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# TOWN HOUSES

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Architect — Ian McKay & Associates, Developer — Lend Lease Developments Pty.  
Ltd.*

accessible from the courtyards; and public open space dedicated to the local council. If the communal open space was large enough and appropriate in shape to provide for passive recreation, it may fulfil part of the usual requirement for public open space. In other words, the provision of communal open space may enable a reduction in public open space.

## **2) Ownership of Communal Open Space (See Illustrations in Section 5.4)**

Communal open space may be owned either jointly or individually by the owners of attached dwellings. In physical appearance and use it makes little difference which ownership is used.

Under joint ownership communal open space is owned in common by the residents and can be maintained either by an owners' association or by a body corporate set up under the proposed unit title legislation referred to in 6.4.

Under individual ownership of communal open space the subdivision may be designed so that all or most of the open space falls within the individual allotments. Those parts of each allotment outside the area of the dwelling and the private courtyard could have a legal covenant preventing owners from changing the ground cover, erecting fences or interfering in any way with the open space's unified appearance. This land then resembles the front gardens of properties facing streets where there are no fences. However, councils cannot control private covenants and the owners could agree among themselves to remove the covenant. This necessitates legislation prohibiting interference with the open nature of communal open space.

## **3) Maintenance of Communal Open Space**

Communal open space may be maintained in three ways:

- when owners own most of the communal open space individually they may look after it themselves as with their own gardens and sometimes the verge outside their homes
- the owners might form an association to maintain the communal open space. Where there is joint ownership, the association would already exist. Where there is individual ownership an association may be formed for the purpose of joint maintenance
- the council, if requested by the owners, may undertake maintenance under a legal agreement whereby the council may recoup the costs involved.

# TOWN HOUSES

HOUSING AT MEDIUM DENSITIES

Report of the Technical Advisory Committee  
on Medium Density Housing to the State  
Planning Authority of New South Wales.

Revised Edition by the New South Wales  
Planning and Environment Commission

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## APPENDIX B: PRIVATE COMMUNAL AND PUBLIC OPEN SPACE IN TOWN HOUSE SCHEMES

### 1) Types of Open Space

In detached housing areas each family has a certain amount of private open space attached to its dwelling. In addition these families may use public open space owned by the local council or other authorities.

In many attached housing areas — for example, Paddington — the same situation occurs, the only difference being that the private open space is smaller than in detached housing. However, the compact nature of attached housing allows the provision of another class of open space — communal open space — while still resulting in higher densities than detached housing.

The best examples of communal open space are the London squares exclusively used by people living in the dwellings around the squares. The square constitutes a class of open space in addition to the small private courtyards attached to the dwellings and the public parks and gardens open to everyone. The estate which leases out the dwellings around the square owns the square.

An example of communal open space in modern housing is the village-type community at New Ash Green, Kent, England. To overcome the legal difficulties of selling houses in common grounds, the developer set up a residents' society to which purchasers of the housing estate were required to subscribe. Ownership of the common grounds, together with the responsibility for management and maintenance, was vested in the society. The common property and the need for joint action fostered social interaction in the estate. The firm thus not only provided housing but also helped to create communities.\*

In Australia, as long as councils own public open space and individuals own private open space, there is no established form of ownership for communal open space. Some isolated examples of communal open space do, however, exist. At Mount Ommaney in the Brisbane suburb of Jindalee a low-density residential development of 100 ha has been built. In this development each owner has, in addition to his private garden, access to communal open space. Each parcel of communal open space is in the common ownership of eight or nine owners. A similar scheme operates in Elliston, a 20 ha housing development in Heidelberg, Melbourne. Here the houses, which are attached by pergolas or carports, are owned by Strata Title and the communal open space forms part of the common property.

If large town house schemes incorporating communal open space were built in New South Wales, three classes of open space would need to be provided: private open space in the form of courts or gardens attached to the dwellings; communal open space usually

\* Sachs, H., 'Planning for Community' *Official Architecture and Planning*, (June 1971) pp 455-458.

2) Various Methods of Expressing Landscaped Area Requirements

Thirty square metres\* of landscaped area per person in the 125 persons per ha zone described in the previous subsection, may be expressed as follows:

when the density is expressed in dwellings per site ha (assuming an occupancy ratio of 2.5 persons per dwelling):

Landscaped Area in Square Metres/Dwelling = Landscaped Area in Square Metres/Person X Occupancy Ratio in Persons/Dwelling

$30 \times 2.5 = 75 \text{ m}^2 \text{ per dwelling}$

when the density is expressed in habitable rooms per site ha (assuming an occupancy ratio of 0.65 persons per habitable room):

Landscaped Area in Square Metres/Habitable Room = Landscaped Area in Square Metres/Person X Occupancy Ratio in Persons/Habitable Room

$30 \times 0.65 = 19.5$

when the density is expressed as floor space ratio (assuming a gross residential floor area of 50m<sup>2</sup> per person):

Landscaped Area Ratio =  $\frac{\text{Landscaped Area in Square Metres/Person}}{\text{Gross Residential Floor Area/Person}}$

$\frac{30}{50} = 0.6 : 1$  (Total Landscaped Area = 60 per cent of Gross Residential Floor Area)

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\* This is not a suggested standard but merely a figure to illustrate the example.

# INTRODUCTION



The 1960s were a period of rapid growth in the Sydney Region. Pressure for living space created the need to investigate forms of dwellings other than the common low-density detached cottage. At the same time there was increasing recognition of the abrupt and often undesirable change that occurs when high-rise flats are built.

Accordingly, the New South Wales Planning and Environment Commission's predecessor, the State Planning Authority, formed an Advisory Technical Committee to investigate and advise on the role which compact, medium-density housing forms (that is attached houses known as villas, group houses and town houses) could play in the future development of the Sydney Region and other urban areas. The Committee was also asked to identify obstacles which inhibit the wider use of more compact housing forms and to advise on planning criteria for their control.

The search for alternatives to the detached house led to renewed interest in existing medium-density residential areas such as Paddington — an area which was becoming popular in the 1960s. This medium-density area provides a suitable living environment in close proximity to the city centre. Town houses have many advantages. They can be built in existing urbanized areas where services and community facilities already exist. Town houses also have less impact on the neighbourhood environment than flats.

## APPENDIX A: DENSITY AND LANDSCAPED AREA CALCULATIONS

### 1) Various Methods of Expressing Density of Development

A population density of 125 persons per site ha may be expressed on a zoning plan in any of the following ways:

**Dwelling Density** Assuming an occupancy ratio of 2.5 persons per dwelling:

$$\text{Dwelling Density in Dwellings/Site Ha} = \frac{\text{Population Density in Persons/Site Ha}}{\text{Occupancy Ratio in Persons/Dwelling}}$$

$$\frac{125}{2.5} = 50 \text{ du per hectare}$$

$$\text{Dwelling Density in Square Metres of Site Area/Dwelling} = \frac{\text{Occupancy Ratio in Persons/Dwelling} \times 10,000^*}{\text{Population Density in Persons/Site Ha}}$$

$$\frac{2.5 \times 10,000}{125} = 200 \text{ m}^2 \text{ per du}$$

**Habitable Room Density** Assuming an occupancy ratio of 0.65 persons per habitable room:

$$\text{Habitable Room Density in Habitable Rooms/Site Ha} = \frac{\text{Population Density in Persons/Site Ha}}{\text{Occupancy Ratio in Persons/Habitable Room}}$$

$$\frac{125}{0.65} = 192$$

$$\text{Habitable Room Density in Square Metres of Site Area/Habitable Room} = \frac{\text{Occupancy Ratio in Persons/Habitable Room} \times 10,000}{\text{Population Density in Persons/Site Ha}}$$

$$\frac{0.65 \times 10,000}{125} = 52$$

**Floor Space Ratio** Assuming a gross residential floor area of about 50m<sup>2</sup> per person:

$$\text{Floor Space Ratio} = \frac{\text{Population Density in Persons/Ha} \times \text{Gross Residential Floor Area/Person}}{10,000}$$

$$\frac{125 \times 50}{10,000} = 0.6 : 1 \text{ (Total Floor Area = 60 per cent of Site Area)}$$

\* 10,000m<sup>2</sup> = 1 ha

**Walls on Site  
Boundaries**

**Recommendations which need Change in Existing Legislation**

Clause 11.6(2) of Ordinance 70 to the Local Government Act should be amended to allow not only party walls to be built on side boundaries but also walls without openings which abut each other.

**Ownership**

The Strata Titles Act should be revised (or new legislation introduced) to enable freehold ownership of town house developments in which the individual dwellings cannot be on their own allotments and there is no genuine need to subdivide at separate levels. The Unit Titles Ordinance (1971) of the Australian Capital Territory is an example of the kind of legislation needed. In essence this Ordinance provides for subdivision into two kinds of units — one three-dimensional and similar to that existing under the New South Wales Act; and the second two-dimensional and suitable for town house schemes on the one level. The Act provides for subsidiary units also of two kinds. A three-dimensional unit (or subsidiary unit) enables ownership of parts of the building, while two-dimensional unit enables ownership of parts of the land. What is missing and needed in New South Wales legislation is the ability to subdivide a site into two-dimensional 'units' or 'lots' which for some reason do not qualify as separate allotments.

However, problems and conflicts do arise from this housing form and there is concern at the possibility of their widespread introduction without due consideration and control. There are also prejudices, misunderstandings and difficulties imposed by regulations and standards designed for different circumstances. While the Sydney Region Outline Plan and its Review assume that people will continue to live at low densities, medium-density housing is a viable housing alternative. Given decreasing household size without an increase in dwelling density, the existing built-up area will lose population. To maintain current population levels there must be an increase in the dwelling stock in built-up areas.

This publication was issued in April, 1972 and reprinted later that year. It has since been completely revised in line with the changed circumstances of the 1970s. While population growth has slowed there is still a strong case for medium-density housing as a means of containing the physical growth of urban areas and of properly relating homes, works, shops, recreation and community facilities.



**Paul Landa**  
**Minister for Planning and Environment**

1978



*Milson Road, Cremorne Point.*

an attached house. Consequently, several town houses are built on a single parcel. As a result, ownership of most town houses must be by some form of title other than the usual separate title relating to detached houses.

#### **Walls on Site**

Building regulations require walls of residential buildings to be at least 900mm from site boundaries. Party walls are, however, excepted from this requirement. Attached houses on their own allotments may therefore be built only when they are separated by a party wall, i.e. by a single wall on the boundary.

#### **Site Coverage**

When several town houses are built on a single site, they are regarded as flats. Since regulations relating to site coverage are more stringent for flats than for houses, town houses must usually be built at a lower density than detached houses. Moreover, site coverage restrictions often act as a discouragement against two-storey and an incentive for higher buildings.

#### **Ownership**

No form of individual ownership in New South Wales is suitable for town houses built on one level. If existing subdivision practice were changed to allow a large number of town houses on their own land a form of ownership suitable for developments where dwellings cannot be on their own allotment would still be needed.

### **6.4 RECOMMENDATIONS**

The Committee believes that there is a need for certain changes to attitudes, zoning practices and legislation if town houses are to play an appropriate role in the future urban development of New South Wales. Some of these may be relatively easily implemented, while others would necessitate modification in existing legislation.

The following recommendations are therefore summarized under two headings:

- those which can be readily implemented
- those which require a change in existing legislation

#### **Recommendations Which Can Be Readily Implemented**

#### **Public Understanding**

Public understanding of the contribution that town houses can make to urban development should be promoted. When local councils zone areas for residential uses, they should provide enough zones at densities suitable for attached dwellings. All residential zones should be defined in terms of intensity of development (which may be expressed as dwelling density, habitable room density, or floor space ratio) rather than by listing the types of dwellings permitted. The intensity of an area's development will be controlled, but the types of dwellings will be allowed to vary.

#### **Subdivision**

In areas zoned for a medium range of densities, councils should permit subdivision to sizes economical for attached dwellings. The minimum allotment size should depend on the area's desired density, and may be somewhere between 200 and 300m<sup>2</sup>. If it were 232m<sup>2</sup> or more, no amendment to Ordinance 70 would be necessary.

#### **Site Coverage**

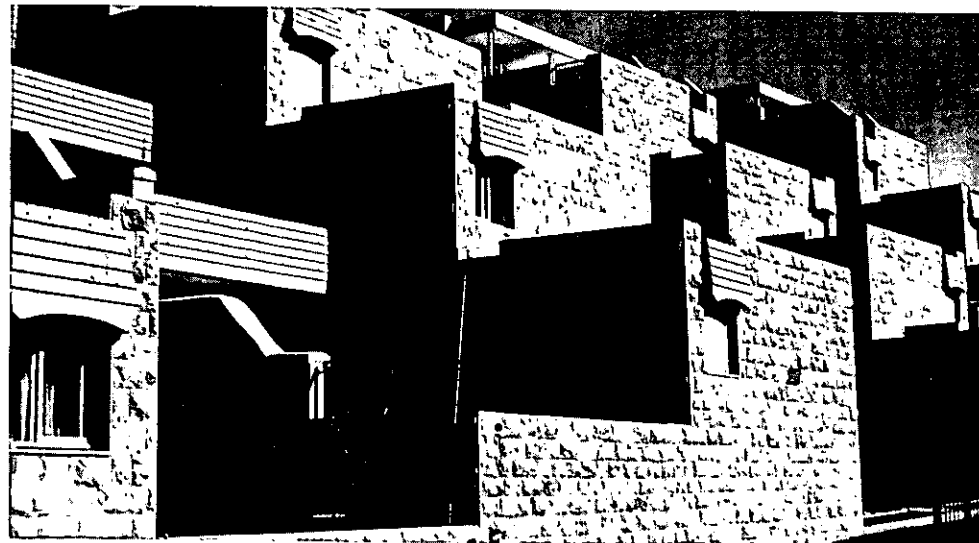
Councils should replace their regulations on the maximum permissible site coverage by a minimum requirement for landscaped area.



lives. Efficient public transport and a safe and convenient pedestrian system can be provided economically only at the medium densities of town houses (or at higher ones). Similarly, schools and shops are more easily located within walking distance of most dwellings.

**Compactness,  
Adaptability,  
Versatility**

The compactness, adaptability and versatility of town houses usually offers wide scope for a visually attractive townscape. Given good design, group housing provides a high quality of environment both for convenience and from an aesthetic viewpoint.



*A stepped town house development in Jerusalem, Israel.*

### 6.3 OBSTACLES WHICH IMPEDE THE EFFECTIVE DEVELOPMENT OF TOWN HOUSES

**Public and Councils' Attitudes**

There are some obstacles to the effective development of group housing in New South Wales. The modern town house is of recent origin in New South Wales. Few people have lived in a town house and there is lack of understanding of them. Town houses are thought to have an adverse affect on the environment produced by detached houses. Such public attitudes are often reflected in the attitudes of local councils, which have not always given sufficient opportunity or encouragement to town house development.

**Zoning Practices**

Past zoning practices have not helped the growth of attached housing. Some councils have allowed town houses to locate in all residential areas giving rise to a great deal of local opposition. Other councils have allowed town houses only in areas zoned for flats but in these areas town houses are at an economic disadvantage and therefore unlikely to be built. Councils are tending to adopt the practice of providing areas especially for town houses. Residential zones used to be defined by the types of building which may be built in them, rather than by the desirable intensity of development. Certain existing dwelling forms, however, do not readily fall into the given classifications. Moreover, experimentation and innovation are impeded, since newly developed housing forms rarely appear among the permissible types. Zoning by density is now becoming more common.

**Allotment Sizes**

Most local councils have determined, either by resolution or in planning schemes, minimum allotment sizes which are too large for

## SUMMARY

### SECTION 1:

#### EVOLUTION OF TOWN HOUSES

Town houses are defined, for the purpose of this report, as attached houses which share no part of the building in common and which usually are not more than three storeys, are built at medium density, have separate entrances and private open space.

Terrace houses, which were more common than detached houses in Sydney during the 1880s, began to decline about the turn of the century. Between World War I and II, duplexes and semi-detached cottages appeared. During the 1960s, a revival of old terrace houses began and town houses in their present form appeared about the middle of the decade.

*(1964) Clarke Quay, Riverwood  
see p. 31*

### SECTION 2:

#### THE WIDER BACKGROUND

Widespread acceptance of medium densities would bring homes, jobs and entertainment closer together. Public transport is likely to be more viable in medium density than in low density areas. Medium density could stem population loss brought about by declining household size. Medium to high density may also prove to be the only development which is profitable with high land costs.

For social and economic reasons, detached houses and flats do not suit all people at all stages of life. Households of varying age, size, and life style differ in their housing requirements. Town houses widen the choice of dwelling type.

There are good examples of town house development in all states. Canberra, Melbourne and Perth provided some early examples of well-designed, medium-density housing.

### SECTION 3:

#### CHARACTERISTICS OF TOWN HOUSES

Net densities in new town house developments are about two or three times those in detached development and about one-third lower than those of old terrace housing.

Life in detached and town houses is basically the same although the owner of a town house usually has less private outdoor space. With good design, which can compensate for lack of area, equal privacy is possible in both detached houses and town houses. Flats, on the other hand, do not have the same feeling of independence or individuality.

Redevelopment to flats causes abrupt environmental changes and contributes to conflict between old and new. Town houses involve less alteration in the character and scale of a residential area. Low-density development, if not closely related to other facilities, may lead to isolation and long, expensive journeys to shops and work. High-rise flat development reduces accessibility to outdoors and open space.

## SECTION 4:

### EXISTING SITUATION OF TOWN HOUSES IN NEW SOUTH WALES

As a result of large minimum allotment sizes, few town houses were built between 1920 and 1960. However the introduction of Strata Titles in 1961 enabled a number of town houses to be built on one allotment (the Strata Titles Act came into being in 1973). Because some councils allowed town houses in detached housing zones which led to resident opposition, the former State Planning Authority advised that special zones be allocated for town houses. Although no specific building regulations for town houses exist, the Building Regulation Advisory Committee has outlined suggested standards, and these have been included in some planning scheme ordinances as well as in local council codes.

Since the location of town houses is governed mainly by council regulations, town houses are currently concentrated in local government areas where regulations are favourable.

## SECTION 5:

### PROBLEMS AND SOLUTIONS

Town house development is inhibited by zoning practices and regulations, ownership problems and economic problems and to some extent by attitudes. Because there has been little experience in Australia with town houses, the public lacks understanding about their effect on detached housing areas. Many councils consider town houses to be like flats, and developers are less willing to experiment with a new housing form than to continue with traditional dwelling styles.

The past practice was to zone by building type. As planning schemes are revised, zoning is changed from the basis of building types to density. Thus it should be possible to abandon the dichotomy between dwelling houses and residential flat buildings. There is also a strong case for allowing allotments as small as 200m<sup>2</sup> in areas zoned for town houses. Regulations should be altered to allow walls without openings on side boundaries. Local regulations limiting permissible site coverage could be replaced by requirements of landscaped area related to the size of the site or the number and size of dwellings.

The 1973 legislation is not suitable for most forms of town houses. Although smaller allotments would allow most town houses to be owned by the usual freehold title, there is a need for legislation to allow ownership of attached dwellings, which cannot be on their own allotment, but which are on the same level.

Economic problems do not arise out of the nature of town houses, but out of existing zoning practices which favour flat construction. Financing problems arise because town houses are considered as flats.

Why hasn't  
Rosethorn the  
DEP done  
this?

### Cost of Outward Growth

1978

### Demographic Trends

### Densities

### Savings in Cost

### Town Houses in the Urban Environment

### Transportation and Community

## SECTION 6 CONCLUSIONS AND RECOMMENDATIONS

### 6.1 THE FUTURE ROLE OF TOWN HOUSES

The Committee believes that town houses will continue to play an increasingly important role in the growth of Australian metropolitan areas. The scale and rate of metropolitan growth are such that further development at existing densities forces families to locate at great distances from city centres and coastal areas. Attached housing constituted a large proportion of dwellings in the second half of the nineteenth century because rapid urban growth without the railway and motor car forced people to live close to the city centre. Metropolitan growth is now so rapid that even today's means of transport cannot bring people living on the edges of the metropolitan area to the city centre in reasonable time. As in earlier times, people will therefore have to live at higher densities if they wish to use the centre's facilities, unless these facilities are decentralized.

Many trends in the Australian way of life increasingly favour smaller gardens. Since families are becoming smaller some people may want gardens for a shorter time. Young adults are leaving their parents' homes earlier. There are more women in the workforce. Many leisure activities take place away from home. All these factors indicate that proportionately fewer households may want a detached house in a large garden.

### 6.2 CHARACTERISTICS OF TOWN HOUSES

Well-designed town houses provide many benefits for overall metropolitan planning and also for families seeking accommodation.

Town house densities are two to three times those of detached housing. Thus attached housing results in substantial land savings. Increased town house development would shift some of the population growth from the periphery into built-up areas which have spare capacity in services and facilities.

Land savings with town houses are matched by savings in the cost of providing essential services like roads, water, electricity, gas and sewerage. These savings on land and services mean that town houses provide a cheaper way of accommodating people than detached housing.

Town houses can provide private open space for each family, and quite often provide communal open space for a group of families. At these densities skill in design is more important than at lower densities, but with good design, town houses can provide privacy equal to that of detached dwellings. Because attached dwellings are generally one or two storeys and thus involve little change in the Australian domestic scene, their introduction into residential areas is likely to be opposed less than flats.

The social effects of more compact housing forms have not yet been adequately researched. However, higher densities allow the provision of certain services which have a direct bearing on people's

adds to the cost through increased interest and other charges.

Building societies, banks and other financial institutions will readily provide loans on new town houses but sometimes it has been difficult to borrow on old terrace houses. However, discriminatory lending policies on terrace houses are declining.

## SECTION 6:

## CONCLUSIONS AND RECOMMENDATIONS

There is a continuing and increasing demand for town houses because of their advantages.

Town houses enable substantial savings in land consumption and building cost. They cause less change than flats to the traditional Australian housing environment and permit more economical use of transport and services.

Several obstacles to town house development are: individual and collective attitudes; minimum allotment sizes which are too large for a town house (in areas where new planning schemes are not in operation); regulations preventing walls on side boundaries; and lack of provision for group ownership of town houses, which are on one allotment and at the same level. ?

*Recommendations easily implemented:* promotion of public understanding of town houses; zoning of areas suitable for medium densities; lowering of minimum allotment sizes in medium density areas allowing most town houses to be treated as separate dwelling houses; and replacement of maximum site coverage requirements by minimum landscaped area requirements.

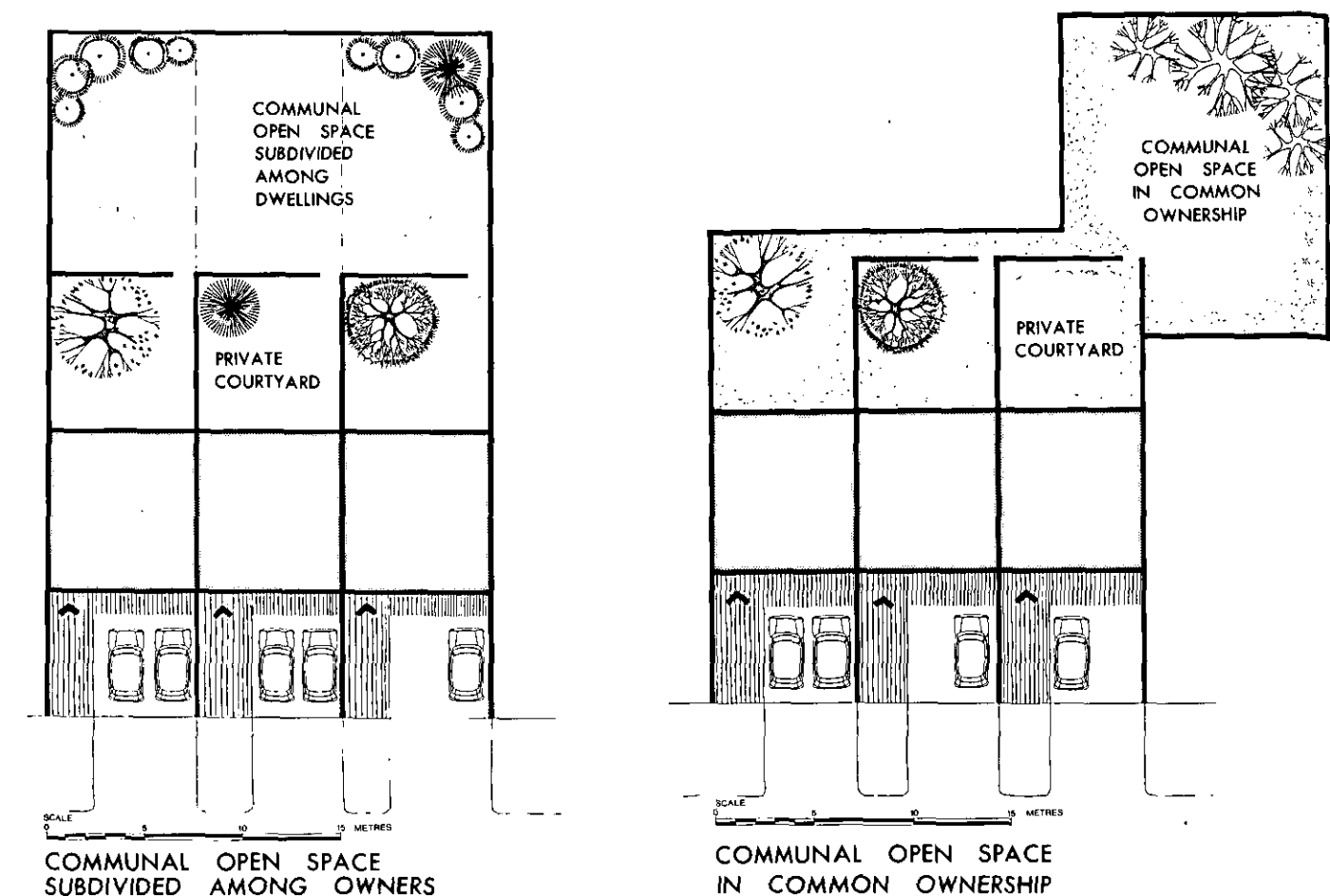
*Recommendations requiring changes to legislation:* permitting walls without openings to be built on side boundaries (Clause 11.6[2] of ordinance 70); reducing the minimum allotment to 200m<sup>2</sup> (Clause 11.6 [2]); and introducing or changing legislation to provide a form of title for attached houses which are at the same level.

*done - or made poss by 317M of LGA*



1	4
2	
3	

- 1 The advantages of the nineteenth century terrace houses have been rediscovered and some of Sydney's inner suburbs have become sought-after areas.
- 2 Town houses in Cremorne; a modern version of the old terrace house.
- 3 Villa homes in Bexley: similar to town houses but single storey.
- 4 Nineteenth century terrace housing in Paddington, New South Wales. (Photograph by Terry Dorrough).



## 5.5 PROBLEMS OF ECONOMICS

### Economics of Zoning

The economic problems town house developers encounter are not inherent in this housing form, but are the result of zoning and other requirements. The most important of these is that usually more dwellings may be put on a site in a block of flats than as town houses, and planning policies which do not recognize this, discourage developers from building town houses.

### Building Costs

It is often said that the construction costs of town houses are at least as high as, or higher than, those of detached housing. This may at present be true in Australia, where detached houses are the most common dwelling form. Town houses are often built to a higher standard than detached houses, and their costs are not really comparable. When the standard of the two dwelling types is the same, a town house must cost less than a detached house.

### Financing

The use of strata titles for town houses also has financial repercussions. All dwellings in a town house development must be completely finished before council issues the certificate which allows a builder to apply for registration of Strata Title. Generally, the sale of a town house may not be complete nor may the house be occupied until the certificate of title has been issued. As a result, schemes containing say 50 town houses may be empty for several months, while detached housing projects may be sold before completion. This

be replaced by landscaped area either expressed as a proportion of the site or related to the number and size of dwellings. For detailed example see Appendix A.

In compact developments like town houses, the privacy of landscaped area attached to individual dwellings may sometimes need above eye-level screen walls. In other cases these are not desired. Whether or not such walls are needed depends on the circumstances of each development and should not form part of regulations.

#### 5.4 PROBLEMS OF OWNERSHIP

##### Individual and Group Ownership

Generally, detached houses are owned by individual title while flats are owned by a title in which some parts of the building are owned in common.

##### Shortcomings of Strata Title

Town houses may be held in either type of ownership. In Australia the type of ownership depends on whether the dwelling is on a separate allotment. The old terrace houses are owned by separate titles because their allotments were up to standard when they were subdivided. As subdivision standards are now more stringent, most new town houses are held by another form of ownership which in New South Wales falls under the Conveyancing (Strata Titles) Act of 1961 or the 1973 Strata Titles Act (See Section 4.1). This Act does not suit, and was not designed to suit, town houses. Most town houses do not overlap and are not subdivided on different levels — the essential requirement of the Act. Such developments require neither a common insurance policy, nor a body corporate to manage common property because no part of the building is shared. Most town houses have so far been registered, by some subterfuge, for Strata Title simply because there is no legislation in New South Wales to enable freehold ownership of real property which is neither on its own allotment nor on different levels.

##### Private and Communal Open Space

If the suggestions given in Section 5.3, Allotment Sizes, were adopted most town houses could be on their own allotment and could be owned by separate title. If communal open space is attached to a development, it could be either subdivided among the dwellings, or if this is physically impossible, the owners of the dwellings could be tenants-in-common of the communal open space. In such cases the communal open space may be maintained by an owners' association or by council against payment of extra rates by the owners. (See Appendix B for more detailed discussion).

##### Group Ownership for Single-Storey Development

Even if subdivision regulations allowed most town houses to be owned in this way, there would still be town house developments requiring some form of group ownership. Some of these may overlap (for example, stepped development) or they may be built above a common garage. In this case they would come under the Strata Titles Act and there would be no problem about ownership. In other types of development, however, there may be no overlap at all, and the dwellings cannot be on legal allotments because the sites are too small or because it is not possible, or not economical, to provide access to a public road — a situation which can occur when redeveloping existing sites of difficult shape. Legislation to enable separate ownership of housing developments in which dwellings are not on legal allotments, but in which there is no subdivision on different levels, is urgently needed.

## SECTION 1 EVOLUTION OF TOWN HOUSES

### Definition of Town Houses

#### 1.1 VARIOUS FORMS OF TOWN HOUSES

In this report the term 'town houses' refers to **all attached dwellings\*** as distinguished from other dwelling forms such as residential flats and detached houses. Apart from being attached to each other at some point, town houses do not share any part of the building in common (unless it be a party wall or appurtenances like garages). In addition, one or more of the following characterizes town houses:

- generally they are not more than three storeys
- their occupants live at medium density. This medium density is relative and varies from place to place and from time to time, but usually lies between the densities produced by detached housing and flat development
- dwelling entrances are separate, accessible from the outside and not from a common entrance hall
- each dwelling has its own private garden.

### Town Houses Throughout History

In all known cities until the nineteenth century most people lived in attached dwellings. Compact development was vital for defence, movement and protection from weather. In Mediterranean countries the temperate climate encouraged a predominance of courtyard housing, while in northern Europe most dwellings were row houses. A detached house in town was usually the prerogative of the rich, but in some cases even rich people chose to live in attached dwellings, such as the famous town houses of London, Edinburgh and Bath.

### Row and Courtyard Houses

New forms of town houses are evolving in response to special situations. Rigid classification into types is difficult and probably neither necessary nor desirable. Nevertheless, two particular forms, the row house and the courtyard house are predominant. Row houses are attached to each other by their side walls (and are called terrace houses in Britain and Australia). They may be one or more storeys in height. Their side walls are normally blank and light and ventilation enters from the end walls. Courtyard houses, on the other hand, are usually single storey and may be attached on one or more sides. They are an inward-looking housing form and lend themselves to relatively high concentrations, since their privacy does not depend on their distance from the next development. More complex forms of town house exist, such as interlocking and overlapping dwellings, which still retain the essential characteristic of not having any part of the building in common. One example of this is stepped housing on sloping sites, where the roof of one unit serves as the open space of the next unit up the slope.

*\*In the following pages the term 'attached dwelling' will be used interchangeably with the term 'town houses'.*





*Example of row housing in Perth, Western Australia.*

#### Method of Building

Town houses are usually built in groups. Since they are attached, they are usually built by a developer or by a builder on behalf of a landowner rather than by individual persons. They are, however, often sold separately after completion.

### 1.2 TOWN HOUSES IN AUSTRALIA WITH PARTICULAR REFERENCE TO NEW SOUTH WALES

#### Terrace Houses, Duplexes, Semi-detached Cottages

Until recently Australian town houses occurred in three main forms: the terrace house, the semi-detached cottage, and the duplex house. Terrace houses are row houses, i.e. dwellings attached to each other at the side; semi-detached cottages are two dwellings attached to each other, i.e. they constitute a row of only two houses. Duplex refers to two dwellings on one site, where one dwelling is built over the other.

#### The Australian Terrace

Terrace housing played an important role in the early development of Australian settlements. Sydney, for example, after the building boom of the 1880s had more terraces than detached houses. The typical Sydney terrace house was built on a site of 100-200m<sup>2</sup>; it had a frontage of between 3-6m to a public road and often also to a lane at the rear. While the Australian terrace was based on its English counterpart, Australian climatic conditions and building regulations affected its particular form. The distinctive projecting parapet and party walls mainly resulted from fire prevention regulations. Balconies were built where the climate was warmer and sunnier.

#### Decline of the Terrace

By the end of the nineteenth century, terraces had declined in popularity and the detached house in its own grounds was universally regarded as the ideal dwelling. This resulted from a general desire to own one's home at a time when terraces were mainly for rental, and improvements in transport enabled people to live further from their work place.

Few new terrace houses were built after 1900 and most of those in the inner suburbs degenerated because of lack of maintenance. Between World War I and II a new and somewhat less compact form

#### Case for Amending Ordinance

#### Site Coverage

from this requirement. Party walls are defined as walls separating two buildings which are occupied by different persons (or parties). Town houses may therefore be built on their own allotment as long as the walls between dwellings are party walls i.e. single walls straddling the boundary.

The above amendment was included in the then Ordinance 71 to eliminate narrow gaps between detached dwellings, to facilitate the provision of light and ventilation to the space between them, at a time when there were no new attached dwellings in New South Wales. In view of the re-emergence of attached housing there is a case for changing the relevant clause [now 11.6(2)] to exclude from the 1m setback requirement all walls without opening which abut each other on boundaries.

Existing building regulations are unfavourable to town houses also through their site coverage requirements. These requirements are far more liberal for detached houses than they are for other dwelling forms. Detached houses may occupy two-thirds of their site, so two-storey buildings may in effect achieve floor space ratios of 1.3:1. However, when a two-storey building is occupied by two families it is classified as a residential flat building, and is governed by the provisions of Schedule 7 of the Local Government Act. It can therefore occupy only 40 per cent of its site and achieve a plot ratio of 0.8:1. In most local government areas the permissible site coverage has been reduced in councils' flat codes to 35 per cent or 30 per cent, corresponding to a floor space ratio of 0.7:1 or 0.6:1.

In conventional layouts of row houses the designer is not usually constrained by the site coverage restrictions set by Schedule 7, although he would be by more stringent requirements. Site coverage is a constraint in developments which step down on sloping sites with open space provided on the roof of dwellings below. Since much of Sydney is hilly, this design is appropriate in many cases and should be encouraged rather than discriminated against.

#### Landscaped Open Space

The amount and treatment of open space around buildings is vital to the environment. If built-upon areas alone are limited, the rest of the site can be concreted over and used for parking. It would be more expedient, therefore, to specify the actual landscaped area required in a development rather than the built-upon space. Some recently designed flat codes and some recent planning ordinances have substituted the landscaped area required for that of site coverage. Landscaped area\* should be related to the intensity of development on a site. The measure of site coverage should therefore

GC  
idea

GC  
definition

\* In the Woollahra Municipal Council Control Plan for Darling Point, landscaped area was defined: "Landscaped Open Space" means that proportion of a site which is designed, developed and capable of being maintained and used as naturally planted gardens and/or terraces, and/or unenclosed pedestrian terraces or walkways; excluding all garages, carports, laundries, drying yards, garbage collection and handling spaces, incinerators, dressing sheds, other appurtenant buildings, vehicular driveways, parking, manoeuvring, loading, unloading and ramp spaces; always provided that if the Council deems such to be readily accessible and/or suitable in location, treatment and appearance for acceptance as landscaped open space, then areas on top of constructed decks, flat roofs, and/or terraces, swimming pools, stairs, gazebos, and areas under covered ways, may be included within this definition."

### Small Allotments in Town House Zones

It is not suggested that councils simply discard their requirements for minimum size residential subdivisions and accept the 232m<sup>2</sup> laid down by Ordinance 70 as adequate in all cases. Sites of 232m<sup>2</sup> are not suitable for detached dwellings; that is to say although a skilled designer may plan a satisfactory house on them, there is no guarantee that a skilled designer will be employed. In areas intended for town houses, however, subdivisions could be allowed to 300, 250 and 200m<sup>2</sup> depending on the desired density. \*(For example, in a zone in which the specified density is 300m<sup>2</sup> of site area per dwelling, allotments of 300m<sup>2</sup> would be allowed, whereas in one where the density is 250m<sup>2</sup> of site area per dwelling, 250m<sup>2</sup> allotments would be allowed. Councils have discretion to ease this requirement but only in exceptional cases.)

### Problems of Small Sites

This practice could result in detached houses being built on small allotments, a form of housing which is less desirable at these densities than attached houses. Planning schemes may contain provisions to ensure that new dwellings on small sites in attached housing zones will be attached to each other, and specify an arbitrary minimum number of dwellings, say four, which would have to be built together. But this would again impose a straitjacket on imaginative designers. Moreover, it would necessitate a definition of attached. For instance, when two buildings are attached only over 1m length of their side walls, should they be considered to be attached?

On balance, it would probably be better not to insist on attached dwellings. Building regulations require all walls, except party walls, to be 900mm from side boundaries. An attached house can therefore use almost 2m more of the site width than a detached house can. On an 8m wide allotment this means the difference between a building 6m wide and one 8m wide, which in itself will attract town houses. Even if this regulation is amended to allow for walls without openings to be built on side boundaries (as is later suggested), the above argument still stands.

In most cases therefore town houses are likely to be built on small sites in areas without extra safeguards. Even when detached houses are built on a 250m<sup>2</sup>, zoned for small allotments, it is not likely to spoil the amenity of an area with the planned overall density of one dwelling per 250m<sup>2</sup>.

If councils allowed small allotments in medium-density zones, many more town houses would be on their own block of land, and would be classified as dwelling houses (a class 1 building) for the purposes of building regulations.

### Setback from Boundaries and Site Coverage Requirements under Building Regulations and Planning Provisions.

Before 1962 walls of dwellings without openings could be built on the side boundaries of allotments.

In 1962 Clause 48 of Ordinance 71 — now Ordinance 70, Clause 11.6(2), was amended to prohibit walls of dwellings from being nearer than 900mm to side boundaries. Party walls were, however, exempted

\* The provisions of a planning scheme which allow residential subdivisions to 185m<sup>2</sup> in some areas could over-ride Ordinance 70 which requires the minimum size of residential allotments to be 232m<sup>2</sup>.

### Walls on Site Boundaries

of housing appeared in New South Wales — the semi-detached cottage and the duplex house. When the former were built next to each other, they were little different from a row of terraces, except that each dwelling had openings in one of its sides, often 1m from the site boundary and 2m from the adjoining building. In the 1920s and 1930s semi-detached cottages were built in many intermediate suburbs because they were cheaper than detached houses and they used less land.



*Semi-detached house in a Sydney suburb.*

Duplexes are less numerous than semi-detached cottages in Sydney, but they are more dispersed over the metropolitan area. They were sometimes built to fulfil the needs of particular families; when for example, parents and children wished to live under the same roof but in different dwellings. Some duplexes resulted from conversions of large two-storey single residences, others had been built as



*Duplex house in a Sydney suburb.*

two-dwelling buildings.

### Influence of Overseas Housing

By the end of World War II the building of attached dwellings almost halted and most new dwellings were either houses or flats. In other countries at this time there was a great deal of experimentation with new housing forms, mostly at medium densities. Stepped, interlocking and overlapping dwellings were designed as solutions to the urban housing problem — in some places not even to reduce overall dwelling densities but merely to concentrate the open space normally fragmented around detached dwellings.

### Revival of the Terrace

About 1960, the inner Sydney suburb of Paddington, an area containing predominantly run-down terrace houses and considered a slum, experienced a revival. At first this manifested itself in the rehabilitation of a few dispersed dwellings, but during the following decade, rehabilitation spread and Paddington became a much sought after living area. The prices of terrace houses in Paddington rose suddenly and soon reached the level of detached houses of similar size. The spread of the revival movement into other inner suburbs brought about a change in the terrace house's image. Instead of being considered substandard and unsuited to modern needs, the terrace house was considered a convenient and desirable dwelling form. Its nearness to the city centre was regarded as an advantage which offset the drawback of the relatively small amount of space provided. A similar revival of inner suburbs occurred in Melbourne.

### Emergence of Modern Town Houses

This regained popularity for the terrace house led people to question why such housing, suitable to many relatively affluent families, should not be reproduced in a modern form. If families were willing to spend the effort and money to restore old buildings to modern standards of comfort, then they would surely welcome a new version of the attached dwelling combining the advantages of location and reduced land costs with the comforts of a modern building. Developers responded to this demand by building new versions of the attached house, which came to be known commercially as the 'town house'\* and the 'villa home\*\*.

Both town houses and villa homes are forms of row housing. The 'town house' is a direct descendant of the terrace house, having two storeys, with bedrooms upstairs and living area downstairs. In most cases a small private courtyard is attached. **Villa homes** are a particularly Australian style. They have evolved from the typical detached house: a group of villa homes is in fact a number of single-storey houses connected by garages and built on a large site, usually in a row at right angles to the street. In some Sydney examples they have no private courtyard, although there is nothing in their nature to prevent this. Groups of villa homes when viewed from the street are often indistinguishable from detached housing because only one dwelling can be seen.

*\*In this instance, 'town house' refers to a specific type of attached row housing as it has come to be known in Sydney and should not be confused with the term town house defined by this report (Section 1.1) as attached dwellings in general. Throughout the report, when 'town house' is used to mean a specific type of attached housing the word will be enclosed in inverted commas.*

*\*\*The term 'villa home' is likely to give rise to misunderstanding. Although the traditional meaning of 'villa' is a detached house in the country or suburbs, it is now being used in advertisements, general parlance and even council regulations to describe an attached form of dwelling.*

- habitable room density (in either habitable rooms per ha or its inverse, site area per habitable room)
- floor space ratio (ratio of built floor space to the site area)

### Allotment Sizes

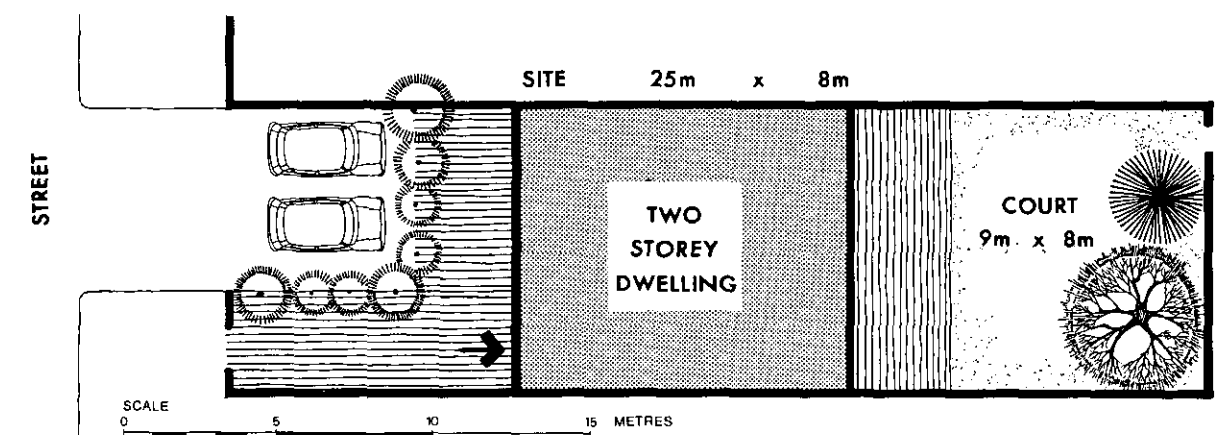
Ordinance 70 of the Local Government Act, 1919, empowers councils to fix the size of an allotment on which a dwelling may be erected, as long as it is at least 232m<sup>2</sup>.\* Standards adopted by almost all metropolitan councils, however, either in planning schemes or by resolution, greatly exceed 232m<sup>2</sup>, in some cases by up to five times as much. Since a large allotment is uneconomical for one town house, the usual practice is to build a number of town houses on a single allotment.

### Minimum Allotment

### Town Houses on Small Sites

Both the old and new forms of attached housing reveal that sites smaller than those presently allowed by councils are sufficient for town house development. While members of the Committee did not agree on the exact minimum allotment size for one town house, they generally conceded that this was somewhere between 200 and 300m<sup>2</sup>.

Taking the lower of these figures, a site of 200m<sup>2</sup> allows, for example, a two-storey dwelling of 140m<sup>2</sup> floor area covering 70m<sup>2</sup> of the site plus space for two cars covering 30m<sup>2</sup> of the site plus 100m<sup>2</sup> (or half the site) for courtyards, pedestrian access etc. Allotments smaller than 200m<sup>2</sup> may, however, result in substandard development, unless they are skilfully designed, since modern attached housing in Australia should provide ample open space and should accommodate two cars per dwelling on the site. Town houses which are overlapping, stepped or intertwining, or those which share open space, parking areas or roads, may have sites smaller than 200m<sup>2</sup>, but then they would not be on their own allotment.



*\* This does not apply to parcels in existence in 1942, which may be as small as 140m<sup>2</sup> and even smaller under certain conditions. The Clause also permits common garden or playground places within a subdivision to be credited proportionately to allotments abutting them under certain conditions, and thereby allows reduction below the prescribed minimum.*



## 5.3 ZONING PRACTICE AND REGULATIONS

### Zoning

Much of the success of town houses will depend on the size and location of areas zoned for them. If town houses are allowed in all residential zones, no detached housing areas could be preserved at low density. Yet there are areas of high environmental quality the characters of which are mainly dependent on their low densities. The preservation of such areas is important not only from the residents' viewpoint, but also from that of the whole community. On the other hand, there are many more areas of detached houses of indifferent character and low environmental quality where the only claim to preservation is low density. Such a claim should, of course, not be dismissed lightly: in some cases residents wish to retain an area's existing character even though outsiders cannot see anything worthwhile in it. It may be possible to introduce town houses in such areas, as long as the general height of buildings is preserved. Some residential areas would actually benefit visually and socially if some of their run-down dwellings were replaced by new town houses of similar height to existing development.

Area Suitable for  
Town Houses



Location of Town  
House Zones

A built-up area may be looked at as a collection of smaller sub-areas, which are of uniform character, or divided from other areas physically or socially. In planning, a decision must be made on which areas should be preserved, which should undergo minor change and which should change completely. Town houses are particularly suitable for areas where only slight change is intended. In new areas attached housing should be located near such focal points as transport facilities, shopping centres or beaches, but it may also be dispersed throughout all residential areas.

Zoning by Dwelling  
Types

The density constraint alone should define a residential zone. All types of dwellings should be allowed, as long as they fulfil this constraint (and any additional ones relating to height of buildings, landscaped areas, parking, etc.). This approach to zoning was advocated in Technical Bulletin 3 *Planning Control of Residential Development*.

Density Zoning

The basic objective of zoning should not be to segregate the types of dwellings but to group the intensity and height of residential development. It is better to zone areas by desirable development intensity rather than by dwelling type. The physical form of dwellings (in rows, interturning, overlapping or stepping) could then be left to the developer, who will in turn reflect the public's housing preference.

The intensity of use of a residential area is its population density. The intensity of development is its dwelling density. Although the density that appears on the zoning plan should be based on the desirable population density, it is not practicable to express it as population density because the number of people who will live in a proposed development is questionable.

A number of other measures may express density conveniently:

- dwelling density (in either dwellings per ha or its inverse, site area per dwelling)

## SECTION 2

## THE WIDER BACKGROUND

### 2.1 METROPOLITAN GROWTH

The greater part of Australian capital cities developed after the advent of the railway and the motor car. The size constraints active on older cities did not therefore strongly influence their growth — at least during this century. Moreover, a fully serviced block of land was not generally regarded as essential by home builders; until recently many people accepted the inconvenience of living without sewerage. Consequently new families were accommodated by the city's outward expansion.

Metropolitan  
Outward Expansion

Drawbacks of  
Low Densities

This form of development has disadvantages, especially in large cities such as Sydney. Homes and jobs are often far apart. Travel times increase and traffic congestion becomes a serious problem. While the problem of remoteness can be reduced by providing jobs and facilities in sub-metropolitan centres, there will still be people who either by need or inclination want to live near the major centre. In Sydney the construction of town houses in existing residential areas allows people to live close to the metropolitan centre and to the recreational assets of the coast.

Cost of Expansion

When town houses are built in existing residential areas they can make use of existing services and facilities. In new detached housing areas these must be provided. This increases the development costs and is passed on to the buyer. Lower income earners may thus find it even more difficult to buy a home.

Need for Higher  
Densities

The problems of low-density development indicate the need for accommodating at least part of the growing urban population at a higher density. Slight but widespread density increases, whether on the outskirts of cities or in established areas, would ease the pressure of outward urban growth substantially.

### 2.2 HOUSING CHOICES

Growth of Flats

During the 1960s and early 1970s there was a marked proportional increase of flats among new dwellings built in New South Wales. This flat boom signified a drastic change in the nature of housing choices. The 1960s was, however, not the first period of 'flat boom'; the 1930s were also a time of intensive flat construction. In the early 1970s about half the completed new dwellings in the Sydney metropolitan area were flats. In 1975-76, however, there was a big drop in the percentage of flats built.

Changing  
Housing Needs

People's housing needs vary at different stages of their lives. Often the pattern is for young people to leave their parents' homes earlier than was once the case and live in flats before marriage and in early married life. When they have children, families prefer to live in detached houses, at least until the children are grown and leave their parents' home. After that time a house and garden can seem unnecessarily large and difficult to maintain. For elderly people and especially for widowed homeowners, a move to a flat or unit is then

likely. There are many exceptions to this simplified pattern, but it represents the housing cycle of many people.

#### Role of Town Houses

Town houses can satisfy housing requirements during much of the above cycle. For many people neither the detached house nor the flat is really appropriate. In the future many more people are likely to want an alternative to the detached house. The steadily rising price of land makes savings in land area more and more important. Since town houses need substantially less land than detached houses, many families will be faced with a choice between a detached house far away from the city centre and the coast and a town house in a more convenient location. Some of them will probably forego a large garden and accept a smaller amount of private open space, if they can reduce the time spent in travelling.

#### Demographic Trends

Families appear to be declining in size. In 1911 the average household size was 4.82 persons. In 1976 it was 3.09 persons. Young people are leaving home earlier. More women are now in the workforce. There are increasing numbers of old people.

These factors, along with changes in recreation and entertainment patterns, suggest that fewer people will want large gardens, and that some of those who do, may not want them for as long a time. Housing requiring little maintenance is likely to become more popular. All this points to a need for a wider variety of housing choice.

### 2.3 EXAMPLES OF TOWN HOUSES FROM OTHER AUSTRALIAN STATES AND OVERSEAS

#### 1) Australian Capital Territory

#### The National Capital Development Commission

Town houses have been widely accepted in Canberra. However, the national capital is in many respects a special case. It is a new town, its land is publicly owned and is leased to users for 99 years. Its population is not typical of the Australian community. The planning body, the National Capital Development Commission, has more power and control on development than any other planning body in Australia.

#### Canberra Housing Survey, 1969

In 1969 the NCDC conducted a survey of housing preferences. Following completion of the survey it embarked upon a programme of building about 15 per cent of all dwellings as town houses, or group housing as all attached dwellings are known in Canberra. The survey was updated in 1976 and the NCDC has increased the town house proportion of the building programme to 25-30 per cent. The Commission has allocated land accordingly, built some of the dwellings itself and encouraged developers to build others.

#### Unit Titles Ordinance 1971

Canberra has no minimum subdivision sizes, and town houses on allotments with access to a public road and judged by the Commission to be of satisfactory size, may be owned under the same form of ownership as detached houses. However, when dwellings cannot be apportioned to individual allotments — for example, when buildings overlap or do not have access to a public road — their title is under the Real Property (Unit Titles) Ordinance of 1971. This Ordinance was introduced after a decade of experience of similar legislation elsewhere in Australia. It applies to multi-level and single-level construction.

## SECTION 5 PROBLEMS AND SOLUTIONS

### 5.1 GENERAL

A number of factors inhibit town house development, the most significant of these are:

- attitudes to town houses
- zoning practice and regulations
- problems of ownership
- problems of economics

These are discussed under the relevant headings in this section.

### 5.2 ATTITUDES TO TOWN HOUSES

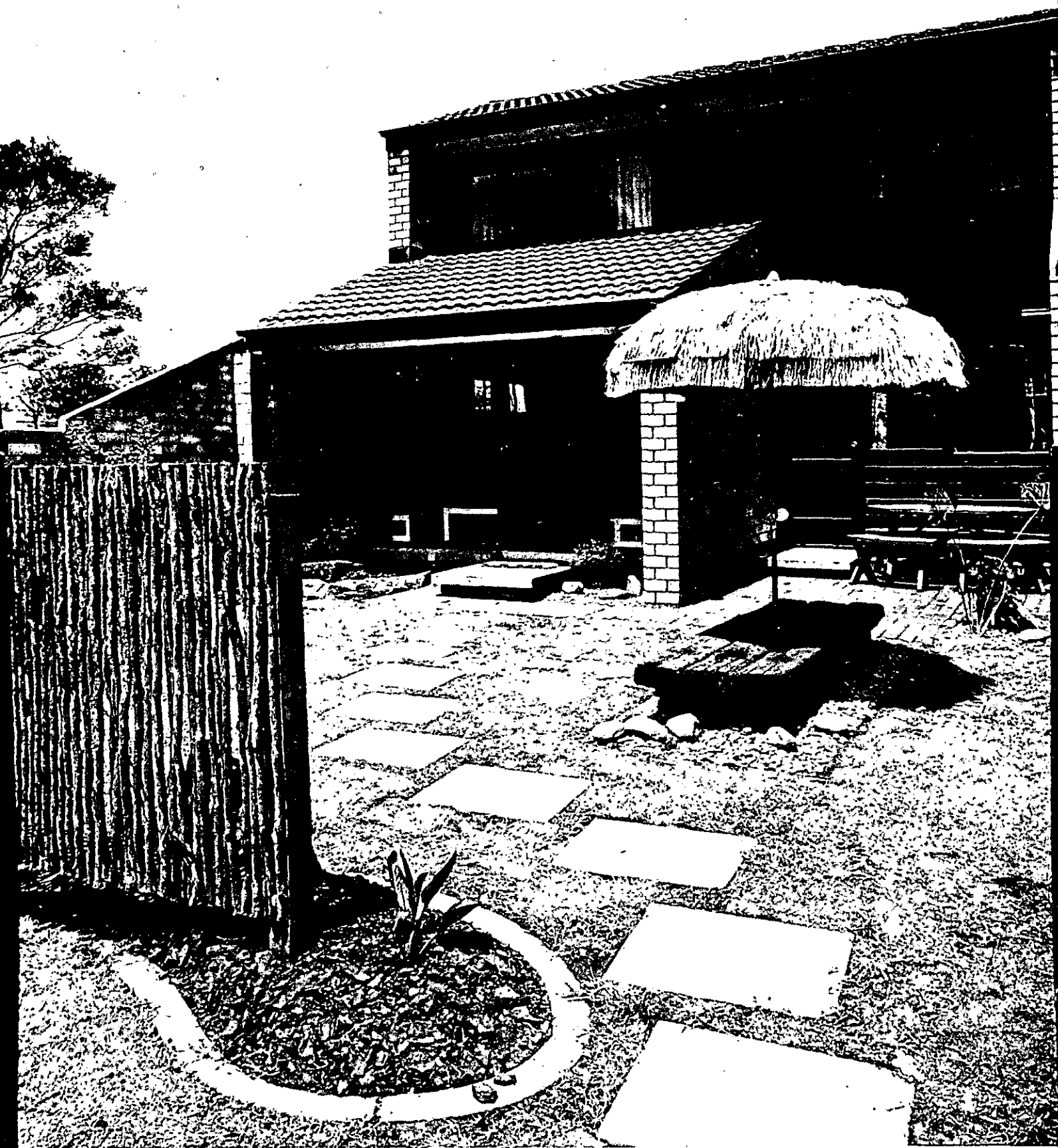
As there are still relatively few town houses in New South Wales and few people have lived in one, there is a general lack of understanding of what living is like in or next to one. People believe they provide less privacy and individuality than detached houses; there is concern that extra people will have an adverse effect on the environment. Yet, town houses need not disturb the quiet and privacy of detached dwellings in the vicinity, particularly if they are built to the same height, so that they do not cause the problems of overlooking and overshadowing associated with flats. Nevertheless, many people feel that if town houses are built near their properties, the values would be adversely affected. Such public attitudes are sometimes reflected in the collective attitudes of councils. During the 1960s the majority of local councils received applications to build town houses and had to decide whether to encourage or discourage such development, and, more particularly where to allow it. The fact that different local government areas reacted differently to the re-emergence of this housing form (See Section 4.1) shows the variation in councils' attitudes. Although most regard town houses as a desirable form of development with a role in the area's growth, they still do not agree on what this role should be.

#### Concern about Town Houses

#### Councils and Town Houses

At present, the majority of councils feel that town houses should be located in their own zone, and a number have established special zones for them. Another opinion holds that attached houses are suitable in most residential areas. According to this view, an attached house is not significantly different in appearance from a detached house; the privacy of adjoining houses is not disturbed because setback requirements are more stringent than for detached houses.

The zoning of whole areas for town houses does not make economic sense, since the sites which, because of their size and the age and condition of the buildings on them, are most suitable for redevelopment, are dispersed throughout a local government area. Some councils, although agreeing in principle with this view, believe that in practice there are many problems in allowing town houses in all residential zones.



Locksley Mews, Campbelltown.

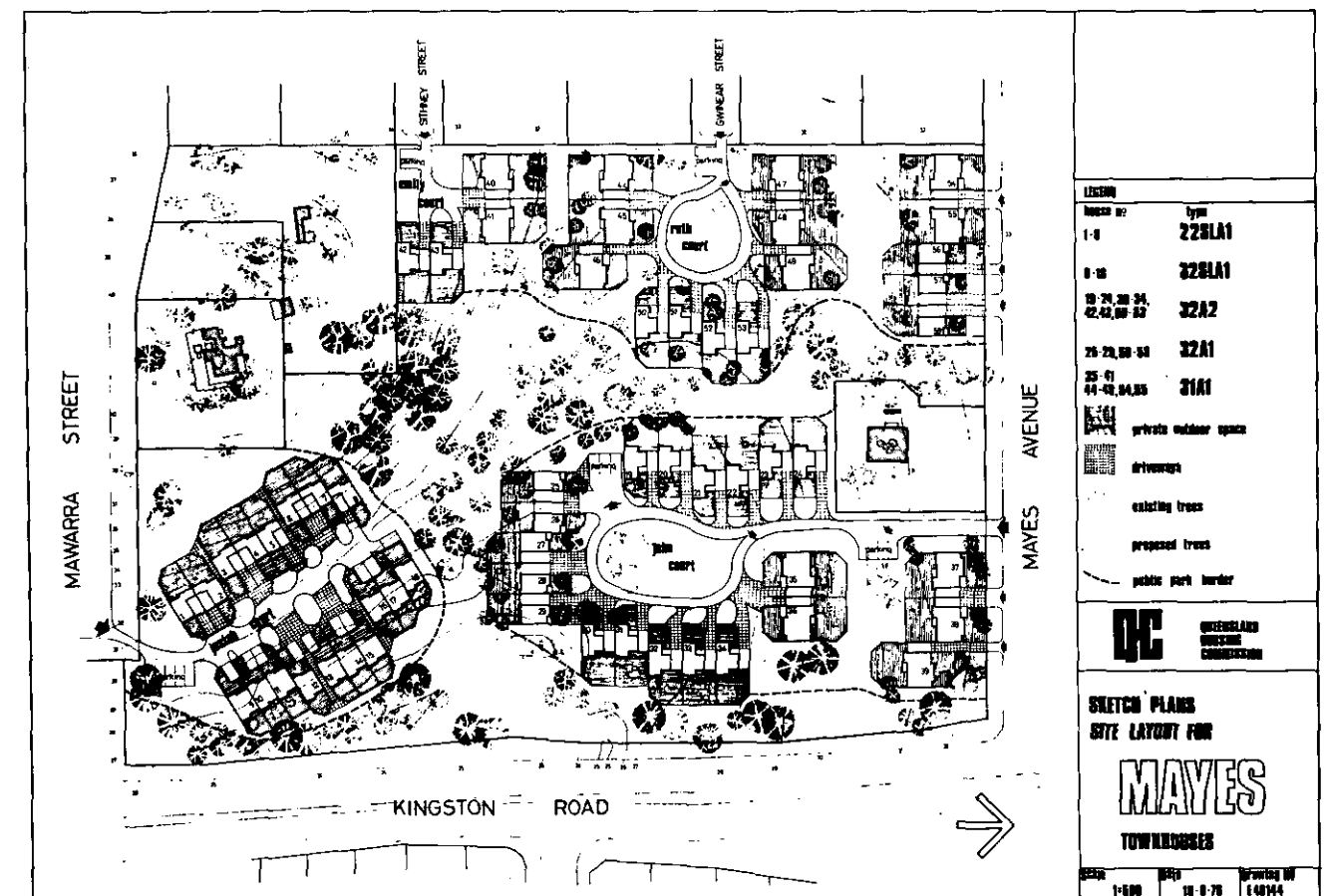
## High Design Quality

Land standards for town houses in Canberra are generous: there are usually 280m<sup>2</sup> of site area for each dwelling. This is, however, still less than half the land needed for detached houses. Canberra has been fortunate in the high quality of most of its town houses. As a result, Canberra residents know that they will live in a well-designed building surrounded by other well-designed buildings.

## ii) Queensland

### Few Town Houses

Queensland was slow to experiment with town houses. The first modern town houses were built in 1969. The introduction of the Group Titles Act of 1974 increased developers' interest in medium-density housing. In 1975, 10 town house developments were registered under the Act and in 1976 there were 110 developments registered. In 1976 the City of Brisbane Modified Town Plan recommended the construction of town houses as an alternative to walk-up flats and units.



A sketch plan for a town house development for the Queensland Housing Commission. (Courtesy Queensland Housing Commission.)

### The Housing Trust

### iii) South Australia

The most significant activity in the attached housing field in South Australia has been by the South Australian Housing Trust. The Trust has been building old people's accommodation in the form of attached dwellings for some time. In recent years the Trust has extended its activities to the inner area of the City of Adelaide. A major development (Manitoba) has been completed and several others are planned on land made available by the Adelaide City

Council. Since 1972 the Council has actively promoted residential redevelopment in the inner city. Under Interim Development Control it has permitted low-rise town houses at significantly higher densities than elsewhere in the metropolitan area. In the last five years over 200 such units have been developed.



*Attached housing in Marden, South Australia.*

#### iv) Victoria

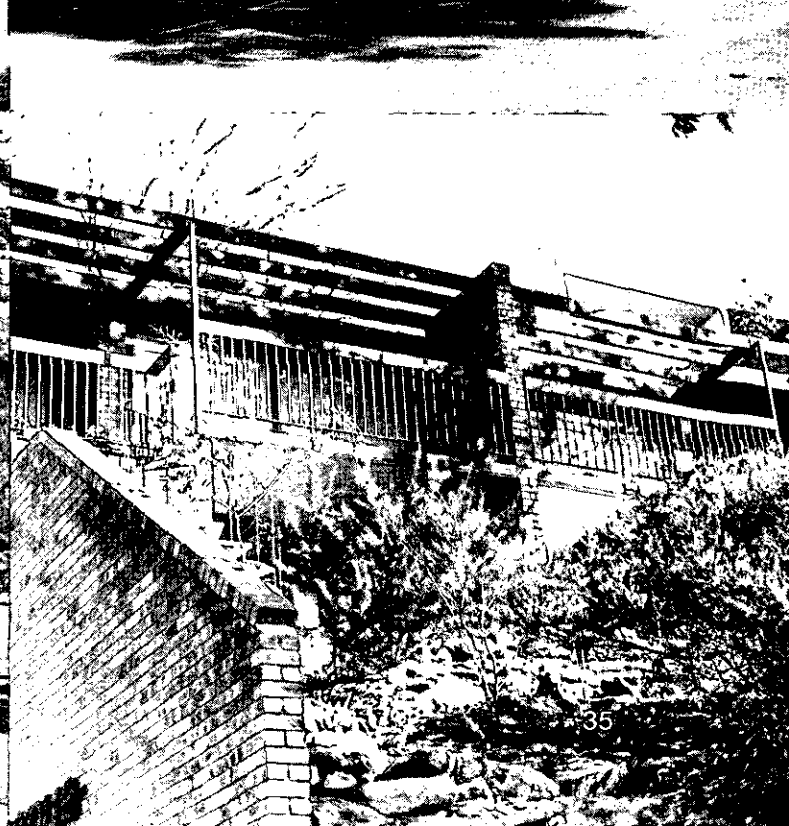
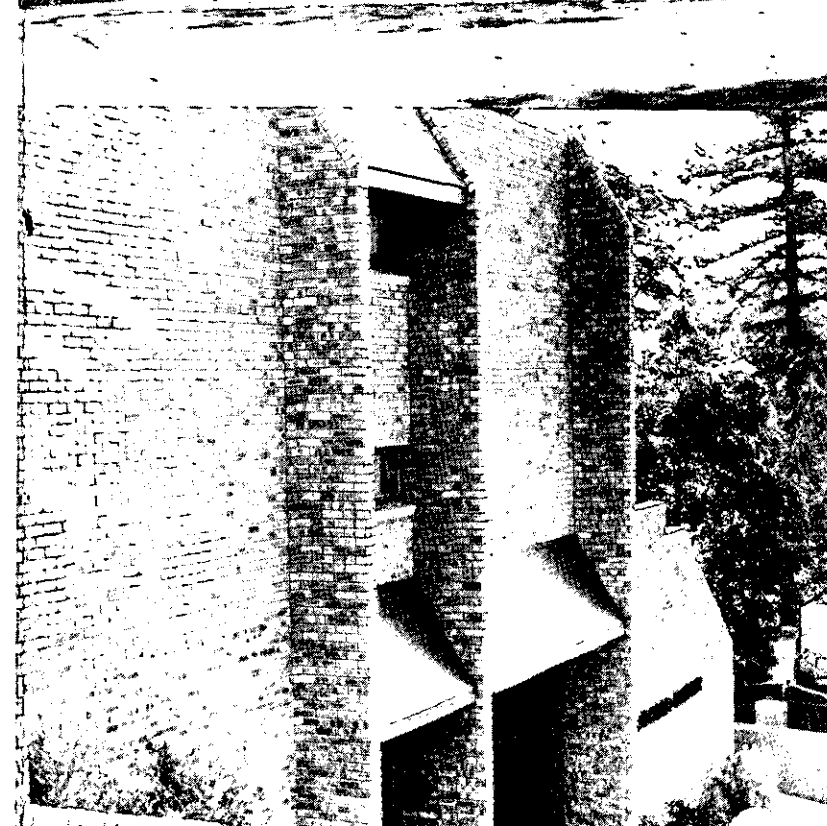
#### Town Houses and Villa Homes

New attached housing in Melbourne falls into three main categories. Town houses and villa units are the more established forms of low medium-density multi-unit development while cluster houses are a recent development.

Most villa units and town houses are in the municipalities of Caulfield, Brighton, Kew and Camberwell. Although opportunities exist elsewhere in Melbourne for medium-density development this housing form is relatively concentrated.



*Attached housing in Kew, Victoria.*





## 4.2 LOCATION OF TOWN HOUSES

### Terraces in NSW

Most town houses in New South Wales, both in old and new forms, are in the Sydney Region. There are a few old terrace houses in Newcastle and other early settlements like Bathurst, Morpeth and Maitland, but these are small in number compared to Sydney. Most new town houses have also been built in the Sydney metropolitan area.

### Terraces in Sydney

In the metropolitan area, the older attached houses are concentrated in the inner suburban ring surrounding the City of Sydney. It is believed that there are between 40-50,000 terrace houses in this area. Semi-detached cottages and duplexes are more dispersed and it is not possible to put even a rough estimate on their number. After the 1976 Census is processed we will have, for the first time, more detailed information about dwelling stock.

### Extent of New Town Houses

The first example of privately built town houses appears to be a group of 24 in Ocean Street, Woollahra, built in mid-1965. Between 1965 and 1970 1,600 town houses were built. In the same period 50,000 conventional flats were built. Attached dwellings constituted only about 3 per cent of total flat construction and about 1 per cent of total dwelling construction. Figures on the number of town houses built in the region since 1970 are not available, but in some areas more town houses have been built in recent years than any other dwelling type. In a number of other local government areas more town houses have been built in the 1970s than flats. For example 42 town houses were built in the Mosman municipality between mid-1965 and June 1970 compared with 1963 flats. In the period mid-1970 to early 1977, 84 town houses were built compared with only 62 flats.

### Location of New Town Houses

Large numbers of privately built town houses are located in the eastern suburbs, the lower North Shore and in harbourside suburbs. The Housing Commission has also built many town houses in the Macarthur Growth Centre and in the outer western suburbs. A study of town house location clearly demonstrates that the strongest single influence on this type of development is council zoning regulations and policies, not distance from the city centre.

*Town houses in the Sydney Region.*

### Zoning Practice

### Residential Planning Standards

### Early Development

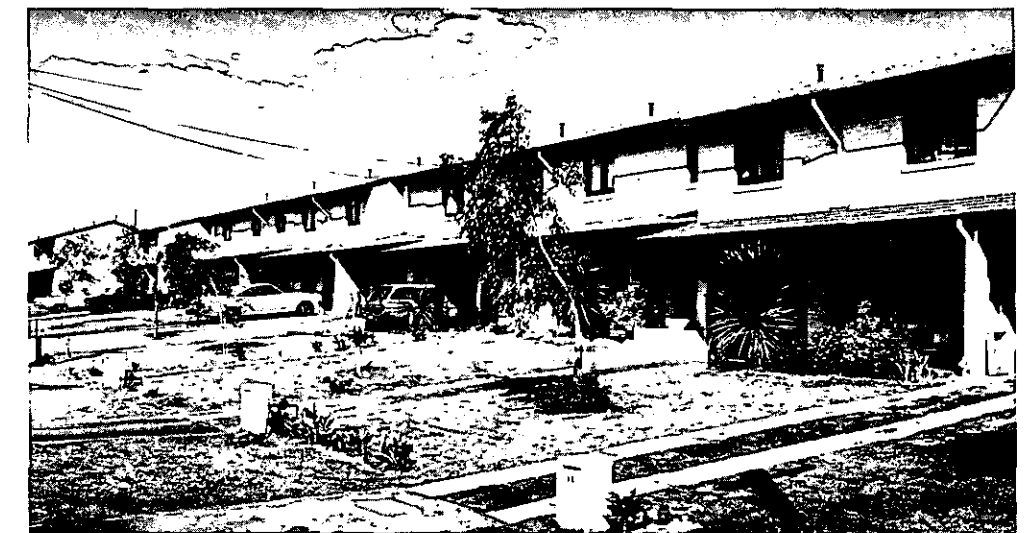
However, the Cluster Titles Act now makes large-scale comprehensive residential developments possible. Development of large sites in the outer suburbs of Box Hill, Dandenong, Doncaster and Croydon are attempts at bridging the gap between villa units and conventional detached housing.

Zoning practice in Melbourne differs from that in Sydney. Apart from some inner areas intended for high-density living, most residential land in Melbourne is zoned residential 'C'. This allows all kinds of dwellings including flats, attached and detached houses. The decision to approve a proposed development rests with the local council. Town houses and flats are occasionally built among detached houses and there is more mixing of dwelling types than in Sydney.

In Melbourne the formal introduction of a comprehensive range of residential zones or residential siting and development standards has yet to occur. Following receipt of a Technical Advisory Committee report in 1970 the Melbourne and Metropolitan Board of Works prepared a major amendment to the Metropolitan Planning Scheme to introduce the siting and development standards recommended in that report. This amendment is likely to be approved later in 1977. However, there has been no progress made with the introduction of new residential zones and ad hoc zoning policies continue to be implemented by local councils. The lack of certainty caused by this approach has served to discourage investment in attached housing. Nevertheless, the Cluster Titles Act has made attached housing developments in outer metropolitan areas and in provincial centres possible.

### v) Western Australia

Perth's inner suburbs, unlike those of Sydney and Melbourne, have only a few old terrace houses, dating mainly from the period of rapid population growth during the gold rush of 1890s. In the next 50 years, however, terrace housing declined in popularity, as it did elsewhere in Australia. The house on its quarter-acre block became nearly the only dwelling form.



*Attached housing in North Beach, Western Australia.*

## Appearance of New Town Houses

During the 1960s the rate of population growth rose again, and the consequent pressure on land and services led to the need for high-density living areas. Developers responded with a rapid increase in flat building.

## Zoning Practice

At present town houses in Perth may be erected in so-called General Residential Zones. In the Residential Development Codes adopted in 1966, known as the Clarke-Gazzard codes, town houses are specifically permissible in these zones if at least four dwellings are built together, and a separate subdivision is then permitted for sites over 185m<sup>2</sup>. However, town houses are at an economic disadvantage, since the codes allow more flats than attached dwellings to be built on a particular site. The 1966 Codes are being revised in the light of experience, changing attitudes, and the need to rationalize the needs of different local authorities. A draft of the revised code is with the Minister and a ministerial committee will advise on implementation. The draft code is based on the concept of density control, rather than building control, because the former is more flexible.

## Overseas

## English Example

The topic of town houses overseas is so large that only a cursory glance is possible here. Much benefit may be derived from looking at England, where attached housing has been built for many centuries, and where the best historic examples are to be found. After World War II public housing constituted up to 90 per cent of all new housing and even today, about one-third of English houses are built by the State.

## English Acceptance of Town Houses

The cost of land in a densely populated country such as Britain, and the need to contain the costs of public housing, resulted in most dwellings being attached houses or flats. As private developers took over more of the housing market, their projects were much influenced by the practices established by public housing. The regulations found to be inhibiting Australian town house development do not exist in England, and attached housing may be built in all residential zones. Because of this, housing types are much more freely mixed than in Australia. In English new towns which pioneered many new housing types, most dwellings are attached in some form.

## European Tenement

In Europe, wealthy city dwellers have always lived in town houses. However, after the Industrial Revolution most people were accommodated in flats in five- or six-storey blocks called tenements. A typical nineteenth century tenement was built around a paved central courtyard, the flats being entered from access balconies running around the courtyard at various levels. Playing space adjacent to these dwellings was either in the courtyard or the street.

## European Trend to Lower Densities

The present attempt by European architects and housing authorities to introduce town houses therefore represents a step towards less, rather than more, dense development. The question asked is not, as in Australia, 'houses or town houses?' but rather 'town houses or flats?'. The older parts of European cities have such high population densities that residential redevelopment can only be

legislation on a State-wide basis although a number of councils adopted the classifications of 'A' and 'B' flats. These appeared in planning scheme ordinances, such as Woollahra, Canterbury and Auburn.

In November 1972 the concept of density control for residential areas, irrespective of building type, was introduced by the Commission's publication Technical Bulletin 3 — *Planning Control for Residential Development*. Distinguishing between different types of residential flats was now unnecessary, if the council were prepared to leave the physical form of the building to public preference, provided it conformed to adopted densities. All planning schemes now contain density control provisions. Some councils, however, wish to retain the specific control relating to 'A' and 'B' classifications in order that they may exclude conventional walk-up flats from certain areas and instead allow town houses. Thus, in addition to density controls the Commission is currently including in some ordinances, at the request of councils, special sub-clauses permitting only development which corresponds to 'A' and 'B' class residential flat buildings. This applies in Liverpool, Bankstown and Burwood.

## Building Regulations

Building regulations as well as zoning techniques were unprepared for the town house. Regulations relating to houses differ from those relating to flats: in particular, site coverage in two-storey houses may be much larger than in two-storey flats. Furthermore, no State-wide regulations exist regarding the amount of private open space to be provided in a town house. Because flats are not required to provide any private open space, town houses have sometimes been allowed either with extremely small courtyards or without them altogether.

## Proposed Standards for Town Houses

The *Report of the Building Regulations Advisory Committee on Standards for Residential Flat Buildings* made certain recommendations relating specifically to town houses\*. In particular, it recommended provision for private open space at ground level for each town house, equal to at least half the total floor area of the dwelling, or 46m<sup>2</sup>, whichever is greater. The Committee also recommended that in any attached dwelling scheme, there should be an additional 28m<sup>2</sup> of unbuilt-upon land per dwelling for communal open space. While this report has no legal status, all or part of these recommendations have been adopted in some councils' codes for residential flat buildings. Other councils have passed special building codes relating to attached housing or even to one particular form of attached housing, such as Rockdale Council's code for 'villa homes'. Other councils have taken advantage of a standard clause in local planning scheme ordinances which allows them, when dealing with development applications, to consider detailed plans prepared for particular localities as well as flat codes adopted by resolution. Willoughby, Woollahra and Manly councils prepared such detailed locality plans for parts of their municipalities and these plans provide for town houses. Initially Manly Council specified dwelling densities for localities and Strathfield Council also adopted a method of zoning residential areas by densities, by means of an amended residential flat code. This leaves the form of future redevelopment open, but when the specified density is in the medium range, it ensures that town houses are profitable to develop as flats.

\* Referred to as 'group housing' in the BRAC Report.

could register under the Act, developments in which the dwellings were side by side. This enabled them to build, and sell under Strata Title, attached dwellings whose land area was below the minimum required by the local authority, or which had no direct access to a public road. The 1973 legislation did not change the situation.

Until about 1970 zoning techniques distinguished between only two kinds of dwellings — dwelling houses and residential flat buildings — and were unprepared for the new housing form. Consequently when town houses appeared, councils had to decide whether to treat them as flats or as dwelling houses. In areas still operating under the County of Cumberland Planning Scheme, it was possible to interpret the Scheme as allowing town houses without planning consent in areas zoned for detached houses. (The Land and Valuation Court, however, passed down a judgement in August, 1969 that town houses were a form of residential flats.)

#### **Councils' Response to Town Houses**

Councils responded variably to the new housing form. Some (in particular Canterbury, Rockdale and Ryde) allowed town houses in any residential zone. The majority of councils considered that town houses were more like flats than houses and permitted them only in flat zones. However, very few town houses were built in flat zones, because it was always possible to build more flats than town houses on a particular site. To overcome this economic problem a few local government areas created areas especially for town houses, and thus a third major type of residential zone was added to the previous two.

#### **Authority's Circular on Town Houses**

As a result of town houses being built in detached housing areas, the councils concerned, the then State Planning Authority and the Minister for Local Government received many complaints from residents. Subsequently the Authority sent a circular to councils stating that in its view town houses should not be allowed in detached housing areas, but should be directed into zones especially created for them. (A modification to this policy was later made by allowing 'duplex flats' in detached housing zones in some local government areas.) As a result, those councils which had allowed attached dwellings among detached houses, have changed their policy. In some cases this meant rezoning those detached housing areas in which town houses had been built for medium density.

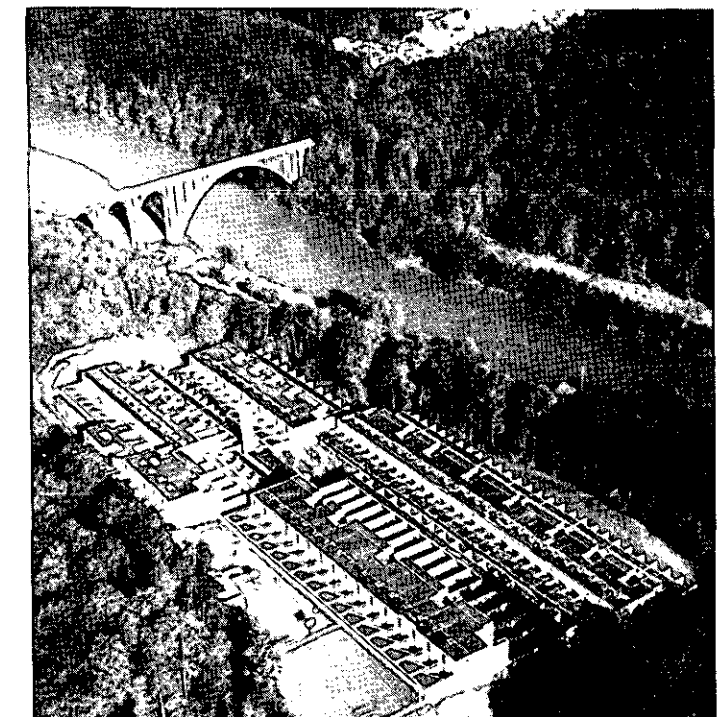
#### **Report on Residential Standards 1969**

In August 1969 the Building Regulation Advisory Committee published its *Report on Standards for Residential Flat Buildings*. The Committee's main purpose was to advise on changes to Schedule 7 of the Local Government Act (the regulations which govern the erection of flat buildings in New South Wales). Schedule 7 was introduced in 1940, at a time when no attached dwellings were being built in New South Wales. Since the Committee's deliberations coincided with the period when town houses began to emerge in Sydney, its review of the existing legislation included a study of town houses. The Committee considered that town houses were more akin to flats than to detached houses, and recommended that the existing classification of residential development into 'dwelling houses' and 'residential flat buildings' shall remain, and that there shall be six classes of residential flat buildings. Of these, Class 'A' shall include buildings containing two dwellings such as duplexes, maisonettes and semi-detached cottages (except where a semi is on its own allotment facing a public road) while Class 'B' shall include all other forms of attached housing such as triplexes, 'town houses', and villa homes (except where such dwellings are on their own allotment facing a public road). These recommendations were not incorporated in

economical if the new densities are also high. For this reason inner city redevelopment schemes almost always contain high-rise flats and town houses are usually found in new areas around cities and in new towns.

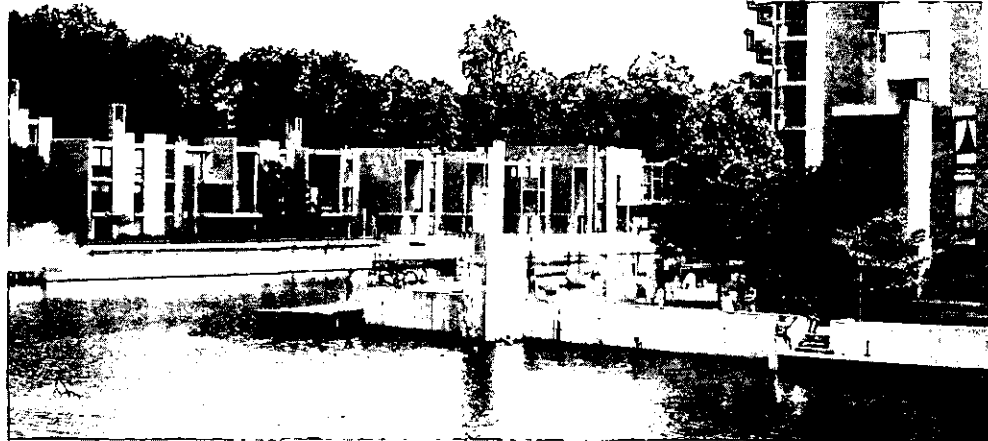


*Attached housing in Oxford, England. The compactness of the buildings allows for large areas of open space around them.*



*Attached housing at Halen near Berne, Switzerland.*

The traditional attached dwelling in the United States, like the Australian terrace house, has its origins in the country's colonial period. However, this century's main housing forms were the detached house in the suburbs and the apartment in the cities. More recently, the old attached house has been rediscovered resulting in the rehabilitation of run-down areas and the building of new town houses in such projects as Reston and Columbia.



*Town houses in an American new town — Reston outside Washington D.C.*

# SECTION 4

## TOWN HOUSES OF NEW SOUTH WALES

### 4.1 REGULATIONS AFFECTING TOWN HOUSES

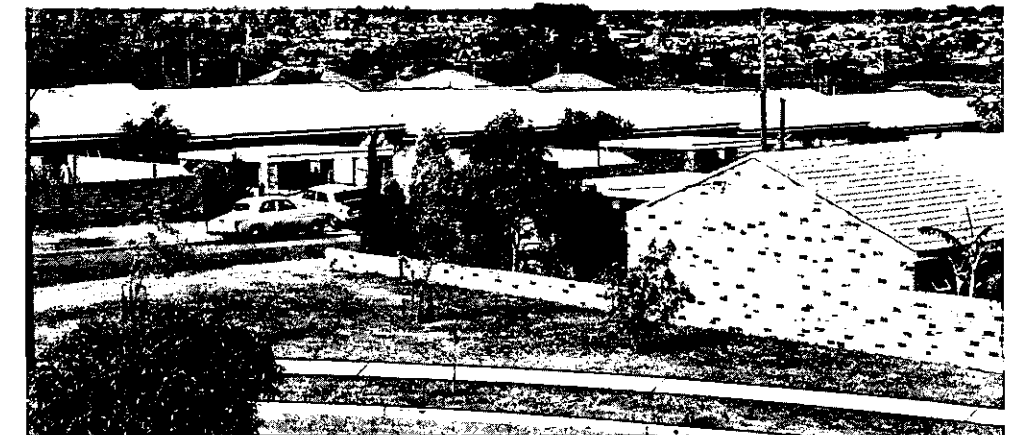
#### Minimum Allotment Sizes

In 1921, Ordinance 71 of the Local Government Act was proclaimed. This Ordinance became Ordinance 70 in 1972. It specifies the minimum size of dwelling allotments at  $360\text{m}^2$ . In 1922 this figure was reduced to  $232\text{m}^2$  — an area still much larger than the average terrace house site. However, the Ordinance allowed dwellings to be built on allotments between  $140\text{m}^2$  and  $232\text{m}^2$  which were already in existence. Thus terrace houses could still be built on land already subdivided at the time, and the minimum subdivision size of  $232\text{m}^2$  was small enough to make semi-detached cottages economical. These continued to be built in large numbers between the two world wars.

Individual councils, however, often set minimum allotment sizes in excess of  $232\text{m}^2$ . By the end of World War II, most local government areas required dwelling allotments to be at least  $465\text{m}^2$ . Thus, in effect, the only economical forms of housing in New South Wales were detached dwellings and blocks of flats.

#### Housing Commission

The Housing Commission pioneered the building of modern town houses building 39 attached dwellings at Riverwood in 1964. The project at Riverwood was not subdivided into legal allotments for sale but is occupied by tenants.



*Attached housing at Riverwood by the Housing Commission of New South Wales. Clarke Gizzard Yeomans — Architects*

#### Strata Titles

In 1961 the Conveyancing (Strata Titles) Act was passed in New South Wales. This Act proposed to enable people to own flats on freehold rather than Company title, thereby making it more attractive for finance institutions to grant mortgage loans to purchasers of flats. The Act was intended for multi-storey buildings where the subdivision was on separate levels, but developers found that by subterfuge\* they

\* The subterfuge may be a design in which the laundry cupboard of one house overlaps with the garage work-bench of the adjoining one.



## Total Costs

The above cost analysis indicates the saving in land and services in the town house scheme as against the detached housing scheme. The cost of land and services of a town house is \$3,350 less than that of a detached dwelling — a saving of about 37 per cent. This calculation assumes that the standards to which town houses are built are the same as those for detached houses. If higher standards are required the cost savings in town houses would be reduced.

### Cost Comparison between Detached and Attached Housing in Redevelopment Situation

#### Redevelopment Situation

The difference in cost between attached and detached houses in a redevelopment situation is in most cases equal to the difference between the costs of their land components, assuming that the existing services can cope with some increase in density.

#### One-Fifth Hectare

A 2,000m<sup>2</sup> site of 20 X 100m containing an old dwelling ripe for redevelopment may serve as an example. In some Sydney local government areas such a site could be redeveloped for one dwelling only because of the required 20m minimum frontage length. Assuming, however, that this restriction does not apply, the site may be subdivided into two allotments, one of them of the 'battle axe' kind, allowing two detached dwellings to be built.

#### Same Site for Six Town Houses

If the site were redeveloped for town houses, six single-storey courtyard houses may be built, each on a site of 250m<sup>2</sup>. This will allow parking provision for two cars on the site of each dwelling, visitors' parking and a 6m driveway along one side of the site.

Assuming that the purchase price of the site with the dwelling to be demolished, is \$75,000, the land cost of the two types of development will be as follows:

LAND COST	Two Detached Dwellings	Six Town Houses
\$75,000	\$37,500 per dwelling	\$12,500 per dwelling

#### One-Third Saving in Cost

Single-storey town houses are generally cheaper to build than detached dwellings, because of the party walls. However, if we assume that both the detached and the town houses cost \$30,000 to build, the total cost of the detached dwelling will be \$67,500, while that of the town house will be \$45,500 or about two-thirds the cost.

Admittedly the above calculation is somewhat theoretical because if the site is zoned for town houses its value would be higher than if it is zoned only for detached houses. It is impossible to take this difference into account because it would vary with the demand-supply situation with town houses.

# SECTION 3

## CHARACTERISTICS OF TOWN HOUSES

### 3.1 DENSITIES

#### Typical Densities in Sydney

Detached dwellings in the Sydney Region presently range in density from 5 to 20 dwellings per site ha.\* Many of the established detached housing areas, particularly the older intermediate suburbs, have densities of about 15 to 20 dwellings per site ha. Others, such as the suburbs of the upper North Shore, have only 7 to 10 dwellings per site ha and in some of these suburbs (for instance, Killara) densities of 5 dwellings per site ha are not uncommon. In the inner suburbs, which were developed before the motor car and where the majority of housing is in the compact form of attached dwellings, densities are much higher, about 50 dwellings per site ha. This results in population densities of 150 to 175 persons per site ha — a high figure considering that the buildings are only two storeys and most have private gardens.

#### TYPICAL DENSITIES FOR CORRESPONDING HOUSING TYPES

Dwelling Type	Population Density dwellings/ site ha	Dwelling Density persons/ site ha
Detached	7—75	2—25
Town Houses	60—220	20—75
Low-rise Flats	170—300	55—110
High-rise Flats	250—620	85—220

#### Densities of Town Houses

New town house projects have yielded densities between those of detached housing and the old terrace housing. Modern town houses are at lower densities than old terrace housing, because the site provides space for one or even two motor cars and the traditional 5m width of old terrace houses is now considered inadequate. New town houses often occupy 300m<sup>2</sup> of site area, and produce densities of 25 to 30 dwellings per site ha or about twice that of detached housing. It is possible, however, to design satisfactory town houses with only 200m<sup>2</sup> of site area per dwelling and achieve a density of 37 to 45 dwellings per site ha. Generally, net densities achieved by new town houses are about two or three times those in detached development, and about one-third lower than those of old terrace housing.

#### Overall Land Savings

The overall land saving achieved by town houses is not really as large as the above figures indicate. Non-residential uses such as kindergartens, schools, shopping centres, factories and hospitals still need the same area per person, no matter what the population density. Non-residential uses in the Sydney metropolitan area constitute a little over one-half of all land.\*\*

\* All densities in this section are based on site areas only, not including public roads.

\*\* Land in residential use constitutes 46 per cent of the urban areas within the Sydney metropolitan area. Source: Richard Cardew, *Residential Development Study — Residential Densities (Internal Report S.P.A.)*, 1967.

Redevelopment of existing detached housing which is of a density of one dwelling to 800m<sup>2</sup> into attached houses could result in a three or fourfold population increase on the same area of land, assuming the same occupancy rate. Where allotments are smaller the density could be doubled.

### 3.2 DIFFERENCES BETWEEN DETACHED HOUSES, TOWN HOUSES AND FLATS

#### Basic Similarity

Living in a town house is not appreciably different from living in a detached house since both are on or near ground level, do not share any part of the building with others and have direct access to private open space. Town houses usually have less private open space than detached houses, thereby reducing maintenance.

#### Some Differences

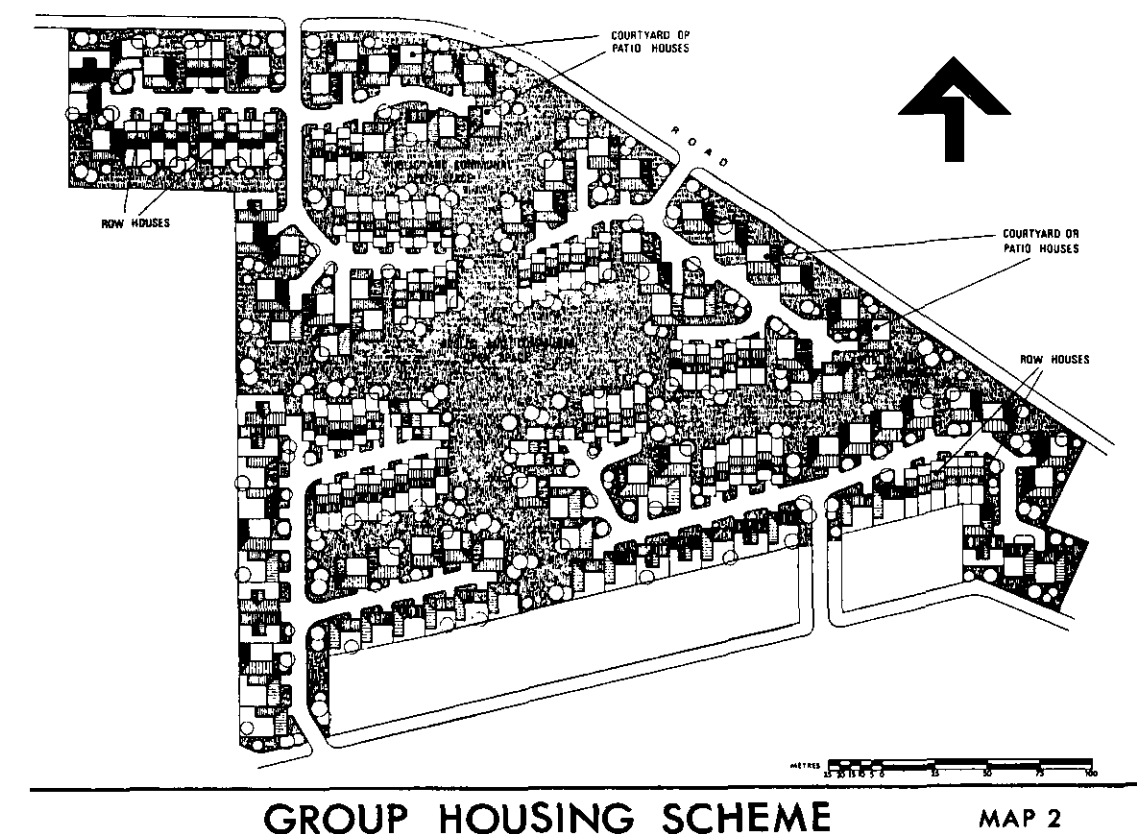
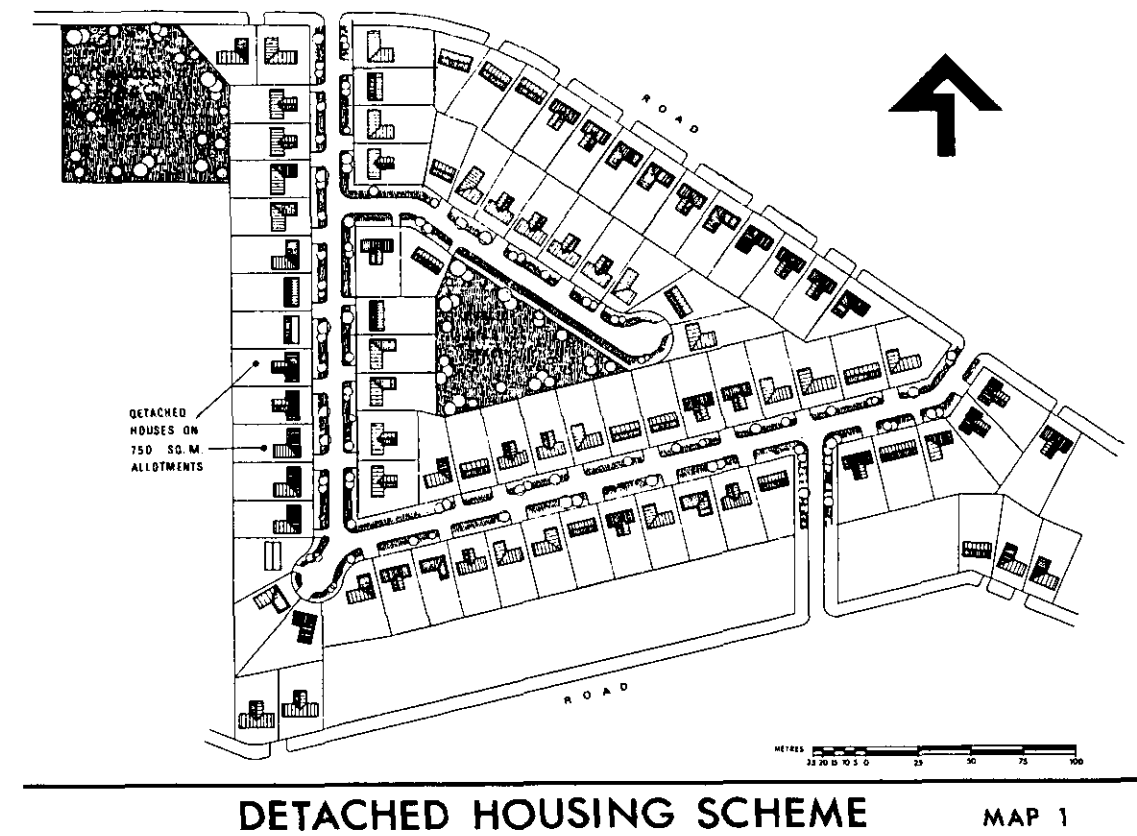
The significant difference between attached and detached housing is not so much the life style that can be enjoyed in them, but the degree of independence owners feel in regard to their property. Town houses are built together, usually by one developer or authority. The traditional Australian practice of buying a block of land and building a house on it is not easily achieved with town houses. Similarly the scope for future external alterations and additions is limited. Town houses can be designed with provision for future expansion, but such provisions must be pre-planned. In contrast, the owner of a detached house can buy a block of land in advance of his intention to build; subsequently he can build only part of his house and expand it as his family and income grow larger, even in ways which were not thought of when he bought the land.



*Each town house has a private courtyard opening on to an area of communal open space.*

#### Privacy

It is often said that town houses are less private than detached houses. But in fact the side walls of most detached houses are close, and when they contain windows, rooms often overlook each other and the noise from one house is clearly heard in the other. Attached houses, however, given good design, provide complete visual privacy on their sides. Moreover, a 280mm cavity wall (or equivalent) results in a greater sound reduction than do two typical windows when they are



**Building Cost  
And Density**

to pay for the required upgrading of services.

Savings in town house building costs can be achieved mainly by continuous roofing, use of party walls, shorter connections to services and other economies of scale. To reap the full benefit of such savings, however, a large number of town houses have to be built at the same time.

**Cost Comparison between Detached and Attached Housing in a New Area.**

**Detached Housing  
Scheme (Map 1)**

In order to compare the cost of detached and attached housing in new areas, two housing schemes, each based on one of these dwelling types, were designed and costed. The site is an undeveloped area of 8 ha in one of Sydney's outer suburbs (See Maps 1 and 2). The detached housing scheme has allotments of 750m<sup>2</sup> and a 15m minimum frontage. Internal road reservations are 18m. Four-fifths of a ha or 10 per cent of the area, are reserved for public open space. Eighty-seven allotments are accommodated on the site.

**Town House  
Scheme (Map 2)**

The attached housing scheme contains 93 single-storey courtyard houses and 85 two-storey row houses — in all 178 dwellings. Provision is made for parking two cars on each site and for visitors' parking. The dwelling sites, i.e. the area of building plus the private open space attached to the dwellings — are 250m<sup>2</sup> for the single-storey courtyard houses and 150m<sup>2</sup> for the two-storey row houses. The remaining 4.5 ha constitute communal open space and public open space. (These are discussed in Appendix B.)

Assuming a raw land cost of \$50,000 per ha the cost of developing these two different schemes on good building land are:

Component	Detached Housing Scheme (87 dwellings)	Town House Scheme (178 dwellings)
LAND		
8 ha \$50,000 per ha	\$400,000 or \$ 4,600 per dwelling	\$400,000 or \$ 2,250 per dwelling
SERVICES		
Roads, sewerage water, underground electricity, survey and engineering fees, council and Registrar General's fees	\$374,000 or \$ 4,300 per dwelling	\$587,000 or \$ 3,300 per dwelling
COST OF LAND AND SERVICES	\$ 8,900 per dwelling	\$ 5,550 per dwelling

The calculations were originally made by a large firm of developers in 1971 under the supervision of the Institute of Real Estate Development's representative on the Committee and updated in 1977 by the PEC's Valuation Section.

**Flats**

closed, and much greater than when they are open.\* Courtyards can be given seclusion by skilful design and the use of screen walls and planting. In addition to such courtyards, town houses sometimes provide communal open space, offering the residents an opportunity to share outdoor activities with their neighbours.

Flats provide a different style of living than detached or attached housing. The main characteristics distinguishing them from other dwelling forms are:

- most flats are not on ground level
- they usually have no private open space other than a balcony
- they are usually at higher densities than other dwelling forms
- they are entered through some communal entry space

These attributes mean that flat living and house living appeal to different types of people at different stages of life.

**3.3 SOCIAL AND OTHER IMPLICATIONS**

Flats and town houses differ not only from the viewpoint of their occupants but also from that of people living around them. Until recently, residential redevelopment has always meant the replacement of houses by flats. Because flat buildings are usually higher than

**Environmental  
Changes Caused  
by Flats**



Flats replacing houses bring about a great change in the scale of the environment.

\* The acceptable noise rating value (NR) inside a suburban bedroom at night is generally NR 20–25. A radio played at average volume would be about NR 75 in the room where it is played. In a detached house with windows of 6mm glass the noise rating value in the garden next door would be as follows:

With the window closed	NR 50
with the window opened 300mm	NR 60
with the window opened 1m	NR 75

Inside the house next door (assuming it is a detached house with windows of 6mm glass), the following noise rating values would be expected:

With both windows closed	NR 30
with both windows opened 300mm	NR 45
with both windows opened 1m	NR 75

In two attached houses connected by a 230mm solid or a 280mm cavity wall, the noise rating value in the house next door to the radio would be NR 25.

one-family houses, they cause hitherto private gardens to be overlooked, sunny areas to be over-shadowed, and generally bring about an abrupt environmental change. As a result, most people living in detached houses do not want flats built near them, and many councils tend to restrict flat development to particular areas. Because flats attract particular sections of the population (single people or married couples with one or no children) redevelopment of an area also results in the replacement of large families by smaller households. This segregation of the community into age groups and family types results in uneconomic use of existing facilities, so that, for example, in one area schools may be under-used and hospitals overcrowded, and in another area the opposite may occur.

#### Town Houses Cause Less Change

When town houses replace single houses, fewer of these difficulties arise. Town houses are almost always one or two storeys, a height involving less change in traditional Australian domestic living. Town houses suit a wider variety of family types than flats and a modest degree of town house development does not abruptly change an area's social characteristics. It appears that town houses cause less resentment among long-time residents than flat development. Basically, there is a need to establish a situation in which as many people as possible have the opportunity to enjoy the convenience and amenity of a city without increasing densities to the point of destroying that convenience and amenity. Medium-density housing may fulfil this need.



*Town houses, although more dense than the detached dwellings around them, do not greatly change the existing scale of an area.*

#### Role of Old Terraces

Terrace housing in Sydney's inner areas achieves high density while providing private open space for each family. Higher densities can usually only be achieved by redevelopment with high-rise flats, but controversy surrounds such developments. When high-rise flats replace terrace housing, communities are dislocated and an interesting building style is destroyed along with attractive townscapes. High-rise buildings are also criticized on social and aesthetic grounds.

#### Physical and Social Effects

It is difficult to say anything definite about the relationship between physical layout and social interaction because there has been insufficient research into the subject. It may be, for instance,

*bull: it changes from place to place, time to time, people to people.*

that people form friendships when they are gregarious, no matter what style of house they live in. Most available data indicate that associations result more from family, professional, ethnic or other affinity than from living close together. Nevertheless, it is likely that where people of similar interests and values live in compact housing more associations would be formed than when living at low densities.

However, at the other end of the density scale, sociologists investigating families living in high-rise blocks of flats, which are usually in the high-density inner areas, have found that the complete lack of private open space puts a strain on normal family life. Town houses provide some private open space for each dwelling, and would probably be preferable to flats for most families with children.

#### Transport

Town houses can unquestionably make a difference to the use made of public transport. The densities of conventional detached housing allow neither an economic transport system nor a safe pedestrian system. Twelve houses per ha can only be served efficiently by the private motor car. Some families do not have a car, others have only one which the husband may take to work, leaving wives and children stranded. An alternative is to acquire a second car, which increases the proportion of income spent on private transport. A reliable bus service is easier and more economical to operate in areas of medium rather than low density. (Similarly, pedestrian ways and underpasses taking children to schools are more economical at increased densities.)

### 3.4 THE ECONOMICS OF VARIOUS HOUSING FORMS

#### Cost Components

The total cost of housing development may be broken into components, each of which responds differently to changes in density. The three main components are: land, utility services, and building.

#### Land Cost and Density

The land cost is inversely proportionate to density. When two dwellings are built on one site, their land cost will be half that of a single dwelling on the same site. The greatest savings by increased densities are therefore achieved where land is expensive.

The above is true only if the value of land does not vary with the form of development permitted. In practice, however, land values are very much affected by zoning. So, for example, the price of land in a Sydney suburb varies according to whether detached houses, attached houses, low- or high-rise flats can be built on it. This is of great importance, since much of the financial benefit in using less land per dwelling can be lost if the price of land rises as a result of higher densities being permitted.

#### Cost of Services and Density

The cost of services for residential land is related more to the size of the area serviced than to the number of people using the services. For this reason the closer people live together, the less it costs to provide services for them. In built-up areas these services already exist and usually have the capacity to accommodate substantial population increases. Generally when detached houses in established areas are redeveloped for town houses — i.e. the density is increased from about 12 to between 25 and 37 dwellings per site ha — the existing services are sufficient to cope with the change. In places where investigation indicates a major increase in services, it can be anticipated that service authorities would need contributions