



# A Comparison of Built Form Outcomes between Retirement Villages and Residential Developments

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## **Acknowledgements**

The Property Council of Australia has allowed limited access to anonymised information from recent retirement village census data.

CoreLogic has provided access to Cordell Connect which has provided information on the properties in the case studies.

## Executive Summary

### Rationale for the Research

Increasing residential prices in most major Australian population centres have led to residential developers paying a premium for development sites. Retirement village operators report that they are being priced out of the market by the activity of these residential developers (RPS, 2016).

Retirement village operators have acknowledged that increased densities for retirement village development compared to residential development is one way of levelling the playing field. To some degree this is being done by the State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in NSW. This research examines the built form outcomes of both retirement villages and residential developments enabling comparison of the two different types of property. The results can inform policy and further research.

### Introduction

This research is based on a series of case studies where two nearby and recently constructed properties, a retirement village and a residential development, are compared on a series of built form outcomes. The case studies are based in New South Wales (NSW) and Queensland (QLD) and are listed in Table 1.

Table 1: Case Study Locations

Suburb	State	Municipality
Sutherland	NSW	Sutherland Shire Council
Waitara & Asquith	NSW	Hornsby Shire Council
Lutwyche	QLD	Brisbane City Council
Woolloongabba & Greenslopes	QLD	Brisbane City Council
Pelican Waters & Kings Beach	QLD	Sunshine Coast Council
Bilinga & Coolangatta	QLD	City of Gold Coast

The research provides evidence-based understanding of how the built form differs between retirement villages and residential developments. A comparison can be made on a like-for-like basis by examining actual outcomes of two recently constructed properties located close to each other.

This research has identified differences between the two types of property. These include the size of apartments, the relationship between the net apartment area and the gross floor area (referred to as the efficiency ratio), features of car parking, floor height, community facilities and, in addition, the anticipated population in each property.

### Size of Apartments

There was some difference noted in the size of apartments between retirement villages and residential developments. Areas for one-, two- and three-bedroom apartments for all case studies are summarised in Chart 1 and Table 2.

Table 2: Average Size of Apartments

Case Study	Property	1 Bedroom	2 Bedroom	3 Bedroom
1	Sutherland Retirement Village	74m <sup>2</sup>	96m <sup>2</sup>	118m <sup>2</sup>
	Sutherland Residential Development	54m <sup>2</sup>	85m <sup>2</sup>	129m <sup>2</sup>
2	Waitara Retirement Village	72m <sup>2</sup>	102m <sup>2</sup>	
	Asquith Residential Development	66m <sup>2</sup>	78m <sup>2</sup>	101m <sup>2</sup>
3	Lutwyche Retirement Village	61m <sup>2</sup>	82m <sup>2</sup>	114m <sup>2</sup>
	Lutwyche Residential Development		79m <sup>2</sup>	
4	Woolloongabba Retirement Village	62m <sup>2</sup>	82m <sup>2</sup>	111m <sup>2</sup>
	Greenslopes Residential Development	54m <sup>2</sup>	83m <sup>2</sup>	
5	Pelican Waters Retirement Village		106m <sup>2</sup>	133m <sup>2</sup>
	Kings Beach Residential Development		87m <sup>2</sup>	122m <sup>2</sup>
6	Bilinga Retirement Village	74m <sup>2</sup>	104m <sup>2</sup>	136m <sup>2</sup>
	Coolangatta Residential Development	65m <sup>2</sup>	81m <sup>2</sup>	

The differences between retirement villages and residential developments are nuanced, making simple conclusions about size problematic. These case studies demonstrate there are examples where units in retirement villages are larger and where those in residential developments are larger. Considerable variation in average sizes was also noted between the case studies. Such geographical variation indicates different housing markets in different locations.

One-bedroom apartments are consistently larger in retirement villages compared to residential developments. A feature noted when examining the building plans is that bathrooms, bedrooms and living rooms in retirement villages are more accessible and hence larger compared to those in residential developments. Accessible bathrooms are larger as they require manoeuvring room for a wheelchair and sufficiently sized shower recess.

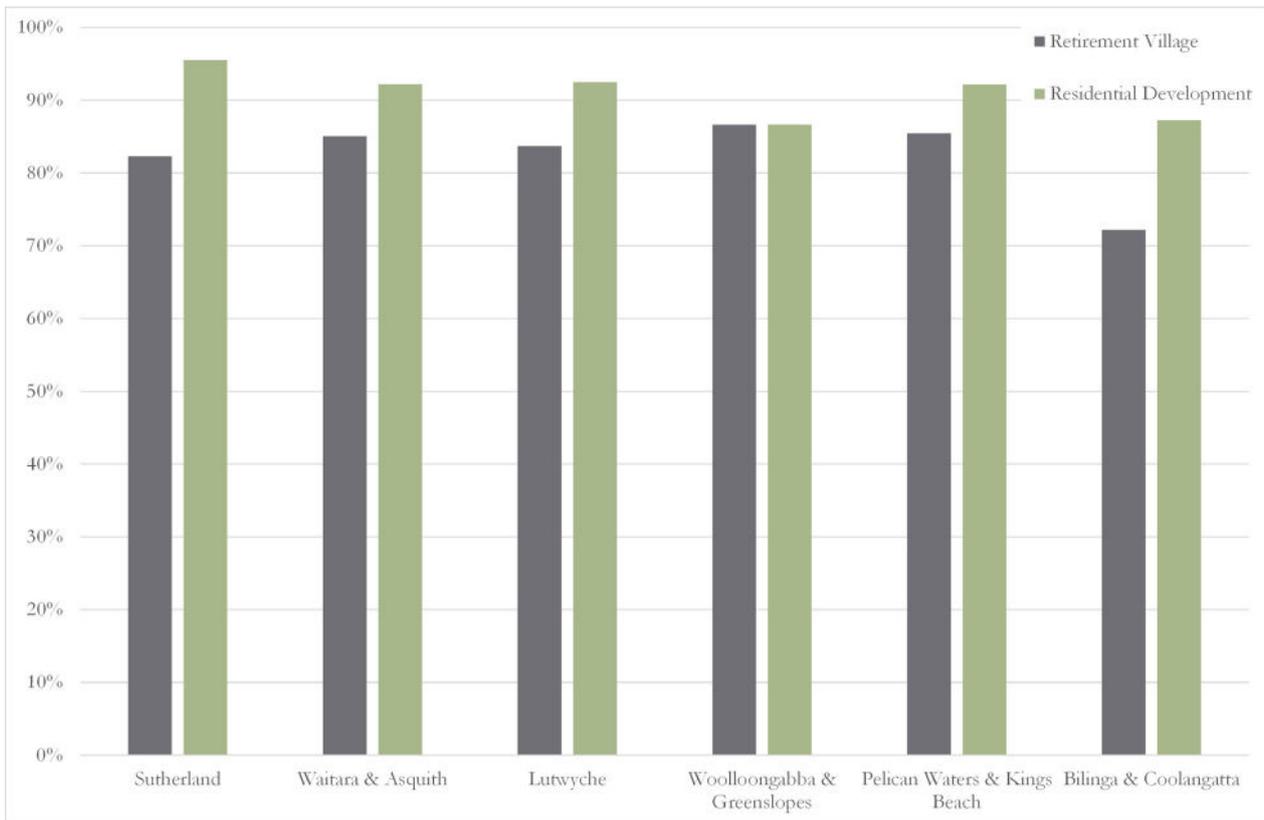
Two-bedroom apartments are comparatively larger in retirement villages for five of the case studies. Case study 4 has two-bedroom apartments that are slightly larger for the residential development. Two-bedroom units in the retirement village feature a combination of one or two bathrooms, whereas those in the residential development are all two bathroom. This results in the difference in size.

Only two of the case studies have three-bedroom apartments in both property types. These units are larger in one retirement village and larger in one residential development. Retirement village operators and residential developers produce product for a local target market and the size of individual apartments reflects the variety within each target market.

### Efficiency Ratio

Retirement villages differ in their design of apartments and common areas compared to residential. This difference has been examined by calculating the ratio between the net internal area of apartments and the Gross Floor Area (GFA). This has been referred to as the Efficiency Ratio and is summarised in Chart 1.

Chart 1: Efficiency Ratios



Retirement villages have, in general, lower efficiency ratios compared to residential developments. The retirement villages in the case studies contained features which, compared to residential developments, reduced this ratio. These features include community facilities, number of lifts, width of corridors and design features.

A feature of retirement village living is the community facilities, which encourage residents to engage in social and physical activities. All the retirement villages examined have some form of community facilities, including multipurpose rooms, gymnasiums and dining areas. Some of the retirement villages in the case studies comprise buildings that are part of larger campus/co-located developments where community facilities are situated in other buildings. Nonetheless, each of the case studies has some form of community facility not found in the residential developments. This reduces the total area available for individual apartments and the efficiency ratio.

The number of lifts is important to older people. This group is mindful that when living in a high-rise building and the single lift breaks down, they are essentially stuck in their apartment. Therefore, they have a preference for a building with two lifts (Bleby, 2017). In catering to this group, the case studies show that some operators prefer multiple lifts. Case studies 1, 3 and 5 have multiple lifts in the retirement village compared to single lifts in the residential development. Case study 6 has the same number of multiple lifts for both property types. Case studies 2 and 4 are retirement villages in campus developments with multiple towers and co-located residential aged care. These have single lifts for each building in contrast to the residential developments which have two lifts in a single building.

Older people have additional requirements for access, particularly for wheelchairs and stretchers. Although information was not available on all properties, wider corridors were observed in the retirement villages compared to the residential developments.

Comparing the building plans of retirement villages and residential developments a number of differences in the design features are noted. The layout of units in retirement villages are more likely to have designs maximising the internal usable living area. This is in contrast to the residential developments which maximise the internal living area while reducing the common corridor space. Retirement villages have wider and longer corridors in the common areas, these allow the internal design of apartments to maximise the usable space. Residential developers maximise internal apartment areas while minimising common corridor space. This results in apartment designs with 2 – 3-metre-long hallways in individual units connecting the external door with the general living space. This hallway added to the overall area of the apartment although it was not necessarily usable.

### Car Parking Features

Retirement villages and residential developments are (usually) assessed under different planning legislation, therefore car parking requirements differ between these property types. This research examined a further feature, namely the size of car bays in the two types of development.

This information was not always available. It was noted that some of the retirement villages did feature a wider and deeper car bays and some of the residential developments did have smaller car bays.

### Floor Height

A difference in floor heights was noted between retirement villages and residential developments. This is a proxy for floor to ceiling height and this information was collated for the ground floors and for upper levels. The floor heights for each case study is summarised in Table 3.

Table 3: Floor Height

Suburb	Retirement Village	Residential Development
Sutherland	Ground 3.3m, upper floors 3.1m	All levels 3.1m
Waitara & Asquith	All levels 3.2m	Ground and upper levels 2.9m, penthouse level 3.0m
Lutwyche	Ground 3.75m, upper floors 3.0m – 3.18m	All levels 3.0m
Woolloongabba & Greenslopes	Ground floor 3.25m, upper floors 2.75m – 3.125m	Ground floor 4.0m, upper levels 3.0m
Pelican Waters & Kings Beach	Ground floor 2.85m, upper floors 2.8m – 3.05m	Ground floor 2.9m, upper levels 2.8m
Bilinga & Coolangatta	Ground floor 3.5m, upper floors 3.0m, penthouse level 3.15m	Ground floor 3.61m, upper levels 2.95m

Ground floors of multilevel buildings provide an entrance statement to the property and multilevel retirement villages usually have community facilities on this ground floor. While there were exceptions noted, generally floor heights for ground levels in retirement villages are greater compared to residential developments. With case study 6 the ground level of the residential development is flood affected requiring a greater floor height. Similarly, floor levels for upper levels are generally greater in retirement villages when compared to residential developments.

## Estimated Population

A further way of examining the built form outcome is to compare the anticipated population of each property type. The population of retirement villages is restricted to a subset of the population, namely older people. It can be anticipated that the population density for retirement villages is different from residential development. Each case study compares the estimated population as measured by number of people in individual apartments for the retirement village and residential development. The population density for retirement villages is established at 1.3 – 1.4 persons per apartment (Page 9) and is used throughout this document. The population density for each residential development is summarised in Table 4.

Table 4: Estimated Population Density

Property	Population density
Sutherland Residential Development	1.75
Asquith Residential Development	2.3
Lutwyche Residential Development	1.6
Greenslopes Residential Development	1.8
Kings Beach Residential Development	1.0
Coolangatta Residential Development	1.3

Considerable variety is noted in the population density of each case study location, which reflects the type of people living in residential developments in that area. For four of the six case studies the population density is higher, which reflects more family groups and larger households.

The two case studies in the Sunshine Coast and Gold Coast regions of Queensland have lower population densities. These are both holiday destinations and, in part, this lower density reflects that properties are not necessarily occupied all year round. These variations highlight how general residential housing is used differently in different locations.

### Discussion and Further Research

This research has highlighted differences between retirement villages and residential developments and there are nuances in the built form outcomes of both these property types. There are differences in both property types in different locations, with clearly different target markets.

### Acknowledgements

This research was motivated by a comment while doing interviews for my PhD research. A town planner commented that retirement village operators “were always complaining that they needed higher densities to compete with residential development. I have yet to see any evidence-based research to support this case”. This research has responded to feedback from those in industry.

## **Data and Methods**

### **Data**

Information on individual developments has been sourced from publicly available online information. This includes local government development and planning documents (sourced through local government websites), architectural drawings (sourced from architectural organisations), retirement village operators (sourced from websites) and developers (sourced from websites).

A full list of sources of information is contained in the references section.

### **Ratio of Site Area and Gross Floor Area**

The floor space ratio (FSR), or ratio of gross floor area (GFA) to site area measures the density of the development. As many of the case studies comprise two different zonings for the retirement village and the residential this comparison has been included for information only.

### **Apartment Yield & Level of Accommodation**

Retirement village operators and residential developers provide accommodation to meet a market. These properties can be expected to have differing apartment yields and a different proportion of levels of accommodation (number of bedrooms).

### **Internal Apartment Area & Gross Floor Area**

Similar to apartment yield and level of accommodation, the size of individual apartments and the efficiency ratio can be expected to reflect the market for each of those property types and aspects of each development. Both average and median apartment sizes have been calculated, as there are often outliers (large and small).

The efficiency ratio has been determined by dividing the net internal area of apartments by the GFA. The differences in efficiency ratio between retirement villages and residential development reflects the differing levels of community facilities for each and wider corridors and a greater number of lifts per building for retirement villages.

### **Community Facilities**

A feature of retirement villages is community facilities which provide opportunities for social interaction, organised activities and exercise. Community facilities in residential developments can include gymnasiums, swimming pools and barbecue areas.

### **Car Parking**

Both retirement villages and residential development have basement car parking. This is influenced by requirements under the development approval and what is being demanded in the market.

Car parking differs between the two types of property in terms of the size of individual car bays, space to allow vehicle manoeuvring between opposite car bays (referred to as the manoeuvring distance) and the number and proportion of wheelchair accessible car bays. These features have all been taken into account when making comparisons.

It is not considered realistic to compare purely the number of car bays, as these further features need to be taken into consideration.

## Other Features

Additional features were noted in both property types; however, they were not universal. Residential development can have bicycle parking in the basement; retirement villages have mobility scooters charging stations. These features all take up space and have been noted for both property types.

A feature found in one of the retirement villages was an ambulance car bay in the basement providing all weather access for emergency vehicles.

Where retirement villages are co-located on a campus with residential aged care, the basement car parking connected all buildings. This provides all weather access between buildings for staff and residents.

## Floor Height

Floor height was taken from architectural plans and is the vertical distance between floor levels. Completed buildings will have a shorter distance measuring the floor to ceiling height on individual levels, this was not available.

## Estimated Population

Retirement villages are limited to those aged 55 and older who are no longer working full-time. Many operators make further qualifications on new residents including being older than higher benchmark ages. Consequently, households in a retirement village comprise a single person or a couple. This is in contrast to apartments where households comprise a wider range including a single person, family unit, extended family or shared household.

The population density of retirement villages has been determined through industry information and analysis of ABS data. Historical analysis by industry practitioners of individual retirement communities is that the average household size is between 1.3 and 1.4 persons per dwelling (Galea 2016, pers. comm. 24 July 2016). Analysis of three large retirement villages that comprise the smallest ABS statistical area, SA1, have been undertaken. The results are summarised in Table 5.

Table 5: Retirement Village Analysis of Average Household Size

Name	SA1	Population	Dwellings	Average Household Size
Henry Kendall Gardens	1104312	868	552	1.40
Buderim Garden	3141303	582	397	1.30
Durack	3127203	559	458	1.20

In this document a ratio of 1.35 persons per dwelling for retirement village apartments has been adopted.

The average population per apartment for residential developments has been determined from ABS statistics (Australian Bureau of Statistics, 2016) of similar developments located nearby. The basic community profile for individual suburbs provides an average household size. Presuming one household per dwelling this gives a realistic estimate of the average number of people per dwelling.

To determine the number of people per dwelling in apartments ABS census data at the SA1 level was downloaded and the total population for the location was used. To determine number of dwellings, ABS data was augmented with online property data for individual SA1 census districts. This allowed a comparison to be made of locations that have similar apartment development densities.

High-rise residential developments in inner urban locations are often noted having a proportion of vacant apartments. Owners may elect to maintain multiple properties and move between these as required. The percentage of unoccupied private dwellings was noted.



## **Limitations**

This analysis is based on a series of case studies from which conclusions regarding the built form outcome of retirement villages and residential developments can be made. This requires both a recently completed medium – high density retirement village and residential development in the same or nearby suburbs. This is a limited sample and indicative of medium – high density buildings.

Information on individual properties has been sourced from publicly available (and free) online sources, which has only been available for a selection of municipalities in New South Wales and Queensland. This geographically focuses analysis; however, the conclusions are considered representative of Australian retirement villages and residential development.

This research has been based on online architectural and other documents. There is always the possibility that the final built form may differ from this. It was not feasible to undertake site inspections of each property, therefore this is acknowledged as a shortcoming.

Differences in types of properties are noticed between geographies. Therefore, the best basis of comparison is between the two proximate properties not between properties in different LGAs and states.

This research examines the physical outcome. It does not compare the two types of development on a financial basis either the cost of construction or the selling price/incoming contribution for dwellings. In examining the physical outcome, it does not consider aspects unique to individual developments. For example, the residential development at Lucas Street Lutwyche required the relocation of a pre-1911 timber dwelling as part of the development. This is not considered in the analysis.

This analysis did not look at accessibility in terms of wheelchair and other forms of mobility constraints. Many residential apartment buildings do not have stair free access between the street and individual apartments. It was noted that Case Study 2 had requirements for residential developments to include accessible apartments.

## Case Study 1 Sutherland, New South Wales

Retirement Village	BUPA Sutherland	DA16/1620, MA18/0056 MA19/0281
Residential	The Grand	DA16/1035

This case study examines two properties in the suburb of Sutherland. The retirement village component of BUPA Sutherland situated at 99R Acacia Road, Sutherland is operated by BUPA and was completed in 2020. The Grand is a residential development situated at 29-41 The Grand Parade, Sutherland developed by Hone Constructions Pty Ltd and completed in 2021.

BUPA Sutherland comprises two towers of six and seven levels. There are community facilities, a swimming pool and a café on the ground floor, plus underground car parking. BUPA operates a residential aged care facility on the adjacent site, 42 Auburn Street.

The Grand comprises four buildings, one a two-level terrace style development and three towers each of six levels, plus underground car parking.

Sutherland is a residential suburb situated approximately 23 km south-east of the Sydney CBD. It abuts the Woronora River and the Royal National Park which provide recreational amenity. The Sutherland railway station provides railway transport to Greater Sydney and shopping facilities are situated on Old Princes Highway.

### Ratio of Site Area and Gross Floor Area

Both properties have the same zoning and the maximum allowable FSR is 1.8. With BUPA Sutherland the FSR took into account the adjacent, co-located, residential aged care facility. Details on the zoning, site area, GFA and FSR are contained in Table 6.

Table 6: Sutherland Zoning and FSR

Property	Site Area	GFA	FSR	Zoning
BUPA Sutherland Adjacent RACF Site Area 9,193m <sup>2</sup> GFA 7,596m <sup>2</sup> Retirement village Site Area 4,497m <sup>2</sup> GFA 9,863m <sup>2</sup>	13,690m <sup>2</sup>	17,459m <sup>2</sup>	1.28	R4-High Density Residential
The Grand	4,742m <sup>2</sup>	8,364.7m <sup>2</sup>	1.76	R4-High Density Residential

In this case study the retirement village has a lower than permissible FSR taking into account the co-located residential aged care. The residential development has close to the maximum permissible FSR.

## Apartment Yield & Accommodation

Both developments have a combination of one-, two- and three-bedroom apartments. Ground floor apartments have terraces and upper-level apartments have balconies. Details on the level of accommodation for each property and the proportion is contained in Table 7.

Table 7: Sutherland Accommodation Levels and Proportion of Total

Accommodation	BUPA Sutherland	The Grand		
One bedroom	8	6%	24	24%
Two bedroom	71	85%	74	73%
Three bedroom	8	10%	3	3%
Total	84		101	

The retirement village has a greater proportion of two- and three-bedroom apartments compared to the residential development. With the residential development, a quarter of apartments are one-bedroom.

### Internal Apartment Area & Gross Floor Area

The average and median internal areas and external living areas for apartments in each building is summarised in Table 8. The Grand has a greater number of apartments with ground floor terraces, plus there are seven two story terraces.

Table 8: Sutherland Average and Median Areas and Efficiency Ratio

	BUPA Sutherland		The Grand	
	Average	Median	Average	Median
One bedroom	74m <sup>2</sup>	74m <sup>2</sup>	54m <sup>2</sup>	54m <sup>2</sup>
Two bedroom	96m <sup>2</sup>	93m <sup>2</sup>	85m <sup>2</sup>	84m <sup>2</sup>
Three bedroom	118m <sup>2</sup>	117m <sup>2</sup>	129m <sup>2</sup>	138m <sup>2</sup>
Terraces/balconies	16m <sup>2</sup>	13m <sup>2</sup>	17m <sup>2</sup>	15m <sup>2</sup>
Ground floor terraces	42m <sup>2</sup>	48m <sup>2</sup>	24m <sup>2</sup>	15m <sup>2</sup>
Balconies	14m <sup>2</sup>	13m <sup>2</sup>	15m <sup>2</sup>	23m <sup>2</sup>
Efficiency ratio	82%		96%	

The average area for the one and two-bedroom apartments is greater for the retirement village when compared to the residential development. The three-bedroom apartments in the retirement village have a smaller average area, this is with a smaller sample size. Two-bedroom retirement village apartments have walk-in robes in the master bedroom; not all residential units have this feature. Both retirement village and residential two-bedroom units have two bathrooms.

All apartments have private external space of ground floor terraces and upper-level balconies. Apartments in the retirement village have larger terraces, whereas apartments in the residential development have larger average terraces/balconies and balconies. A closer examination of the plans revealed one roof level residential apartment that has balconies on both sides with a total area of 52.6m<sup>2</sup>.

Removing this one apartment from the total reduces the overall building average to the same level as the retirement village, that is 16m<sup>2</sup> for terraces/balconies and 14m<sup>2</sup> for balconies.

The retirement village has a lower efficiency ratio compared to the residential development. Features which influence this efficiency ratio included the number of lifts, the width of corridors and the presence of community facilities. The residential development included two story terrace buildings each with their own exit, these lacked lifts, internal corridors and communal fire stairs, which increased the efficiency ratio for this development.

The retirement village has two towers each serviced with two lifts, four lifts in total. The residential development has three towers each with a single lift and the terrace style building has no lifts, three lifts in total.

### Community Facilities

The retirement village has community facilities on the ground level of both towers. Building A has a multi-purpose room, cinema, swimming pool, reflection room, arts and crafts room with an internal area of 407m<sup>2</sup> plus there are change rooms in the swimming pool and male and female toilets. Building B has a café, hair salons and utility room with an internal area of 137m<sup>2</sup> plus male, female and accessible toilets.

The residential development did not have community facilities.

### Car Parking

Both the retirement village and residential development have two levels of basement car parking. The total number and the type of car bays for both buildings is summarised in Table 9. Both properties varied in the total number and the type of car bays.

Table 9: Car Parking Sutherland

	Total Car Bays	Ordinary	Tandem	Wheelchair Accessible
BUPA Sutherland	96	9	–	87
The Grand	125	99	6	20

The retirement village has a greater proportion of wheelchair accessible car bays compared to the residential development.

Ordinary car bays in the retirement village are 2.4 m wide by 5.4 m deep and wheelchair accessible car bays are 3.2m wide by 5.4m deep. Manoeuvring distance between car bays is between 5.8m and 6.23m.

There was insufficient detail on the available plans for the residential development to determine the full dimensions of car bays, which are 5.4m deep.

### Other Features

Both properties have features not found in the other. In the basement, the retirement village has seven mobility scooter charging stations and an ambulance bay. The residential development has basement bicycle parking.

## Floor Height

In the retirement village the floor height is 3.3 m for the ground floor and 3.1 m for the upper floors, while in the residential development the floor height is 3.1 m for ground and upper levels.

## Estimated Population

The average household size in the suburb of Sutherland is 2.2 (Australian Bureau of Statistics, 2016). This average includes both detached dwellings and apartments. Three SA1 census districts were analysed and details are in Table 10. Each of districts included some detached dwellings, however over 95% of the dwellings were apartments.

The percentage of unoccupied private dwellings was 6.9%.

Table 10: Population Analysis Sutherland

SA1	Location	Total dwellings	Total population	Average household size
1153809	Bounded by Flora Road, Acacia Road/Princes Highway, President Avenue and Auburn Street	241	455	1.89
1153826	Bounded by Princes Highway, Oak Road and Flora Street	269	446	1.66
1153820	Bounded by Flora Street, Auburn Street, President Avenue and Glencoe Street	156	295	1.89

The population density per apartment of 1.75 was adopted for the residential development for this case study. A summary of the population outcomes is contained in Table 11.

Table 11: Population Outcome Sutherland

Site Area	GFA	Apartments	Population	
BUPA Sutherland	4,497m <sup>2</sup>	9,863m <sup>2</sup>	84	113
The Grand	4,742m <sup>2</sup>	8,364.7m <sup>2</sup>	101	177

The retirement village has a lower anticipated population compared to the residential development. This can be attributed to the smaller number of apartments and the lower population density.

Analysis of both developments was from the following sources.

- (BBC Consulting Planners, 2016)
- (Marchese Partners International Ltd, 2017)
- (Marchese Partners International Ltd, 2018)
- (Benson McCormick Architecture, 2016)

There is a full reference list at the end of the document.

## Case Study 2 Waitara & Asquith, New South Wales

Retirement Village	Ignatius Residences - ILU Tower A Waitara	DA 394/215
Residential	Allira North Asquith	DA 1683/2015

This case study examines two properties in the suburb of Waitara & Asquith. Ignatius Residences comprises one tower of a co-located retirement village and residential aged care facility situated at 32 McAuley Place, Waitara, operated by Catholic Healthcare and completed 2021. Allira North comprises a single tower situated 28-32 Lords Street, Asquith, developed by Invest 88 Pty Ltd & Rezimax Pty Ltd and completed 2019.

Ignatius Residences comprises a five-level building with one level of basement car parking. It is part of a campus style retirement village and residential aged care development, on completion there will be five retirement village towers and a residential aged care building plus associated community facilities in other buildings.

Allira North comprises a six-level building with two levels of basement car parking. There are no community facilities.

Waitara and Asquith are residential suburbs situated 21 km north of the Sydney CBD. Asquith is proximate to the Ku-ring-gai Chase National Park which provides recreational amenity. Railway transport to the CBD is available through the Wahroonga and Asquith railway stations. Retail, civic and medical facilities are available in the Hornsby town centre.

### Ratio of Site Area and Gross Floor Area

The GFA for both developments was sourced from architectural drawings lodged online as part of the Development Approval and Strata Plan 99979. As the retirement village is part of a larger development it was not possible to determine the site area or the FSR. Details on the zoning, site area GFA and FSR are contained in Table 12.

Table 12: Waitara & Asquith Zoning and FSR

Property	Site Area	GFA	FSR	Zoning
Ignatius Residences	N/A	4,454m <sup>2</sup>	N/A	R4 High Density Residential
Allira North	2,218m <sup>2</sup>	3,740m <sup>2</sup>	1.69	R4 High Density Residential

### Apartment Yield & Accommodation

The retirement village has a combination of one- and two-bedroom apartments; the residential development has a combination of one-, two- and three-bedroom apartments. The retirement village has balconies, and the residential development has ground floor terraces and upper-level balconies. Details on the level of accommodation for each property and the proportion are contained in Table 13.

Table 13: Waitara & Asquith Accommodation Levels and Proportion of Total

Accommodation	Ignatius Residences		Allira North	
	Count	Proportion	Count	Proportion
One bedroom	10	25%	5	11%
Two bedroom	30	75%	35	80%
Three bedroom	–	–	4	9%
Total	40		44	

The residential development has a greater range of accommodation levels compared to the retirement village; this property has a higher proportion (80%) within one of the accommodation types (two bedroom).

### Internal Apartment Area & Gross Floor Area

The average and median internal areas and external living areas for apartments in each building are summarised in Table 14.

Table 14: Waitara & Asquith Average and Median Areas and Efficiency Ratio

	Ignatius Residences		Allira North	
	Average	Median	Average	Median
One bedroom	72m <sup>2</sup>	72m <sup>2</sup>	66m <sup>2</sup>	67m <sup>2</sup>
Two bedroom	102m <sup>2</sup>	99m <sup>2</sup>	78m <sup>2</sup>	75m <sup>2</sup>
Three bedroom	–	–	101m <sup>2</sup>	103m <sup>2</sup>
Ground Floor Terraces	–	–	26m <sup>2</sup>	24m <sup>2</sup>
Balconies	17m <sup>2</sup>	16m <sup>2</sup>	19m <sup>2</sup>	12m <sup>2</sup>
Efficiency ratio	85%		92%	

The average area for the one and two-bedroom apartments is greater for retirement village when compared to the residential development. Closer examination of the architectural plans indicated that retirement village units has accessible bathrooms, which are naturally larger compared to the residential development. The residential development has the potential to make 8 of the 44 apartments accessible through retrofitting, increasing the size of the bathrooms.

A design feature of the residential development is that 8 of the 35 two-bedroom apartments are two-storey, with an internal staircase and an upper-level void. These features are included in the internal living area, although they reduce the total amount of usable living space.

A comparison of balcony size between the two developments presents a nuanced picture. While the average balcony area in the residential development is larger, the median area is smaller. The architectural drawings revealed that some of the upper-level apartments have wraparound balconies between 30 m<sup>2</sup> and 44 m<sup>2</sup> increasing the average area.

Both properties comprise a single tower. The retirement village has a single lift, and the residential development has two lifts.

The retirement village has a lower efficiency ratio compared to the residential development. Features which influence this efficiency ratio include corridors and drying courts. The retirement village has corridors 2 m wide with natural lighting, the residential development corridors are 1.6 m wide with no natural lighting. The retirement village has drying courts on each level. A further feature in the design of apartments in the residential development is long corridors within individual apartments. This feature increases the area in apartments and reduces the size of communal corridors.

### Community Facilities

As the retirement village is part of a much larger development, the community facilities are in a separate building and included multipurpose rooms, gym, indoor swimming pool, cinema, dining area, male and female amenities and a café. The residential development did not have community facilities.

### Car Parking

The retirement village has a single level of basement car parking, the residential development has 2 levels of basement car parking. The total number and the type of car bays for both buildings is summarised in Table 15.

Table 15: Car Parking Waitara & Asquith

	Total Car Bays	Ordinary	Tandem	Wheelchair Accessible
Ignatius Residences	27	27	–	–
Allira North	57	50	–	7

The retirement village will ultimately be part of a larger campus style development and individual buildings will be connected through the basement car parking. As the basement in the retirement village will be connected to the basement car parking in future adjacent buildings, the number of car bays is the total under that building. All car bays in the retirement village are 3.2 m x 6 m, ordinary car bays in the residential development are 2.4 m x 5.4 m.

### Other Features

Car bays in the retirement village have attached storage cages and there were a further 14 storage cages in the basement. In the residential development there are storage cages for each apartment plus bicycle parking.

### Floor Height

For the retirement village, the floor height is 3.2 m for ground and upper levels. For the residential development, the floor height is 2.9 m for the ground and upper levels and 3.0 m for the penthouse level.

### Estimated Population

The average household size in the suburb of Waitara was 2.4 people and for Asquith was 3.0 people (Australian Bureau of Statistics, 2016). This average includes both detached dwellings and apartments. Three SA1 census districts were analysed, details are in Table 16. Each of districts included some detached dwellings, however over 95% of the dwellings were apartments. The percentage of unoccupied private dwellings in Waitara was 6.2% and in Asquith was 12.8%.

Table 16: Population Analysis Waitara & Asquith

SA1	Location	Total dwellings	Total population	Average household size
1157907	Bounded by Thomas Street, Edgeworth David Avenue, Romsey Street and Alexandria Parade	825	349	2.36
1157918	Bounded by Romsey Street, Orana Street and Alexandria Parade	563	230	2.45
1157903	Bounded by Orana Street, Waitara Avenue and Alexandria Parade	388	161	2.31

The population density per apartment of 2.3 was adopted for the residential development for this case study. A summary of the total estimated population is contained in Table 17.

Table 17: Population Outcome Waitara & Asquith

	Site Area	GFA	Apartments	Population
Ignatius Residences	N/A	4,454m <sup>2</sup>	40	54
Allira North	2,218m <sup>2</sup>	3,740m <sup>2</sup>	44	101

The retirement village has a lower anticipated population compared to the residential development.

Analysis of both developments was from the following sources.

(Morrison Design Partnership Architects, 2018)

(Design Effect Pty Ltd, 2016)

There is a full reference list at the end of the document.

## Case Study 3 Lutwyche, Queensland

Retirement Village	The Atrium Lutwyche	Application Reference A004700669
Residential	The Chaussy	Application Reference A004385101

This case study examines two properties in the suburb of Lutwyche. The Atrium Lutwyche, situated at 11-15 High-Street, was developed by Blue Sky Alternative Investments and is operated by Aura Holdings and completed 2020, The Chaussy, situated at 2-8 Lucas Street, Lutwyche, was developed by Tessa Group and completed 2021.

The Atrium Lutwyche comprises a seven-level apartment building with three levels of basement car parking. There are community facilities on the lower ground, ground level and rooftop.

The Chaussy comprises a five-level apartment building with one level of basement car parking. There are no community facilities.

Lutwyche is a residential suburb located approximately 5 km north of the Brisbane CBD. Bus services and road transport provide access to the CBD and Greater Brisbane via Lutwyche Road. There are shopping facilities on the corner of Lutwyche Road and Chalk Street.

### Ratio of Site Area and Gross Floor Area

The GFA for both developments was sourced from architectural drawings and documents. Details on the zoning, site area, GFA and FSR are contained in Table 18.

Table 18: Lutwyche Zoning and FSR

Property	Site Area	GFA	FSR	Zoning
The Atrium Lutwyche	1,945m <sup>2</sup>	5,891m <sup>2</sup>	3.03	DC2 District Centre
The Chaussy	1,215m <sup>2</sup>	2,485m <sup>2</sup>	2.05	R4-High Density Residential

Each property has a different zoning, which is reflected in the FSR.

### Apartment Yield & Accommodation

The retirement village has a combination of one-, two- and three-bedroom apartments and all apartments have balconies. The residential development comprises only two-bedroom apartments, ground floor apartments have courtyard terraces and upper-level apartments have balconies. Details on the level of accommodation for each property and the proportion are contained in Table 19.

Table 19: Lutwyche Accommodation Levels and Proportion of Total

Accommodation	The Atrium Lutwyche		The Chaussy	
	Count	Proportion	Count	Proportion
One bedroom	4	7%	-	0%
Two bedroom	49	83%	29	100%
Three bedroom	6	10%	-	0%
Total	59		29	

The retirement village contained a greater variety of levels of accommodation, whereas the residential development contained 100% two-bedroom apartments.

### Internal Apartment Area & Gross Floor Area

The average and median internal areas and external living areas for apartments in each building is summarised in Table 20.

Table 20: Lutwyche Average and Median Areas and Efficiency Ratio

	The Atrium Lutwyche		The Chaussy	
	Average	Median	Average	Median
One bedroom	61m <sup>2</sup>	61m <sup>2</sup>	-	-
Two bedroom	82m <sup>2</sup>	82m <sup>2</sup>	79m <sup>2</sup>	78m <sup>2</sup>
Three bedroom	114m <sup>2</sup>	105m <sup>2</sup>	-	-
Terraces/balconies	20m <sup>2</sup>	15m <sup>2</sup>	21m <sup>2</sup>	18m <sup>2</sup>
Ground floor courtyard/terraces	-	-	42m <sup>2</sup>	41m <sup>2</sup>
Balconies	20m <sup>2</sup>	15m <sup>2</sup>	18m <sup>2</sup>	18m <sup>2</sup>
Efficiency ratio	84%		92%	

Two-bedroom apartments are the only type where a basis of comparison could be made. In the retirement village these are larger compared to the residential development. With both the retirement village and the residential development the two-bedroom apartments have two bathrooms and built-in wardrobes.

The retirement village has only upper-level apartments with balconies, whereas the residential development has ground floor apartments with courtyard/terraces and upper level apartments with balconies. Comparing balconies only, the retirement village has a larger average size with a smaller median size. This is due to the one-bedroom apartments having balconies of 12m<sup>2</sup>.

The retirement village has a lower efficiency ratio with 84% when compared to the residential development with 92%. Features which contributed to this difference include the number of lifts, common corridor space and the presence of community facilities.

Both properties comprise a single tower. The retirement village is serviced with two lifts and the residential development is serviced with one lift. The design of both the properties has minimal common corridor space. The residential development has no common corridor and all apartments opening off the lift lobby.

## Community Facilities

The retirement village has community facilities on the lower ground level, ground level and rooftop. The community facilities comprise the following:

- Lower ground level, swimming pool, Pilates/yoga area, male and female toilets and change room;
- Ground level, games room, billiards room, consulting room, craft room, meeting room, dining room and male and female toilets; and
- Rooftop, an open terrace area plus a unisex toilet.

There is a café which is open to the public on the ground floor with a NLA of 68m<sup>2</sup>. The community facilities have a total area of 692m<sup>2</sup> (including the café).

The residential development does not have community facilities.

## Car Parking

The retirement village has three levels of basement car parking and the residential development has one level of basement car parking. The total number and the type of car bays for both buildings is summarised in Table 21. Ordinary car bays include visitor and retail car bays. Both properties varied in the total number and the type of car bays.

Table 21: Car Parking Lutwyche

	Total Car Bays	Ordinary	Tandem	Wheelchair Accessible
The Atrium Lutwyche	85	71	12	2
The Chaussy	37	28*	8	1

\* Includes 5 small car bays.

There is a difference in size of car bays between the two properties.

Car bays in the Atrium Lutwyche have the following dimensions: residents car bays 2.6m by 5.4m; visitor car bays 2.4m & 2.6m by 5.4m; and disabled car bays 4.8m by 5.4m. Manoeuvring distance is 6.2m.

Car bays in The Chaussy have the following dimensions: ordinary car bays 2.5m by 5.4m, small car bays 2.3m by 5.4m and a disabled car bay 2.5m by 5.4m. Manoeuvring distance is 6.2m.

## Other Features

The retirement village has designated parking for 29 bicycles and the residential development has designated parking for 7 bicycles.

## Floor Height

For the retirement village the floor height is 3.75 m for the ground floor and 3.0 m – 3.18 m for the upper floors. For the residential development the floor height is 3.0 m for ground and upper levels.

## Estimated Population

The average household size in the suburb of Lutwyche is 2.1 (Australian Bureau of Statistics, 2016), which includes both detached dwellings and apartments. Three SA1 census districts were analysed and details are in Table 22. Each of districts included some detached dwellings, however over 90% of the dwellings were apartments.

The percentage of unoccupied private dwellings was 13.8%.

Table 22: Population Analysis Lutwyche

SA1	Location	Total dwellings	Total population	Average household size
3113115	Bounded by Lutwyche Road, Chalk Street, McLennan Street, Connon Street and Lowerson Street	266	452	1.70
3113109	Bounded by Kedron Brook, Norman Avenue, Lutwyche Road and Bradshaw Street	270	430	1.59
3113108	Bounded by Kedron Brook, Lutwyche Road and Norman Avenue	216	348	1.61

The population density per apartment of 1.6 was adopted for the residential development for this case study. A summary of the population outcomes is contained in Table 23.

Table 23: Population Outcome Lutwyche

	Site Area	GFA	Apartments	Population
The Atrium Lutwyche	1,945m <sup>2</sup>	5,891m <sup>2</sup>	59	80
The Chaussy	1,215m <sup>2</sup>	2,485m <sup>2</sup>	29	46

The site area and town planning was different between the two types of properties. This has influenced the built form outcome and ultimately the total population.

Analysis of both developments was from the following sources.

(agarchitects, 2017)

(agarchitects, 2019)

(Red Door Architecture, 2016)

(Urban Strategies, 2015)

There is a full reference list at the end of the document.

## Case Study 4 Woolloongabba & Greenslopes, Queensland

Retirement Village	St Luke's Green, Woolloongabba	Application Reference A003115495
Residential	Lincoln on the Park, Greenslopes	Application Reference A004123703

This case study examines two properties in the adjacent suburbs of Woolloongabba and Greenslopes. St Luke's Green, situated at 41-43 Taylor Street, Woolloongabba, was developed by Greengate Development Pty Ltd and operated by Greengate and completed in 2020. Lincoln on the Park situated at 48-54 Lincoln Street, Greenslopes was developed by Devcorp and completed 2021.

St Luke's Green comprises three towers each of three levels. There are community facilities, activity spaces, gymnasium, dining area, hairdresser, visiting consultants room and male and female amenities on the ground floor, plus underground car parking. The Catholic Church operates a residential aged care facility on the site, plus the development has retained a church.

Lincoln on the Park comprises an eight-level tower with underground car parking. The property was developed by Devcorp.

Woolloongabba and Greenslopes are adjacent residential suburbs located approximately 4 km due south of the Brisbane CBD. Rail, bus services and road transport provide access to the CBD and Greater Brisbane via Ipswich Road and Main Street. Buranda Shopping Centre provides shopping facilities on Cornwall Street adjacent to the Princess Alexandra Hospital.

### Ratio of Site Area and Gross Floor Area

Details on the zoning, site area and GFA are contained in Table 24.

Property	Site Area	GFA	Zoning
St Luke's Green	6,621m <sup>2</sup>	5,509m <sup>2</sup> *	CF4 Community facilities Community purposes
Lincoln on the Park	1,197m <sup>2</sup>	7,558m <sup>2</sup>	HDR1 High density residential (Up to 8 storeys)

\* Retirement village component

The sites have different zonings, which affects the development outcome. In addition to the retirement village component, St Luke's Green includes a residential aged care facility and a church used for community purposes. A detached residential building was relocated as part of the development.

### Apartment Yield & Accommodation

The retirement village has a combination of one-, two- and three-bedroom apartments. Ground floor apartments have courtyard terraces and upper-level apartments have balconies. The residential development comprises one- and two-bedroom units only. Ground floor apartments have courtyard terraces and upper-level apartments have balconies. Details on the level of accommodation for each property and the proportion is contained in Table 25.

Table 25: Woolloongabba & Greenslopes Accommodation Levels and Proportion of Total

Accommodation	St Luke's Green		Lincoln on the Park	
	Count	Proportion	Count	Proportion
One bedroom	16	26%	40	43%
Two bedroom	41	67%	53	57%
Three bedroom	4	7%	-	-
Total	61		93	

The retirement village contains a greater variety of levels of accommodation.

### Internal Apartment Area & Gross Floor Area

The average and median internal areas and external living areas for apartments in each building is summarised in Table 26. External living areas of terraces and balconies was not available for the retirement village, so this information has been only compiled for the residential development.

Table 26: Woolloongabba & Greenslopes Average and Median Areas and Efficiency Ratio

	St Luke's Green		Lincoln on the Park	
	Average	Median	Average	Median
One bedroom	62m <sup>2</sup>	62m <sup>2</sup>	54m <sup>2</sup>	54m <sup>2</sup>
Two bedroom	82m <sup>2</sup>	78m <sup>2</sup>	83m <sup>2</sup>	80m <sup>2</sup>
Three bedroom	111m <sup>2</sup>	102m <sup>2</sup>	-	-
Terraces/balconies	-	-	12m <sup>2</sup>	12m <sup>2</sup>
Ground floor courtyard/terraces	-	-	16m <sup>2</sup>	12m <sup>2</sup>
Balconies	-	-	12m <sup>2</sup>	12m <sup>2</sup>
Efficiency ratio	87%		87%	

One-bedroom apartments in the retirement village have significantly larger average and median areas compared to the residential development. Two-bedroom apartments in the retirement village are slightly smaller than the residential development. The two-bedroom apartments in the retirement village have a combination of one bathroom and two-bathroom layouts, while all the two-bedroom apartments in the residential development have two bathrooms. It is not possible to compare the three-bedroom apartments. Main bedrooms in both properties have built-in robes.

The retirement village and residential development have similar efficiency ratios of 87%.

The retirement village comprises three individual towers with a single lift in each building. It is part of a campus development including residential aged care, a church used for community purposes and a residential building. The residential development comprises a single tower with two lifts.

Corridors in the retirement village are 2.45 m wide, while it was not possible to determine the width of the corridors in the residential building.

### Community Facilities

The retirement village has community facilities on the ground level of one building. These include gymnasium, activity space, dining room with servery area, hairdresser, visiting consultants room and male and female amenities, plus administration offices.

The residential development does not have community facilities.

## Car Parking

The retirement village has one level of basement car parking, and the residential development has three levels of basement car parking. The total number and type of car bays for both buildings is summarised in Table 27 .

Table 27: Car Parking Woolloongabba & Greenslopes

	Total Car Bays	Ordinary	Tandem	Wheelchair Accessible
St Luke's Green *	73	59	14	-
Lincoln on the Park	122	121	-	1

\* Retirement village component

Basement car parking in St Luke's Green is for the retirement village, residential aged care and church and the total number for all components is 95 car bays. The dimensions for the car bays are not available.

Car bays in Lincoln on the Park are 2.4m by 5.4m. In addition, all residents and visitors car bays have individual bicycle parking. There is one motorcycle bay. Manoeuvring distance is not available.

## Other Features

St Luke's Green has individual storage lockers in the basement for retirement village apartments.

## Floor Height

For the retirement village the floor height for the ground floor in the building that accommodated the community facilities is 3.325 m. For the upper levels and the ground floor in the buildings with apartments on the ground floor it is 2.725 m – 3.125 m. For the residential development the floor height is 4.0 m for the ground floor and 3.0 m for the upper levels.

## Estimated Population

The average household size in the suburb of Woolloongabba is 2.3 and Greenslopes is 2.2 (Australian Bureau of Statistics, 2016). This average includes both detached dwellings and apartments. Three SA1 census districts were analysed in nearby suburbs and details are in Table 28. Each of districts included some detached dwellings, the majority of the dwellings were apartments. The percentage of unoccupied private dwellings in Woolloongabba was 14.7% and for Greenslopes was 9.9%.

Table 28: Population Analysis Woolloongabba & Greenslopes

SA1	Location	Total dwellings	Total population	Average household size
3105808	Bounded by Balaclava Street, Logan Road, Redfern Street and Ipswich Road	291	539	1.85
3105518	Bounded by Logan Road, Jubilee Street, Rialto Street and Cornwall Street	354	636	1.80
3105302	Bounded by Old Cleveland Road, Pembroke Road, Cornwall Street and Kirkland Avenue	316	522	1.65

The population density per apartment of 1.8 was adopted for the residential development for this case study. A summary of the population outcomes is contained in Table 29.

Table 29: Population Outcome Woolloongabba & Greenslopes

	Site Area	GFA	Apartments	Population
St Luke's Green	6,621m <sup>2</sup>	5,509m <sup>2</sup> *	61	82
Lincoln on the Park	1,197m <sup>2</sup>	7,558m <sup>2</sup>	93	167

\* Retirement village component

The town planning and GFA is different between the two types of properties. This influences the built form outcome and ultimately the total population.

Analysis of both developments was from the following sources.

(Arkhefield, 2015)

(Greengate Design Pty Ltd, 2012)

There is a full reference list at the end of the document.

## Case Study 5 Pelican Waters & Kings Beach, Queensland

Retirement Village	Pelican Waters Retirement Village Pelican Waters	Development Application Number MCU17/2127
Residential	Kings Beach Saltair Rise	Development Application Number MCU16/0258

This case study examines two properties in the suburbs of Pelican Waters and Kings Beach on the Sunshine Coast of Queensland. Pelican Waters Retirement Village is situated at 1 Boat Shed Way, Pelican Waters, operated by Oaktree and completed 2021. Saltair Rise is situated at 33-35 Saltair Street, Kings Beach, developed by Rise Projects Pty Ltd and completed 2019.

Pelican Waters Retirement Village comprises a single tower of three levels. There are community facilities on the ground floor, a yoga room, gymnasium and terrace at roof level, an outdoor swimming pool and one level of underground car parking.

Saltair Rise comprises a single tower of five levels. There is a gymnasium and managers office on the ground floor and two levels of underground car parking.

Pelican Waters and Kings Beach are coastal suburbs located approximately 71 km north of the Brisbane CBD and feature natural amenity through their proximity to Moreton Bay and Pumicestone Channel. The suburbs are serviced with retail, community and medical facilities including the Caloundra Hospital.

They are retiree destinations with an older demographic. The median ages for the suburbs of Pelican Waters and Kings Beach are 51 years and 50 years respectively .

### Ratio of Site Area and Gross Floor Area

Details on the zoning, site area, GFA and FSR are contained in Table 30.

Table 30: Pelican Waters & Kings Beach Zoning and FSR

Property	Site Area	GFA	FSR	Zoning
Pelican Waters Retirement Village	5,000m <sup>2</sup>	7,828m <sup>2</sup>	1.57	Emerging Community Zone
Saltair Rise	1,521m <sup>2</sup>	3,783m <sup>2</sup>	2.49	High Density Residential Zone

Each property has a different zoning, which is reflected in the FSR.

<sup>1</sup> Australian Bureau of Statistics, 2016. Census of Population and Housing. Canberra: Australian Bureau of Statistics

## Apartment Yield & Accommodation

The retirement village and residential development have a combination of two- and three-bedroom apartments. Ground floor apartments have terraces, upper-level apartments have balconies. Details on the level of accommodation for each property and the proportion is contained in Table 31.

Table 31: Pelican Waters & Kings Beach Accommodation Levels and Proportion of Total

Accommodation	Pelican Waters Retirement Village		Saltair Rise	
	Count	Proportion	Count	Proportion
One bedroom	-	-	-	-
Two bedroom	48	80%	22	63%
Three bedroom	12	20%	13	37%
Total	60		35	

The retirement village has a higher proportion of two-bedroom units compared to the residential development. This may be a function of Oaktree Group's positioning in the affordable retirement village segment of the market.

## Internal Apartment Area & Gross Floor Area

The average and median internal areas and external living areas for apartments in each building is summarised in Table 32.

Table 32: Pelican Waters & Kings Beach Average and Median Areas and Efficiency Ratio

	Pelican Waters Retirement Village		Saltair Rise	
	Average	Median	Average	Median
One bedroom	-	-	-	-
Two bedroom	106m <sup>2</sup>	106m <sup>2</sup>	87m <sup>2</sup>	88m <sup>2</sup>
Three bedroom	133m <sup>2</sup>	127m <sup>2</sup>	122m <sup>2</sup>	117m <sup>2</sup>
Balconies/Terraces	22m <sup>2</sup>	20m <sup>2</sup>	23m <sup>2</sup>	21m <sup>2</sup>
Efficiency ratio	85%		92%	

The retirement village has significantly larger two-bedroom units compared to the residential development. Examining the architectural plans reveals that in the retirement village the living areas and bedrooms are slightly larger, importantly the two bathrooms are accessible and therefore larger. Two-bedroom units in the residential development have two bathrooms, however they are both very compact and someone with limited mobility would find them difficult to access.

The three-bedroom units in the retirement village are slightly larger compared to the residential development. Again, examining the architectural plans, the bathrooms are accessible and larger.

The balconies and terraces for both developments are roughly similar in size.

The retirement village has a lower efficiency ratio with 85 %, compared to the residential development with 92%. Both properties comprise a single tower, the retirement village is serviced with two lifts and the residential development is serviced with a single lift. Also, the configuration of the residential development is more compact with minimal corridor space from the lift lobby to the individual units. It was not possible to determine the width of the corridors.

## Community Facilities

The retirement village has community facilities on the ground floor and the roof level. The ground floor community facilities comprise a library, multipurpose room, administration rooms, male and female amenities, a communal lounge dining and kitchen area. There is an outdoor swimming pool with outdoor shower and change room. On the rooftop there is a gymnasium and a yoga room, plus external terrace space. The areas for the community facilities are the ground floor at 494 m<sup>2</sup> and the roof level at 122 m<sup>2</sup> (internal area, the area of the open terrace was not provided).

The residential development has a gymnasium on the ground floor, the area was not provided.

## Car Parking

The retirement village has one level of basement car parking with ground level visitor car bays. The residential development has two levels of basement car parking with ground level visitor car bays. The total number and the type of car bays for both buildings is summarised in Table 33.

Table 33: Car Parking Pelican Waters & Kings Beach

	Total Car Bays	Ordinary	Tandem	Wheelchair Accessible
Pelican Waters Retirement Village	91	88	-	The 3
Saltair Rise	77	76	-	1

The size of the car bays in Pelican Waters Retirement Village was not provided.

Car bays in Saltair Rise have a range of sizes from 2.4 m wide to 3.2 m wide and all were 5.4 m deep. Manoeuvring distance is 6.2m.

## Other Features

The retirement village has 43 storage cages and 2 electric bike charging stations in the basement.

The residential development has 35 storage cages.

## Floor Height

For the retirement village the floor height is 2.85 m for the ground floor and 2.8 m – 3.05 m for the upper levels. For the residential development the floor height is 2.9 m for the ground floor and 2.8 m for the upper levels.

## Estimated Population

The average household size in Pelican Waters is 2.6 people and for Kings Beach 1.9 people (Australian Bureau of Statistics, 2016). In Pelican Waters detached houses comprise 89.4% of the housing stock and in Kings Beach apartments 91.0% of housing stock.

The percentage of unoccupied private dwellings for Pelican Waters was 10.1% and for Kings Beach was 39.1%. The Kings Beach data indicates a high proportion of holiday properties.

Three SA1 census districts were analysed and details are in Table 34. Each of districts included some detached dwellings, however over 95% of the dwellings were apartments.

Table 34: Population Analysis Pelican Waters & Kings Beach

SA1	Location	Total dwellings	Total population	Average household size	Unoccupied Dwellings
3141903	Bounded by Moreton Parade, Arthur Street, Moreton Bay and Dingle Avenue	551	523	0.93	56.2%
3141907	Bounded by Michinton Street, Bulcock Street, Dingle Avenue and Moreton Bay	794	711	1.12	38.4%
3141901	Bounded by Albert Street, King Street and Moreton Bay	325	303	1.07	46.6%

A feature of the locality was high-rise development of apartment buildings which were noted for high proportions of unoccupied dwellings. These indicate both holiday rentals and holiday properties.

The population density per apartment of 1.00 was adopted. A summary of the population outcomes is contained in Table 35.

Table 35: Population Outcome Pelican Waters & Kings Beach

	Site Area	GFA	Apartments	Population
Pelican Waters Retirement Village	5,000m <sup>2</sup>	7,828m <sup>2</sup>	60	81
Saltair Rise	1,521m <sup>2</sup>	3,783m <sup>2</sup>	35	35

The site area and town planning was different between the two types of properties. This has influenced the built form outcome and ultimately the total population.

Analysis of both developments was from the following sources.

(Raunik, 2018)

(Wiltshire Stephens Architecture, 2017)

There is a full reference list at the end of the document.

## Case Study 6 Bilinga & Coolangatta, Queensland

Retirement Village	Pavilion 2 Bilinga	MCU/2019/388
Residential	Zinc Apartments Coolangatta	MCU/2016/01729

This case study examines two properties in the suburbs of Bilinga and Coolangatta. Pavilion 2 is the second stage of The Pavilions situated at 59 Golden Four Drive, Bilinga, is operated by Aura Holdings Pty Ltd and completed 2021. Zinc Apartments was developed by BIG Projects Pty Ltd is situated at 13-15 Haig Street, Coolangatta, completed 2020.

Pavilion 2 comprises the second tower of a two-tower retirement village development. The building is 10 levels and contain 73 units. There is ground floor retail and medical services, plus community facilities, gymnasium and outdoor swimming pool. There is a rooftop community garden and open terrace. There are two levels of underground car parking.

Zinc Apartments comprises a 9-level tower with 73 units. There is an outdoor swimming pool accessed from ground-level space with a sauna and recreational amenities. There are two levels of underground car parking.

Bilinga and Coolangatta are coastal residential suburbs in the City of Gold Coast Municipality and are situated 91 km south-east of the Brisbane CBD. There are shopping and civic facilities in the Coolangatta business area plus medical facilities with the Tweed Hospital. Both suburbs have an ageing demographic, the median age for Bilinga was 47 and for Coolangatta was 50 .

### Ratio of Site Area and Gross Floor Area

Details on the zoning, site area, GFA and FSR are contained in Table 36.

Table 36: Bilinga & Coolangatta Zoning and FSR

Property	Site Area	GFA	FSR	Zoning
Pavilion 2	2,195m <sup>2</sup>	11,038m <sup>2</sup>	5.03	Neighbourhood centre
Zinc Apartments	1,771m <sup>2</sup>	6,532m <sup>2</sup>	3.69	Medium density residential

Each property has a different zoning, which is reflected in the FSR.

### Apartment Yield & Accommodation

The retirement village has a combination of one-, two- and three-bedroom apartments. Ground floor apartments have courtyard terraces and upper-level apartments have balconies. The residential development comprises one and two-bedroom apartments and all apartments have balconies. Details on the level of accommodation for each property and the proportion is contained in Table 37.

<sup>2</sup> Australian Bureau of Statistics, 2016. *Census of Population and Housing*. Canberra: Australian Bureau of Statistics

Table 37: Bilinga & Coolangatta Accommodation Levels and Proportion of Total

Accommodation	Pavilion 2	Zinc Apartments		
One bedroom	8	11%	8	11%
Two bedroom	46	63%	65	89%
Three bedroom	19	26%	–	–
Total	73		73	

The retirement village contains a greater variety of levels of accommodation compared to the residential development.

The residential development is marketed as a holiday property. There is a ground floor two-bedroom managers apartment with internal access to a reception desk. This apartment has been included in the apartment count.

### Internal Apartment Area & Gross Floor Area

The average and median internal areas and external living areas for apartments in each building is summarised in Table 38.

Table 38: Bilinga & Coolangatta Average and Median Areas and Efficiency Ratio

	Pavilion 2		Zinc Apartments	
	Average	Median	Average	Median
One bedroom	74m <sup>2</sup>	74m <sup>2</sup>	65m <sup>2</sup>	65m <sup>2</sup>
Two bedroom	104m <sup>2</sup>	111m <sup>2</sup>	81m <sup>2</sup>	82m <sup>2</sup>
Three bedroom	136m <sup>2</sup>	140m <sup>2</sup>	–	–
Ground floor courtyard/terraces	55m <sup>2</sup>	54m <sup>2</sup>	–	–
Balconies	19m <sup>2</sup>	17m <sup>2</sup>	11m <sup>2</sup>	11m <sup>2</sup>
Efficiency ratio	72%		89%	

For one and two-bedroom apartments, these are larger in the retirement village compared to the residential development. Two-bedroom apartments in the retirement village included a study or computer area. Two-bedroom apartments in both properties have two bathrooms. A closer examination of the building plans showed that the retirement village bathrooms are larger (which improves accessibility).

Ground floor units in the retirement village have courtyard terraces which are relatively large. Upper-level units in in both properties have balconies, these are larger in the retirement village compared to the residential development.

The retirement village has a lower efficiency ratio with 72% when compared to the residential development with 89%.

Both properties comprise a single tower serviced with two lifts. It was not possible to determine the width of the corridors for either building.

## Community Facilities

The retirement village has community facilities on the ground level and rooftop. The ground floor facilities comprise a multipurpose room, gymnasium, male and female amenities with an area of 174 m<sup>2</sup>. There is an outdoor swimming pool with barbecues and landscaped terraces. A community garden is situated at the roof level, accessible only by stairs.

The retirement village has on the ground floor two healthcare spaces of 50 m<sup>2</sup> and 70 m<sup>2</sup>, plus a shop of 42 m<sup>2</sup>. These are for the use of residents and the public.

The residential development has a swimming pool, recreation area, spa, sauna, male and female change rooms and unisex accessible toilet on the ground level. In addition, there is an outdoor barbecue area.

## Car Parking

The retirement village has two levels of basement car parking. The residential development has two levels of basement car parking and one level of ground floor car parking. The total number and the type of car bays for both buildings is summarised in Table 39. Ordinary car bays include visitor and retail car bays. Both properties varied in the total number and the type of car bays.

Table 39: Car Parking Bilimga & Coolangatta

	Total Car Bays	Ordinary	Tandem	Wheelchair Accessible
Pavilion 2	116	73	40	3
Zinc Apartments	106	76	20	–

There is a difference in size of car bays between the two properties.

Car bays in the retirement village ranged in width between 2.4 m and 2.6 m, the depth was not available. Manoeuvring distance ranged between 6.0 m and 6.2 m.

Car bays in the residential development ranged in width between 2.4 m and 2.7 m, the depth was 5.4 m. Manoeuvring distance ranged between 5.8 m and 6.35 m.

## Other Features

The retirement village has three rooms with 54 storage cages on Level 1, plus 11 storage cages in the basement. There is designated parking for 30 bicycles in the basement.

The residential development has 39 storage cages in the basement. There is designated parking for 25 bicycles in the basement.

## Floor Height

For the retirement village the floor height is 3.5 m for the ground level, 3.0 m for the upper levels and 3.15 for the penthouse level, for the residential development the floor height was 3.61 for the ground level and 2.95 for the upper levels.

The residential development is situated in a flood affected zone and the higher floor height for the ground level took account of the flood zone requirements.

## Population

The average household size in the suburbs of Bilinga, was 2.0 and Coolangatta was 1.8 (Australian Bureau of Statistics, 2016). This average includes both detached dwellings and apartments. Three SA1 census districts were analysed details are in Table 40. Each of districts included some detached dwellings, however over 90% of the dwellings were apartments.

The percentage of unoccupied private dwellings in Bilinga was 24.9% and Coolangatta was 21.2%

Table 40: Population Analysis Bilinga & Coolangatta

SA1	Location	Total dwellings	Total population	Average household size	Unoccupied private dwellings
3123007	Bounded by Haig Street, Musgrave Street, Milner Street and Coolangatta Road	641	497	1.29	25.7%
3123005	Bounded by Musgrave Street, Haig Street and Coolangatta Road	491	380	1.29	24.1%
3123106	Bounded by George Street, Pacific Parade, Johnston Street and Golden Four Drive	549	342	1.61	21.6%

The population density per apartment of 1.30 was adopted. A summary of the population outcomes is contained in Table 41.

Table 41: Population Outcome Bilinga & Coolangatta

	Site Area	GFA	Apartments	Population
Pavilion 2	2,195m <sup>2</sup>	11,038m <sup>2</sup>	73	98
Zinc Apartments	1,771m <sup>2</sup>	6,532m <sup>2</sup>	73	95

The site area and town planning was different between the two types of properties. This has influenced the built form outcome and ultimately the total population.

Analysis of both developments was from the following sources.

(O'Neill Architecture, 2020)

(Zone Planning Group, 2016)

There is a full reference list at the end of the document.

## Conclusion

Retirement village operators and residential developers design and build to meet the requirements of their respective residents and purchasers. An older person enters a retirement village with different requirements compared to a purchaser of a residential apartment, whether they are an investor or owner occupier. These differences have been identified in the design of individual apartments and the overall property type. It does not mean that one is better than the other.

Apartments in retirement villages provide accessible living areas, bathrooms and kitchens. The buildings have (or provide access to) community facilities that offer social interaction with other residents and the wider community. Apartments in residential developments provide somewhere to sleep, eat and wash. The residents are not demanding meaningful social interaction with others in the building.

In Australia, the legal structure of retirement village living places a greater cost impost on operators with regard to maintaining buildings compared to residential developers. Therefore, retirement village operators are mindful when designing and constructing a building that they will be responsible for ongoing capital costs. This is in contrast to residential developers who achieve their return on sale to investors or owner occupiers and (once out of warranty) have little interest in longer term capital costs.

The built form of retirement villages is designed to appeal to older people looking for their “forever home”, the built form of a residential development is designed to appeal to investors (and ultimately tenants) and owner occupiers. These two groups have distinctly different requirements, and the built form reflects these differences.



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