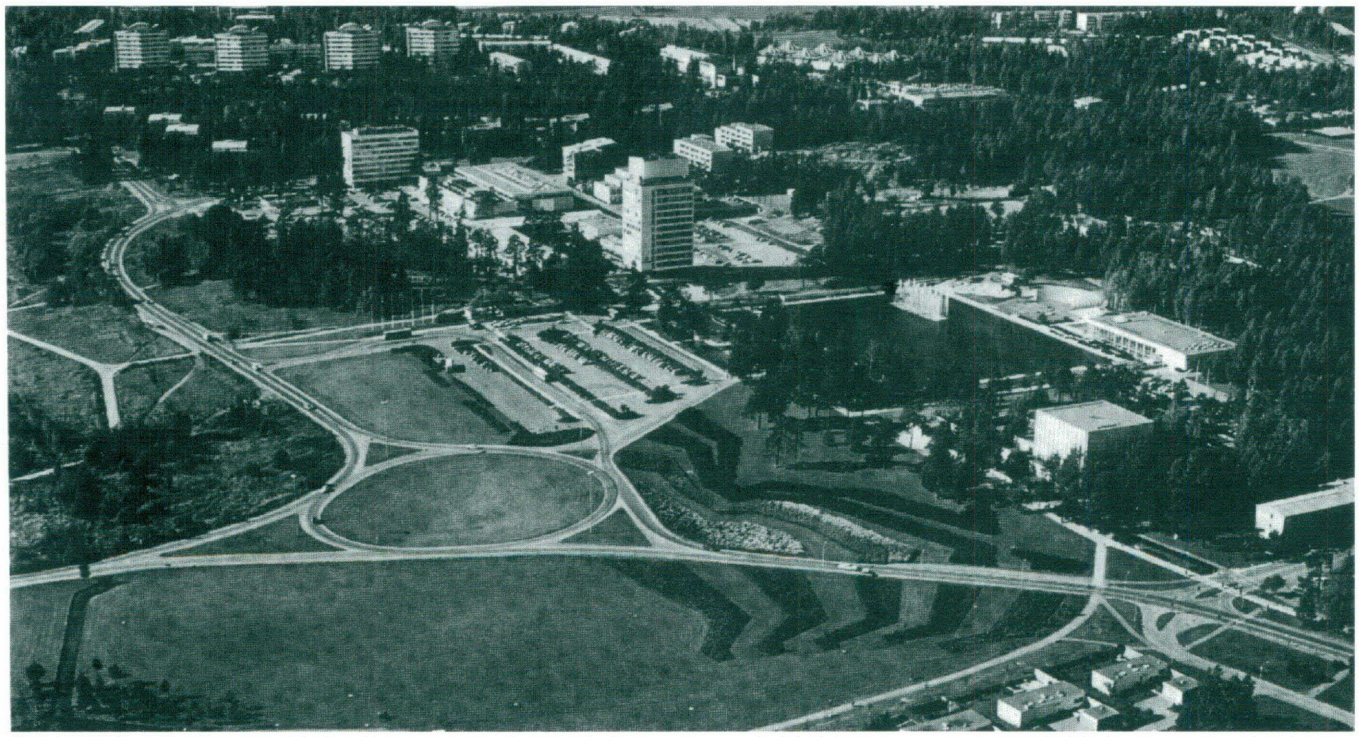
86 Heikki von Hertzen and Paul Spreiregen Building a New Town – Finland's New Garden City – Tapiola, , MIT Press , Cambridge Massachusetts, 1971

87 Ibid

88 Ibid

89 Note that over half the site is landscaped open space, with roads being under 10%. Building footprint comprise less than 25%. The following set out the statistics:

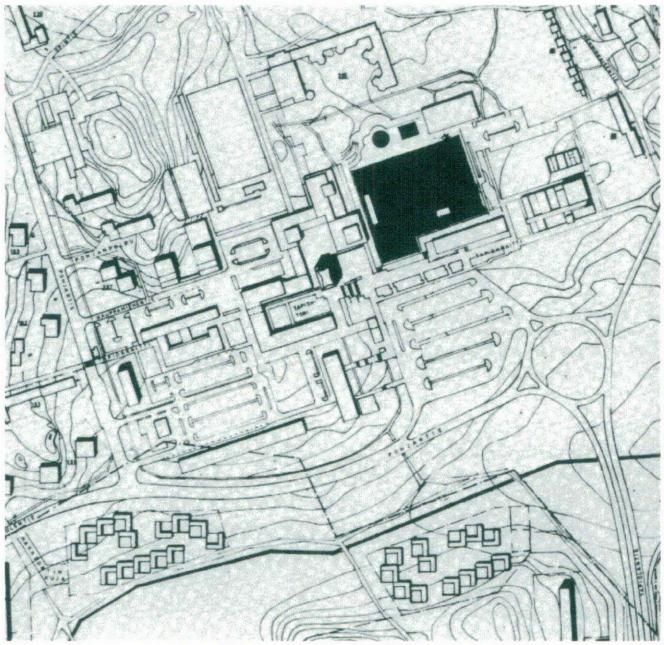
Housing	65.4 Ha	24% (half row and family, half apartments)
Public Buildings	13.8 Ha	5%
Community Buildings	5.6Ha	2.3%
Industrial Buildings	10 Ha	3.7%



The increase in density was proposed primarily for social reasons: to provide sufficient population to justify social, commercial, and leisure facilities.

The four principal community elements were:

1. Housing – with a diversity of income levels and types
2. Services – Shopping, medical, education
3. Work – Blue collar to white
4. Recreation – Outdoor to indoor



Historic Plans / Image

6.2.2 ELEMENTS

Element 1- Master Plan Structure (Internal Core Connected – B)

Tapiola is structured into four neighbourhoods including the town centre. Each neighbourhood is defined at the edges by a greenbelt with a radius of 330 metres from centre to edge.

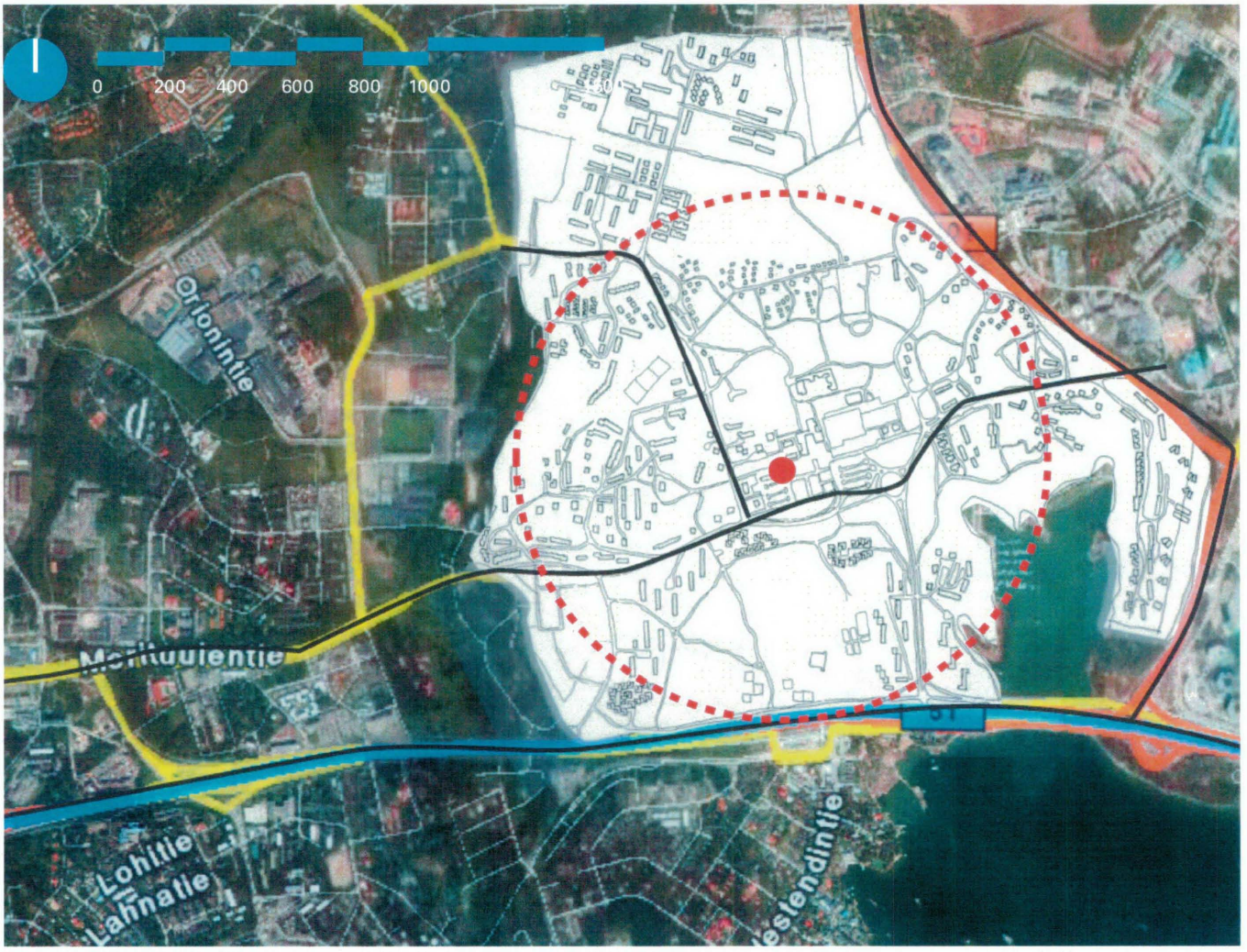
The town centre was originally conceived as four quadrants divided by a north/ south and east /west Avenue.TheTapiola planners changed this to avoid cutting the centre into four 'isolated' quadrants. They believed that Meurman did not anticipate the impact that the motor car would have and did not want the car to dominate the plan, much as was feared at Radburn some 25 years earlier. As a result the east/ west avenue was moved south and the north/ south avenue deleted. In their stead, pedestrian links were created, again very much in the manner of Radburn. Like Radburn, open space was seen as a connector and streets as dividers. Consequently streets and pedestrian paths were separated.

Land has been divided into neighbourhoods[90] and then sub-precincts. The western neighbourhood for example was then subdivided into nine smaller sub precincts. The planning appears 'relaxed' as it is structured around topography and existing features rather than an orthogonal system. The planners believed that this was just as structured as a grid, but that the structure was more integral to the character of the place. Interestingly, a later neighbourhood was planned on a more orthogonal grid. This was the north neighbourhood, which is the flattest part of the site.

The town centre was subject to a design competition and was won by Aarne Ervi. He filled the existing gravel pit to create a central reflecting pool and focus to the town centre. The neighbourhoods are planned so that all dwellings are within 250 metres of a shop. Interestingly the town centre has been expanded and a major 'outdoor street' mall has become the shopping spine.

90 The neighbourhoods were built progressively as units as follows:

East Neighbourhood	1952 – 56 5,000 residents
West Neighbourhood	1957 – 60 5,000 residents
Town Centre	1958 – 70
North Neighbourhood	1958 – 67 5,000 residents
South Neighbourhood	1961 – 65 3,000 residents
Itaranta	1958 – 64 2,000 residents
Total	20,000 residents

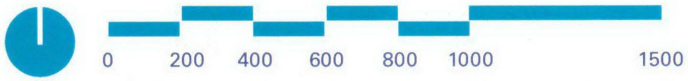


Element 1 - Master Plan Structure

Element 2- Street Pattern (Dendritic – B)

Unlike most of the exemplars in this study, the street pattern at Tapiola is not a key structuring element of the plan. Rather it is a loosely gridded network that generally follows the site contours. At less than 10% of the site area, the quantum of roads is low. This is a result of the relatively low building footprint achieved because of the high proportion of apartment buildings. Key elements included:

- Loose grid around the centre includes the East /West Avenue
- Streets extend out from the centre into smaller streets and cul-de-sacs
- Streets respond to topography rather than a geometric pattern
- Street pattern creates limited connectivity
- Connectivity depends on a separate pedestrian path network



Element 2 - Street Pattern

Element 3- Block Pattern (Super Block – C)

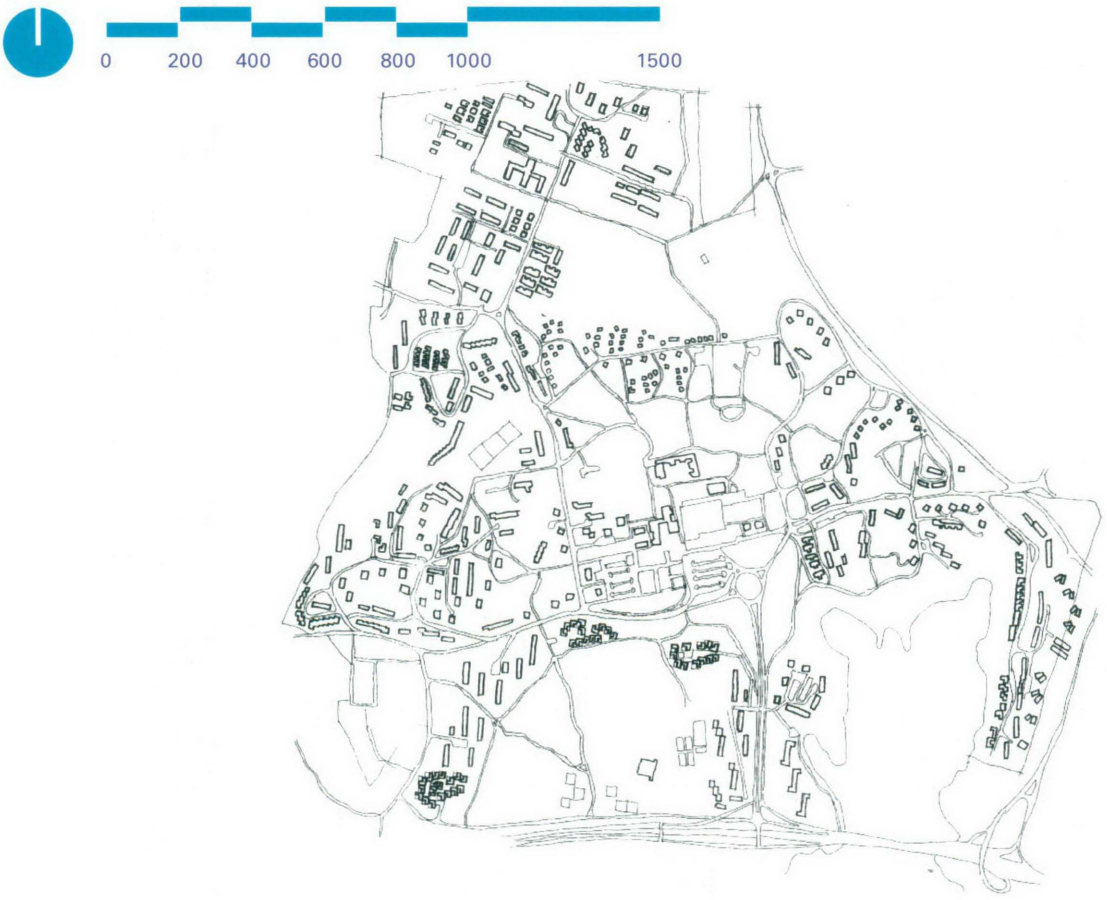
Tapiola is not structured into traditional blocks, except in the town centre where there is a more traditional pattern of block and open space. This contrasts the town centre and other neighbourhoods. The later work is more formalized and regular. Overall however, the plan is a composition of individual and clusters of buildings placed within the landscape.

- No formal block pattern
- Dwellings 'sit' in the landscape

Element 3 - Block Pattern

Element 4- Subdivision and Lot Pattern (Discrete or Super Lot – C)

Because the plan is structured as individual buildings and clusters there are no traditional lot subdivision patterns, except in the town centre itself as noted above.

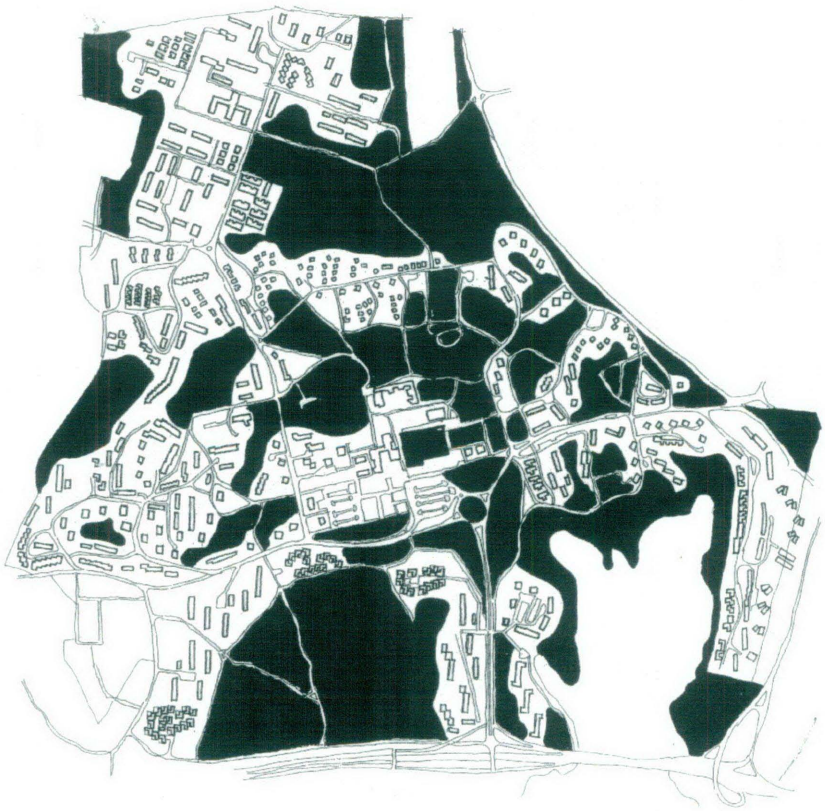


Element 4 - Subdivision & Lot Pattern

Element 5 - Open Space Pattern (Linear – B)

Open space at Tapiola was designed to link neighbourhoods rather than divide them. Open spaces are generally natural and unstructured being either greenbelt areas or existing woodland areas.There are community gardens for apartment dwellers. Key elements include:

- Open space conceived to link neighbourhoods
- Open space is largely unstructured being either a greenbelt or existing woodland
- Reserves do not address the street; streets run within the open space
- Common open spaces are not defined



Element 5 - Open Space Pattern

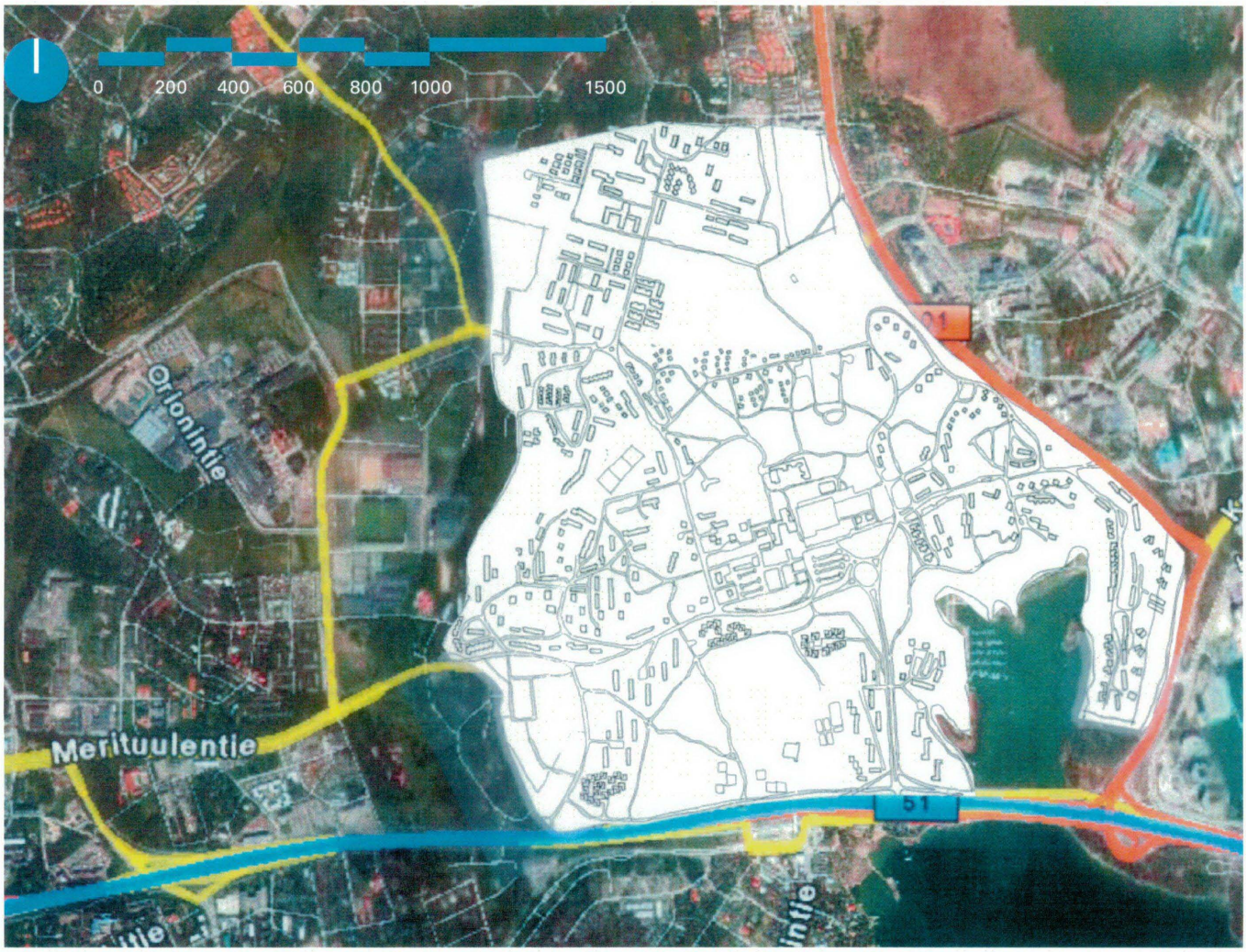
Element 6 – Built Form (Dispersed – C)

Like the earlier Rail and Garden Suburbs, Tapiola has a well defined urban core. The core is focused around a large water body, with central administration and civic buildings concentrated here. There is one tall tower containing civic functions that reinforces the core, in the Modernist manner.

Housing types however, were mixed throughout the plan rather than concentrating higher densities near transit for example at Forest Hills Gardens or Riverside. Again this was to integrate higher-income single dwellings with moderate-income apartments. This resulted in low-rise buildings being located adjacent to mid-rise walk up apartments. In the first stage Blomsted designed semi detached (weak link houses) adjacent to four storey walk up apartments.

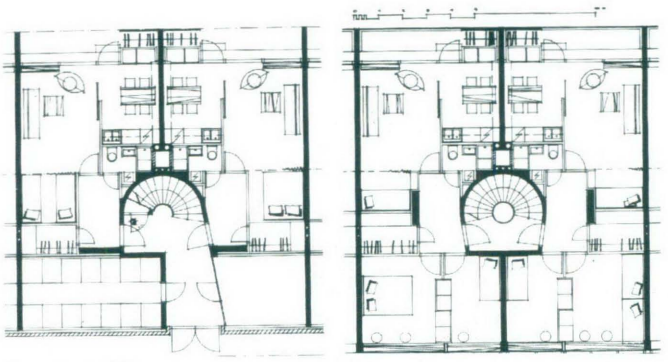
The built form is graduated from low rise near the town centre to tall apartment towers at the edge of the precinct. There is also a 'landmark' 14 storey office tower in the centre.

- Housing types are mixed throughout the site
- Low-rise buildings are generally located near the centre with high rise apartments at the edge of the precinct
- There is a centre including retail, as well as shops within each precinct



Element 6 - Built Form

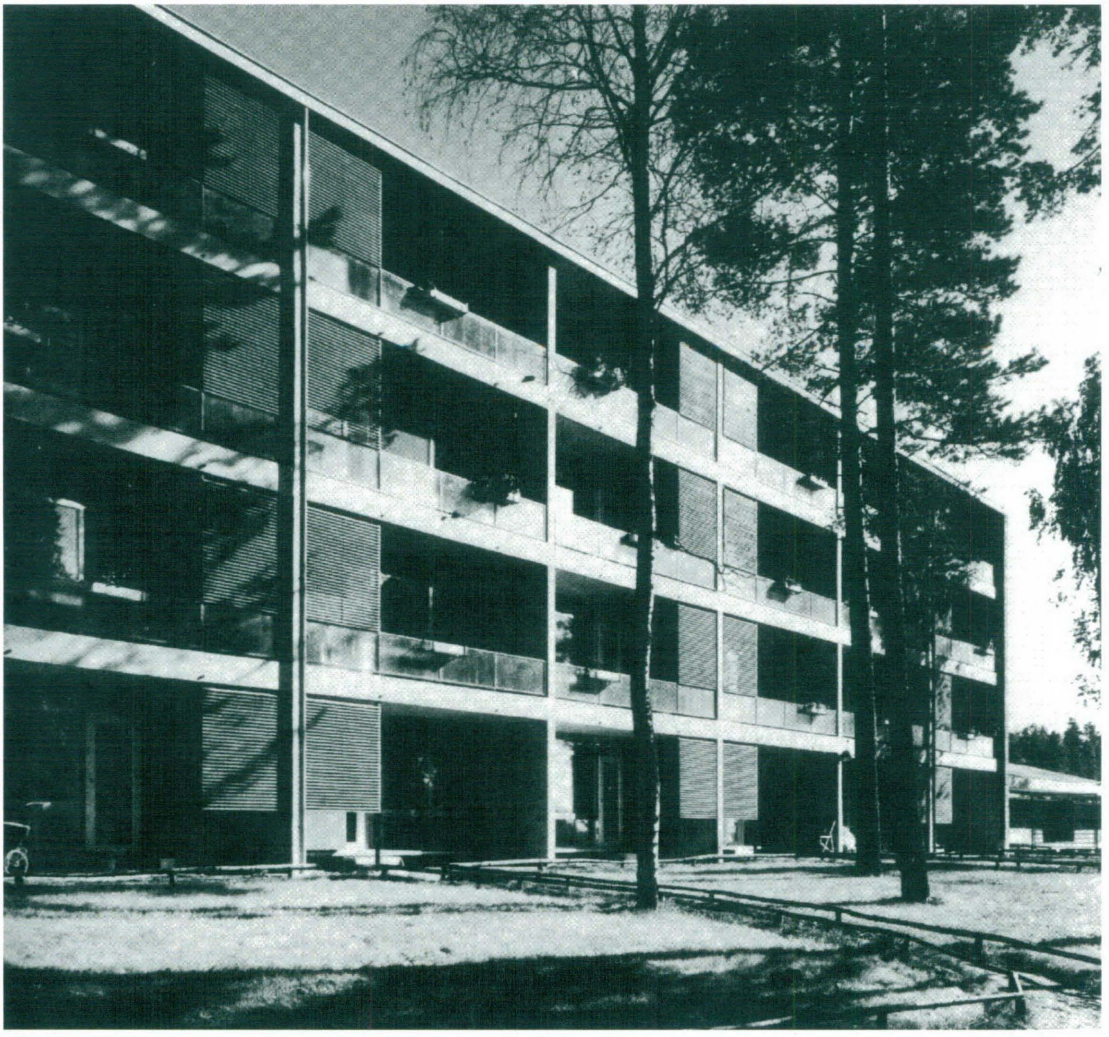
Element 7 – Housing Design (Site Specific – A)



Apartment Plan

The housing form is very distinctive, being designed to suit the terrain by selected architects and reviewed by panels including independent architects, landscape architects, engineers, social experts and housewives. To create a cohesive environment each architect designed an area of housing rather than individual housing types. A central objective of Tapiola was to create a real housing mix, both physically and socially. The housing company sold 80% of the sites at 50% of their market value to ensure a mix of incomes in each neighbourhood.

The dwellings are typically small with two, three, and four bedroom dwellings ranging in size from 70 to 95 square metres. There are smaller one-bedroom apartments of 54 square metres.



Low Rise Apartments

6.3 AUSTRALIAN CASE STUDY - SWINGER HILL 1969

6.3.1 BACKGROUND AND VALUES

In 1971, Robin Boyd bemoaned the Australian suburb, '...in Australia there is nothing which vaguely approximates the ideas and ideals of Tapiola. However, the immediate future looks promising, if only because of an example being prepared in Canberra...The first major housing development to directly challenge directly the Australian suburb is now under construction. It is named Swinger Hill. Its fate will determine how many more such experiments follow, and how soon'.[91]

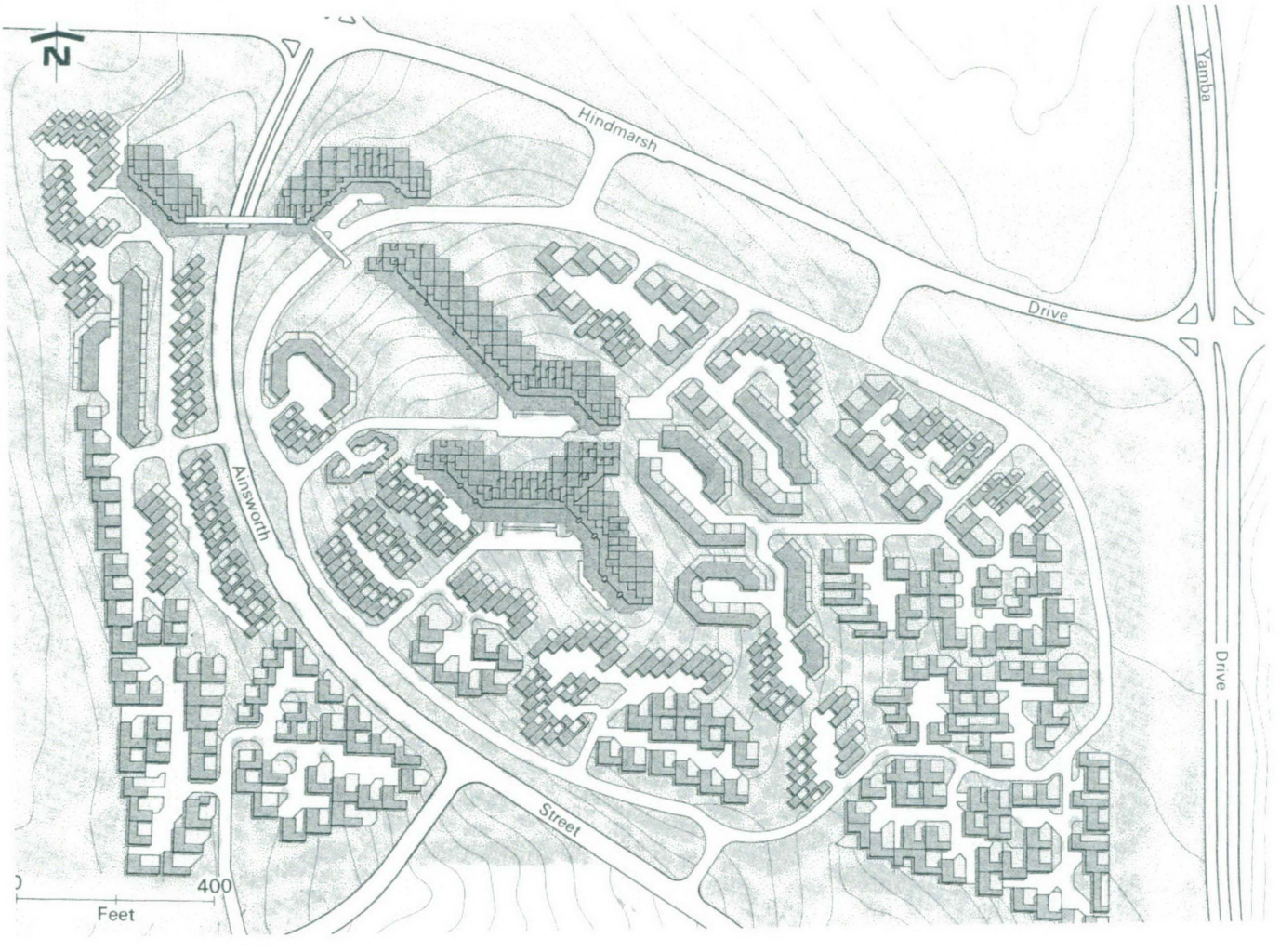
Ian McKay designed Swinger Hill in 1969. The site is 25 hectares located in the suburb of Philip, part of the satellite town of Woden south of Canberra. The site is an 'island' located off a major arterial road. The 'village' concept assumes that one drives to the site.

Swinger Hill shares many of the values of Tapiola, including the integration of buildings and landscape, rather than the more traditional pattern of blocks and streets. Also like Tapiola, Swinger Hill shares the values of neighbourhood and community developed at Radburn, creating a 'village' comprising clusters of courtyard houses as well as a central community building. Like Radburn, the community is linked by landscape not streets. Rather than the more orthogonal organisation of Radburn, Swinger Hill is structured around a careful response to topography. Small cul-de-sacs car courts are positioned around clusters of houses.

The theme of integration with nature extends to the housing which consists mostly of courtyard houses linking indoors and outdoors in a very similar way to Utzon's housing at Fredensborg[92].

91 Robin Boyd, 'The Neighbourhood', Living and Partly Living, 1971, McKay, Boyd, Stretton, Mant, Thomas Nelson, Australia

92 In 1962 Utzon designed courtyard and terraced houses grouped around a square in staggered blocks sitting in the landscape, the living areas of each dwelling extending into the landscape



Historic Plan

6.3.2 Elements

Element 1- Master Plan Structure (Internal Core Limited Connectivity – C)

The master plan structure of Swinger Hill results largely from the configuration of informal clusters of attached houses, as well as topographical response, rather than the pattern of streets and blocks. In this sense, Swinger Hill is more similar to Tapiola than other previous models examined. The basis of the design is one of clustering dwellings within the landscape, as well as creating social units within the clusters, free of the car. In this sense Radburn is also an influence. Key elements of the design structure are:

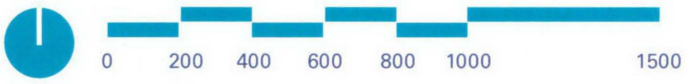
- Building clusters are the organising unit of the plan
- Landscape character is a dominant element
- The plan responds both to topography and existing vegetation

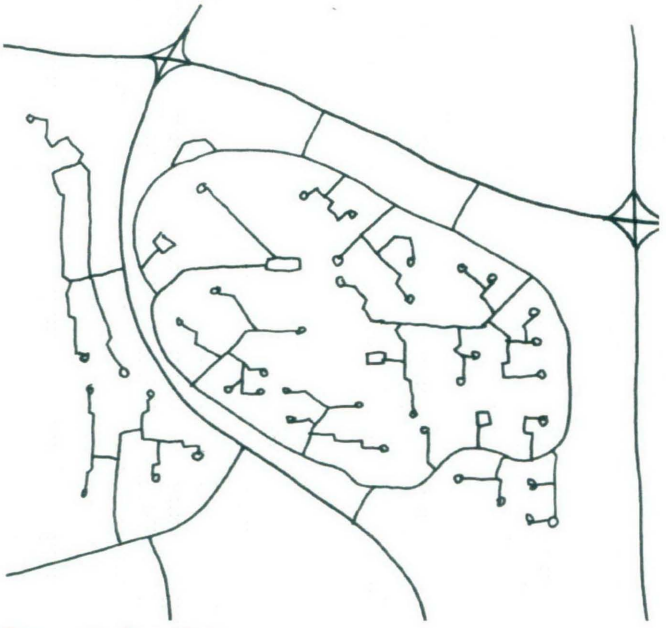
Element 1 - Master Plan Structure

Element 2- Street Pattern (Dendritic – C)

A loop road circles the site providing access to a series of housing clusters that are linked to each other by walkways, much in the manner of Radburn. Unlike Radburn, street systems and pedestrian paths are not separated. Rather, a series of cul-de-sacs provide vehicle access to all houses, while pedestrian paths link between clusters themselves. Key elements are:

- Loop road surrounds the site, linked to the highway
- Small streets and cul-de-sacs are accessed off the loop road
- Small streets and cul-de-sacs converge towards the centre of the site
- Streets respond to topography rather than a geometric pattern
- Street pattern creates limited connectivity
- Connectivity depends on a separate pedestrian path network linking clusters





Element 2 - Street Pattern

Element 3- Block Pattern (Super Block – C)

As noted above, the plan is structured by buildings being clustered in and around natural features rather than by any overall pattern. Buildings are organised into clusters rather than blocks. As a result there is no traditional block pattern. Because the streets are generally cul-de-sacs, streets do not generally surround the groups of buildings, and hence there is no block created. Key elements include:

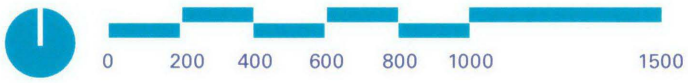
- No formal block pattern
- Dwellings are organised into clusters

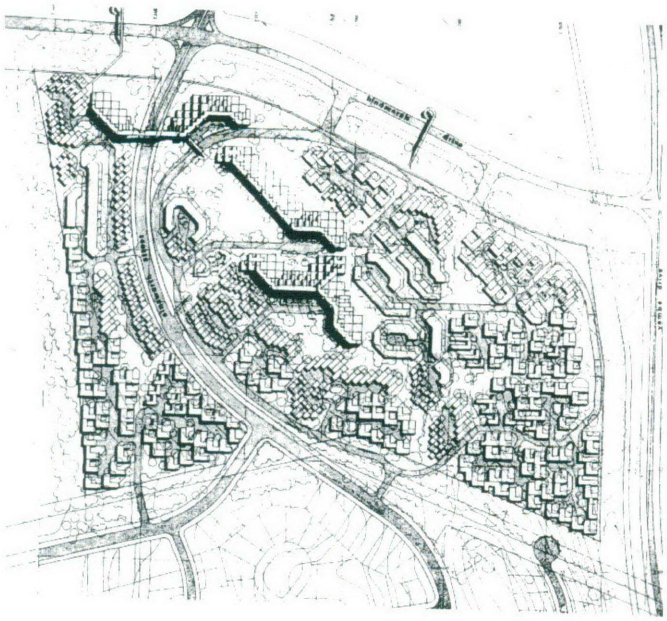
Element 3 - Block Pattern

Element 4- Subdivision and Lot Pattern (Discrete or Super Lot – C)

The lot pattern is really derived from the edges of courtyards and the cul-de-sacs access ways to the dwelling clusters. The spaces between the clusters and cul-de-sacs are then allocated as shared open space.

Subdivision reflects the cluster pattern with dwellings titled individually within the cluster.





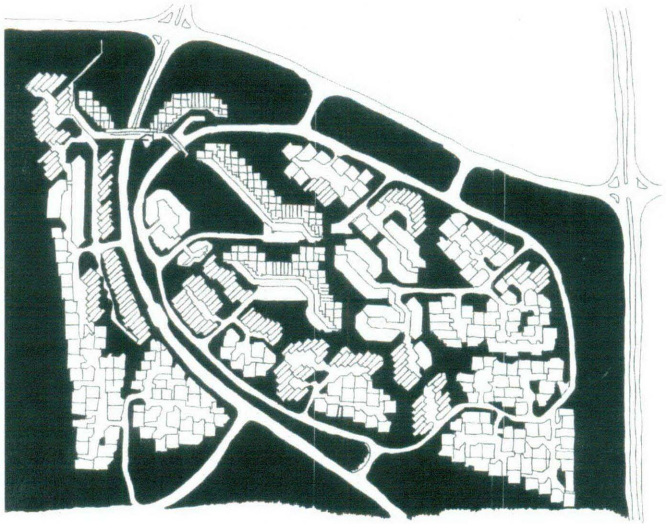
Element 4 - Subdivision & Lot Pattern

Element 5 - Open Space Pattern (Linear – B)

The open spaces, being linear are similar in form to the Radburn idea. Common open space areas and open pedestrian ways extend from the core in four arms extending to the housing groups. The pedestrian ways are separated from car traffic as in Radburn. Unlike the Radburn estates in Sydney there are no back fences facing the common open space areas and they are small in size with good surveillance from the dwellings. A large area of bush also rings the site. A central community core was designed with shops, pre-school and community facilities.

Once on the site one can walk to the recreational paths and bush, as well as within the village itself. A key design principle was that all dwellings were to have a direct link to open spaces. Other elements include:

- Open space conceived to link neighbourhoods
- Open space links to all dwellings
- Open space is largely unstructured, being the area between the clusters and cul-de-sacs
- Reserves do not address the street
- Common open spaces are defined by buildings not streets



Element 5 - Open Space Pattern

Element 6 – Built Form (High Density Linear – B)

The clustering of housing into discrete groups has created a form unlike any of the other exemplars studied here. It shares some similarity with Utzon's courtyard housing project built at Fredensborg in 1962. The cluster form was well suited to the site's topography and maintaining as many existing trees on site while still achieving a higher density and the 'village' form that McKay was seeking. Key elements include:

- There is a central core including shop, pre school and community facilities
- The core is not defined as an urban space

Element 6 - Built Form

Element 7 – Housing Design (Site Specific – A)

The housing and built form is very distinctive, with the courtyard houses designed by Ian McKay. The housing types included 'row houses, stepped houses, terraced houses, and flats'.[93] Many of the dwellings are single storey courtyard houses arranged in relatively dense clusters utilizing courtyard walls to achieve privacy, much as more urban models do. 700 dwellings over the 25-hectare site equates to a net density of approximately 30 dwellings per hectare. Given that a population of 2,400 was projected, a population per dwelling of almost 3.5 people was assumed.

Integration with Surrounds

Ian McKay was critical of the more conventional low density housing of the time, arguing that 'A far wider range of housing types should have been developed to enable people to find the form most suitable to their social or economic position. Perhaps there is an increasing realisation of the disadvantages of the forced isolation...and this will eventually result in a spontaneous cry from the people for denser, more convenient forms of housing'[94]. Housing densities have increased mainly as traditional detached houses on smaller lots rather than the more innovative housing types that McKay was promoting. Key elements include:

- Special courtyard houses designed for the site
- House and courtyard design is integrated
- High level of architectural design overall creates a distinctive built form

93 Ian McKay, 'The House', Living and Partly Living, 1971, McKay, Boyd, Stretton, Mant, Thomas Nelson, Sydney

94 Ibid

Entry

Courtyard Houses

Attached Housing