

Deliverable 1: Requirements

The University of New South Wales

**SENG2021 2019 T1
BEAMS**

MOZAMEL ANWARY	Z5209948
BEI CHEN	Z5117096
PAUL GRACE	Z5208656
SUMAYYAH HO	Z5210234
MARIYA SHMALKO	Z5209377

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Introduction

There are many variables that ultimately shape a buyer's decision when purchasing property. Whilst some buyers may consider purchasing property for residential purposes, others may be looking to purchase property for investment. Although there already exists web-apps which allow potential buyers to browse listings in various areas, they lack consistent information regarding the infrastructure and facilities in the area, and often do not mention potential events or trends which can affect a property's value (such as proximity to a flood zone).

Information buyers would consider relevant include:

- Average price of property
- Neighbourhood statistics
 - Crime Rate
 - Demography (as a percentile, current and over time)
 - Age
 - Ethnicity
 - Percentage of tenants to homeowners
 - Occupied vs vacant residences
 - Average income of households
- News
- Infrastructure
 - Urban/rural
 - Schools
 - Transport
 - Public Facilities (police stations, hospitals, shops, parks, toilets, waste management)
 - Construction

This information for a given suburb should be displayed unambiguously and easily compared with other locations.

Problem statements

1. There is no central hub for housing market data combined with suburb profiles on the web.
2. There is an abundance of complicated financial information and decisions related to real estate. This includes:
 - a. Determining the break-even point for investors when renting out property.
 - b. Identifying realistic saving goals, given government bond rates and consumer price index (CPI).
3. Current available real estate data is difficult to understand for the general user and not user friendly.
4. Housing market data lacks relevant graphical representations.
5. There is no collective source for news in the given area.
6. There is no cohesive demographic data for suburbs.
7. There is a lack of data on suburban infrastructure integrated with housing market data.
8. There is no application that suggests the optimal time to purchase a property based on user preferences.

Requirements and features

Requirements with related features

- 1) User is able to search areas by suburb or postcode and refine search by property criteria.
 - a) User can search for suburb by name or postcode
 - b) User can filter search depending on property criteria.
- 2) There should be a clear graphical representation for housing market data.
 - a) User can view graphical representation of suburb's housing market trends after searching for the suburb.
- 3) There should be a suburb profile including demographic data, infrastructure, schools and transport.
 - a) User can access demographic data.
 - b) User can access infrastructure data.
 - c) User can access school-related data.
 - d) User can access transport data.
- 4) News filtered by suburb should be visible on the suburb page.
 - a) User can view the news relevant to a suburb on the suburb page.
- 5) Website should suggest an optimal time to purchase in a certain area with given criteria, based off real estate market trends and predictions.
 - a) User can view real estate market trends that indicate the most optimal time to purchase a property.
- 6) Website should show suburb area on a map.
 - a) User can view suburb area on a map.

Requirement 1: User is able to search areas by suburb or postcode and refine search by property criteria.

Feature 1.1: User can search for suburb by name or postcode.

US ID	1.1.0
Priority	Critical for MVP
Estimate	3 SP
User Story	
As a user, I want to search for suburbs by their name or postcode so that I can find the most relevant search results for me.	
Given that I am at the search webpage When I type in a suburb name or postcode Then I can view my preferred suburb(s).	

Feature 1.2: User can filter search depending on property criteria.

US ID	1.2.0
Priority	Critical for MVP
Estimate	2 SP
User Story	
As a user, I want to select the property type which is most suitable for me so that I can narrow my search and find information on properties most relevant to my preferences.	
Given that I have searched for a suburb by name or postcode, When I select my preferred property type. Then I am shown a list of suburbs with my filters remembered. When I select my preferred suburb, Then I am shown my preferred suburb and statistics about those property types.	

US ID	1.2.1
Priority	Critical for MVP
Estimate	2 SP
User Story	
As a user, I want to select the price range which is most suitable for me so that I can refine my search and find information on properties most appropriate to my preferences.	
Given that I have searched for a suburb by name or postcode. When I select my preferred price. Then I am shown a list of suburbs with my filters remembered. When I select my preferred suburb, Then I am shown my preferred suburb and statistics in the price range.	

US ID	1.2.2
Priority	Critical for MVP
Estimate	2 SP
User Story	
As a user, I want to select the number of bedrooms a property has so that I can refine my search and find information on properties most appropriate to my preferences.	
Given that I have searched for a suburb by name or postcode. When I select my preferred number of bedrooms, Then I am shown a list of suburbs with my filters remembered. When I select my preferred suburb, Then I am shown my preferred suburb and statistics about properties with those many bedrooms.	

US ID	1.2.3
Priority	Critical for MVP
Estimate	2 SP
User Story	
As a user, I want to select the number of bathrooms a property has so that I can refine my search and find information on properties most appropriate to my preferences.	
Given that I have searched for a suburb by name or postcode. When I select my preferred number of bathrooms. Then I am shown a list of suburbs with my filters remembered. When I select my preferred suburb, Then I am shown my preferred suburb and statistics about properties with that many bathrooms.	

US ID	1.2.4
Priority	Critical for MVP
Estimate	2 SP
User Story	
As a user, I want to select the number of cars a property can have so that I can refine my search and find information on properties most appropriate to my preferences.	
Given that I have searched for a suburb by name or postcode. When I select my preferred number of cars. Then I am shown a list of suburbs with my filters remembered. When I select my preferred suburb, Then I am shown my preferred suburb and statistics about properties with that many car accommodations.	

Requirement 2: There should be a clear graphical representation for housing market data.

Feature 2.1: User can view graphical representation of suburb's housing market trends after searching for the suburb.

US ID	2.1.0
Priority	Critical for MVP
Estimate	2 SP

User Story

As a user, I want an easy to read, graphical representation of the average property price in the suburb I am researching **so that** I can identify trends and improve my decisions.

Given that I have searched for my preferred suburb(s)

When I click on my preferred suburb,

Then I am shown a graphical representation of the average property price in the suburb.

US ID	2.1.1
Priority	Critical for MVP
Estimate	2 SP

User Story

As a user, I want graphical representation of the average property selling price or renting price in the suburb I am researching according to the filters I have selected **so that** I can filter the information according to my preferences.

Given that I have searched for my preferred suburb(s)

When I click on my preferred suburb,

Then I am shown a graphical representation of the average property, filtered by my criteria, price in the suburb.

Requirement 3: There should be a suburb profile including demographic, infrastructure, schools and public transport information.

Feature 3.1: User can access demographic data.

US ID	3.1.0
Priority	Critical for MVP
Estimate	2 SP

User Story

As a user, I want to access demographic data, such as crime rate, family type, median age and average income, on my preferred suburb(s) **so that** I can find the best property most appropriate to my lifestyle.

Given that I am viewing a suburb profile page

When I click on the demographic data tab

Then I am shown an easy to understand representation of demographic data in the suburb.

Feature 3.2: User can access infrastructure data.

US ID	3.2.0
Priority	High
Estimate	2 SP

User Story

As a user, I want to access infrastructure data, such as medical facilities, shopping centres and parks, on my preferred suburb(s) **so that** I can find the best suburb most appropriate to my lifestyle.

Given that I am viewing a suburb profile page

When I click on the infrastructure data tab

Then I am shown an easy to understand representation of infrastructure data in the suburb.

Feature 3.3: User can access schools within the suburb and surrounding area and their data.

US ID	3.3.0
Priority	Critical for MVP
Estimate	2 SP
User Story	
As a user, I want to view schools within my preferred suburb(s) so that I can find the best suburb most appropriate to my lifestyle.	
Given that I am viewing a suburb profile page When I click on the education data tab Then I am shown an easy to understand representation of education data in the suburb.	

Feature 3.4: User can access data about available public transport in the area.

US ID	3.4.0
Priority	High
Estimate	2 SP
User Story	
As a user, I want to access data about public transport in my preferred suburb(s) so that I can find the best suburb most appropriate to my lifestyle.	
Given that I am viewing a suburb profile page When I click on the public transport data tab Then I am shown an easy to understand representation of different public transport options in the suburb.	

Requirement 4: News filtered by suburb is visible on the suburb page.

Feature 4.1: User can view the news relevant to a suburb on the suburb page.

US ID	4.1.0
Priority	Medium
Estimate	1 SP

User Story

As a user, I want to view recent news headlines relevant to a suburb **so that** I can be aware of the local community's culture, achievements and/or hazards.

Given that I have searched for my preferred suburb(s)

When I click on the suburb's profile page.

Then I am shown recent news headlines specific to the suburb and surrounding area.

US ID	4.1.0
Priority	3
Estimate	1 SP

User Story

As a user, I want to expand recent news relevant to a suburb **so that** I can further my understanding of recent events within the region.

Given that I am on the suburb's profile,

When I click on the news headline that interests me,

Then I am redirected to the headline's source website.

Requirement 5: Website should suggest optimal time, based off of real estate market trends and predictions, to purchase in the area with the given criteria.

Feature 5.1: User can view real estate market trends that indicate the most optimal time to purchase a property.

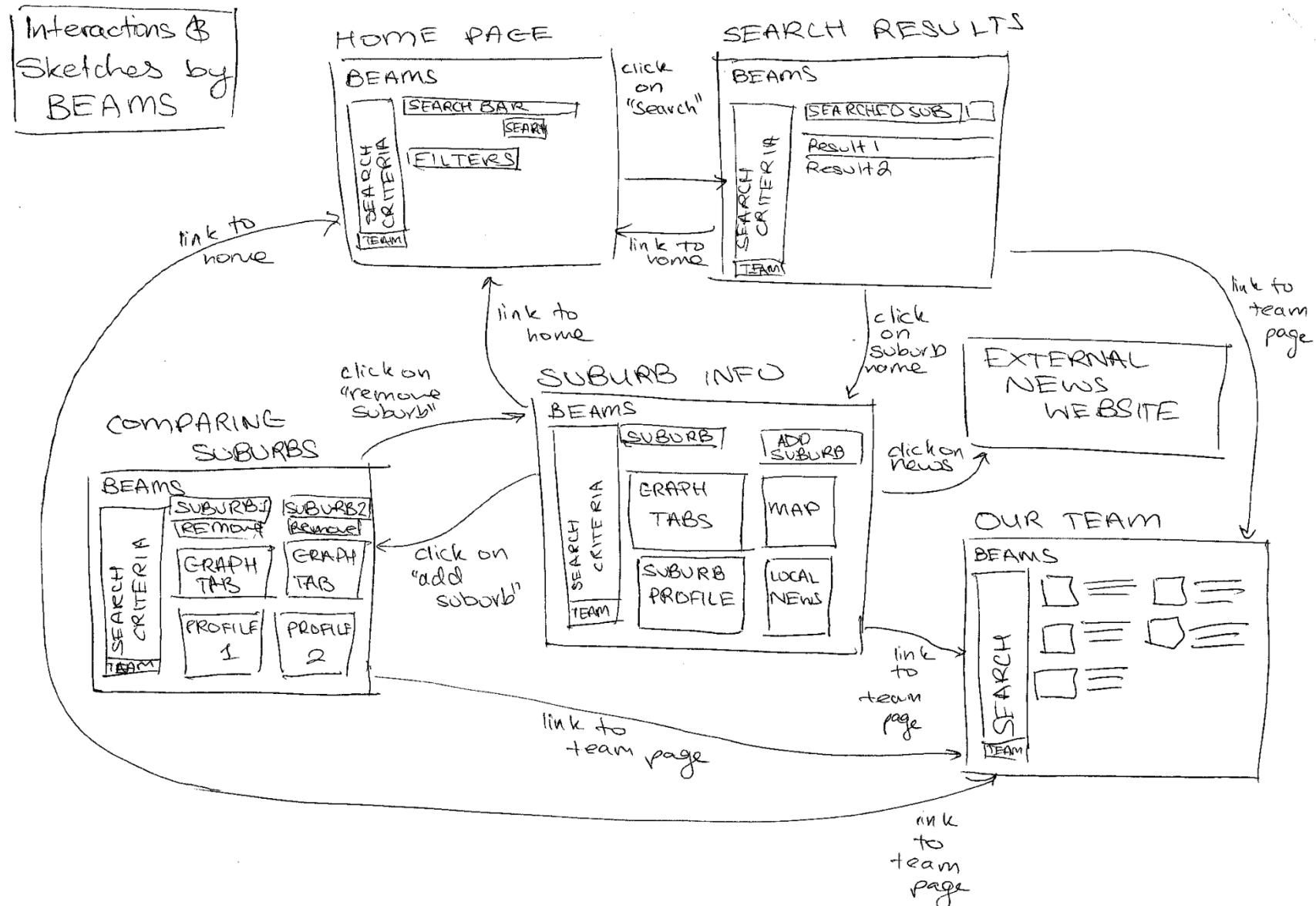
US ID	5.1.0
Priority	High
Estimate	4 SP
User Story As a user, I want to be given an accurate estimate as to when to buy a property in a given suburb so that I can make a financially mature decision.	
Given that I am viewing a suburb profile page When I view the house market data. Then I am shown the optimal time to purchase a property in the preferred suburb.	

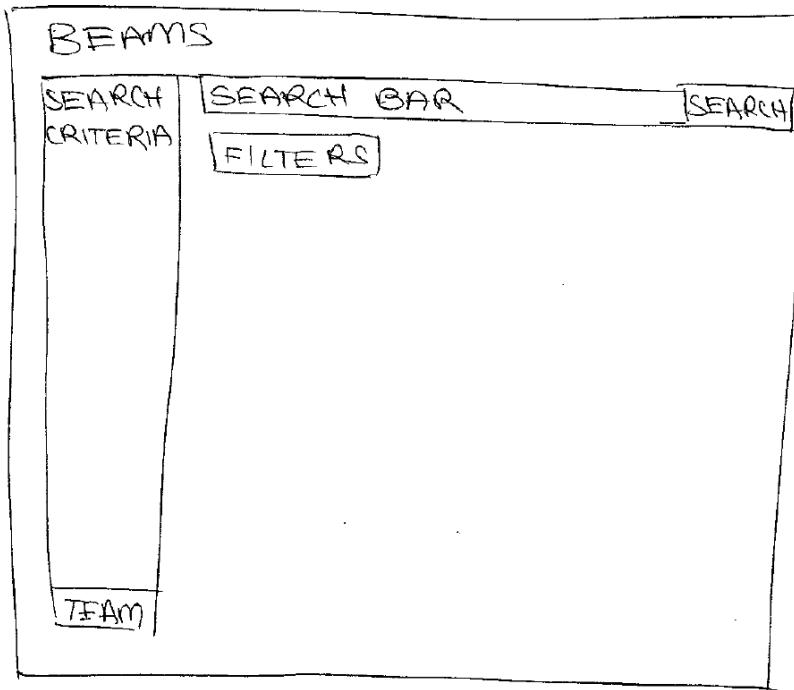
Requirement 6: Website should show suburb area on a map.

Feature 6.1: User can view suburb area on a map

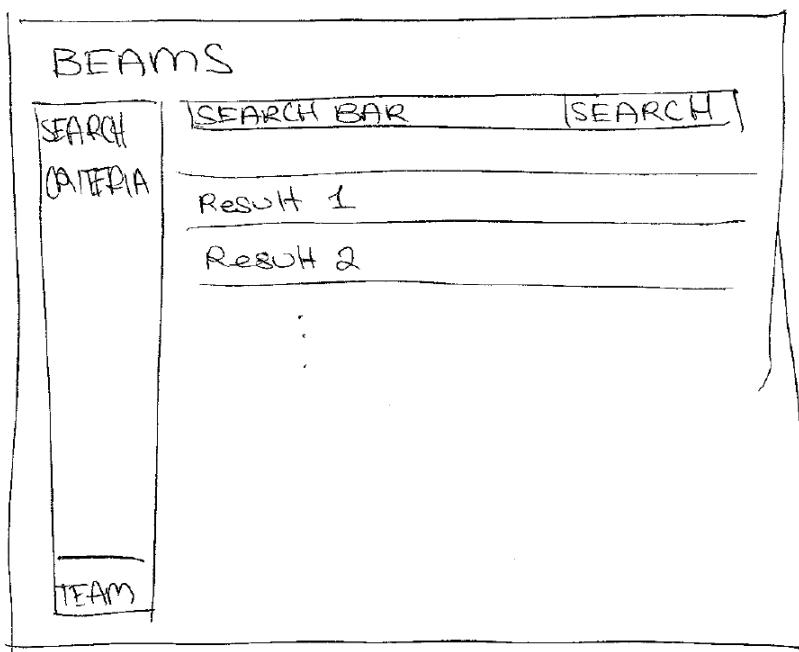
US ID	6.1.0
Priority	High
Estimate	3 SP
User Story	
As a user, I want to view the suburb area on a map so that I can have a visual idea of the area geographically.	
Given that I have searched for my preferred suburb(s) When I click on the suburb's profile page. Then I am shown a map with the suburb's area outlined.	

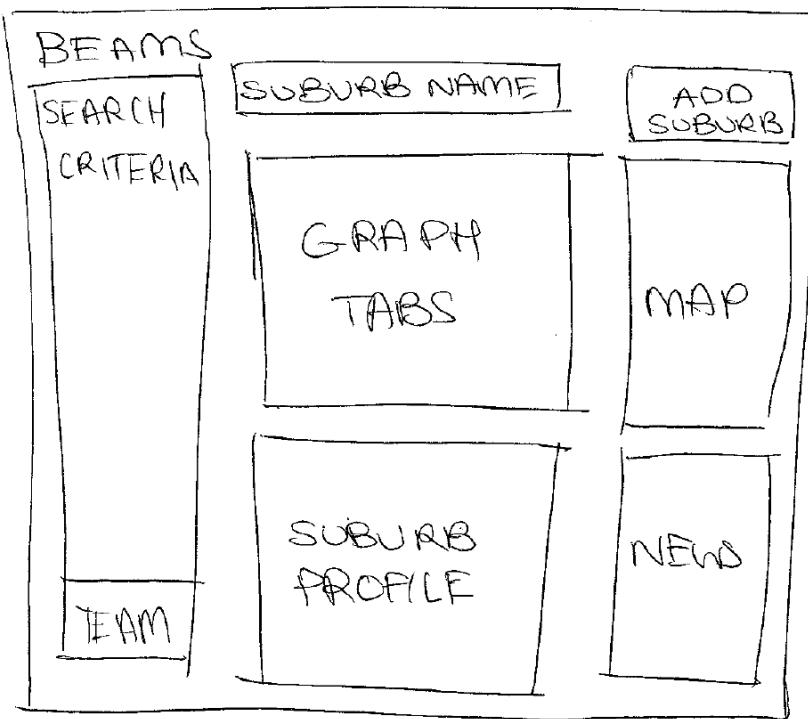
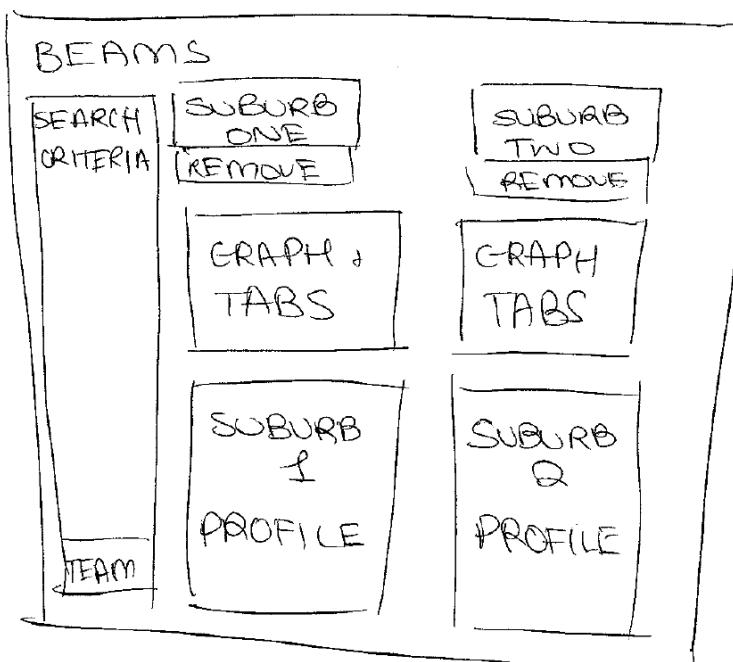
Low Fidelity Prototype



HOME PAGE

SEARCH RESULTS



SUBURB PAGECOMPARISON OF 2 SUBURBS

SUBURB PROFILE DETAILSLOCATED ON "SUBURB PAGE"PROFILEAGE
DISTRIBUTION

FAMILY

OWNER VS
RENTER

TRANSPORT

✓

INFRASTRUCTURE

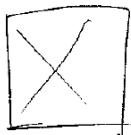
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EDUCATION

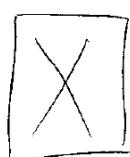
✓

OUR TEAM

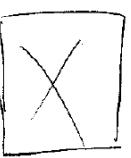
BEAMS

SEARCH
CRITERIA

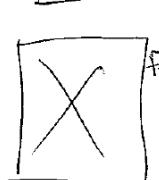
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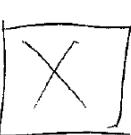
Person 4



Person 2



Person 5



Person 3

TEAM

High Fidelity Prototype

<https://xd.adobe.com/view/ed8a480d-103e-4af9-55ee-c4b8e708517e-9bbb/?fbclid=IwAR3Ikjyps3Oy7LHyjgAzWkYOV3sD6F2GqQ1iihiIiTxDI-vurJYPITLlxYOc&fullscreen>

BEAMS

Property and Suburb Analysis



Search by
Suburb



Compare
Suburbs



Our Team



Search for first suburb...

Search

Filters

BEAMS

Property and Suburb Analysis



Search by Suburb 

Compare Suburbs 

Our Team 

Compare Kingsford with...

Suburb

+ Maroubra

Postcode

2035

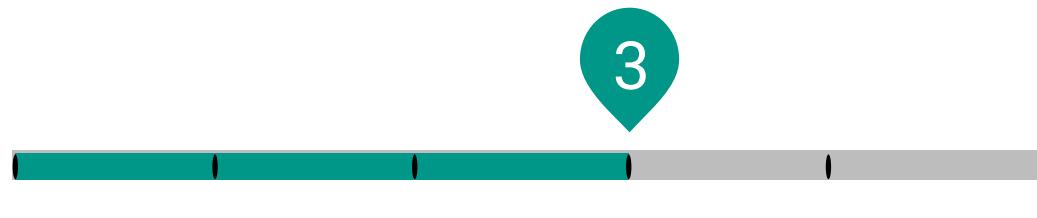
Randwick

Search 

Public Facilities



Beds



Baths



Cars



Type

- Any
- Apartment
- House
- Land

Price



Cancel 

Add 

BEAMS

Property and Suburb Analysis



Search by
Suburb 

Search by Suburb, Postcode... 

Compare
Suburbs 

Filters 

Our Team 

BEAMS

Property and Suburb Analysis



Search by Suburb 

Randwick 

Compare Suburbs 

Suburb Postcode Public Facilities

Maroubra 2035 

Kingsford 2035 

Our Team 

BEAMS

Property and Suburb Analysis



Search by Suburb 

Compare Suburbs 

Our Team 

Compare Maroubra with...

Suburb

+ Kingsford

Postcode

2035

Randwick

Search 

Public Facilities



BEAMS

Property and Suburb Analysis



- Search by Suburb 
- Compare Suburbs 
- Our Team 

Randwick	<input type="text"/>	Search 
Suburb	Postcode	Public Facilities
+ Maroubra	2035	
+ Kingsford	2035	



Search by Suburb

Compare Suburbs

Analytics

GRAPH TABS

Profile

Classification: Suburban, Residential

Age Distribution

Children (<9)	10%
Teens (12-18)	50%
Adults (18-65)	30%
Pensioners (65+)	10%

People per Household

1-2 per house	10%
3-4 per house	50%
5-6 per house	30%
7+ per house	10%

Owner vs Renter

Owners	68%
Renters	32%

Nearby Facilities

Transport

Infrastructure

Education

Our Team

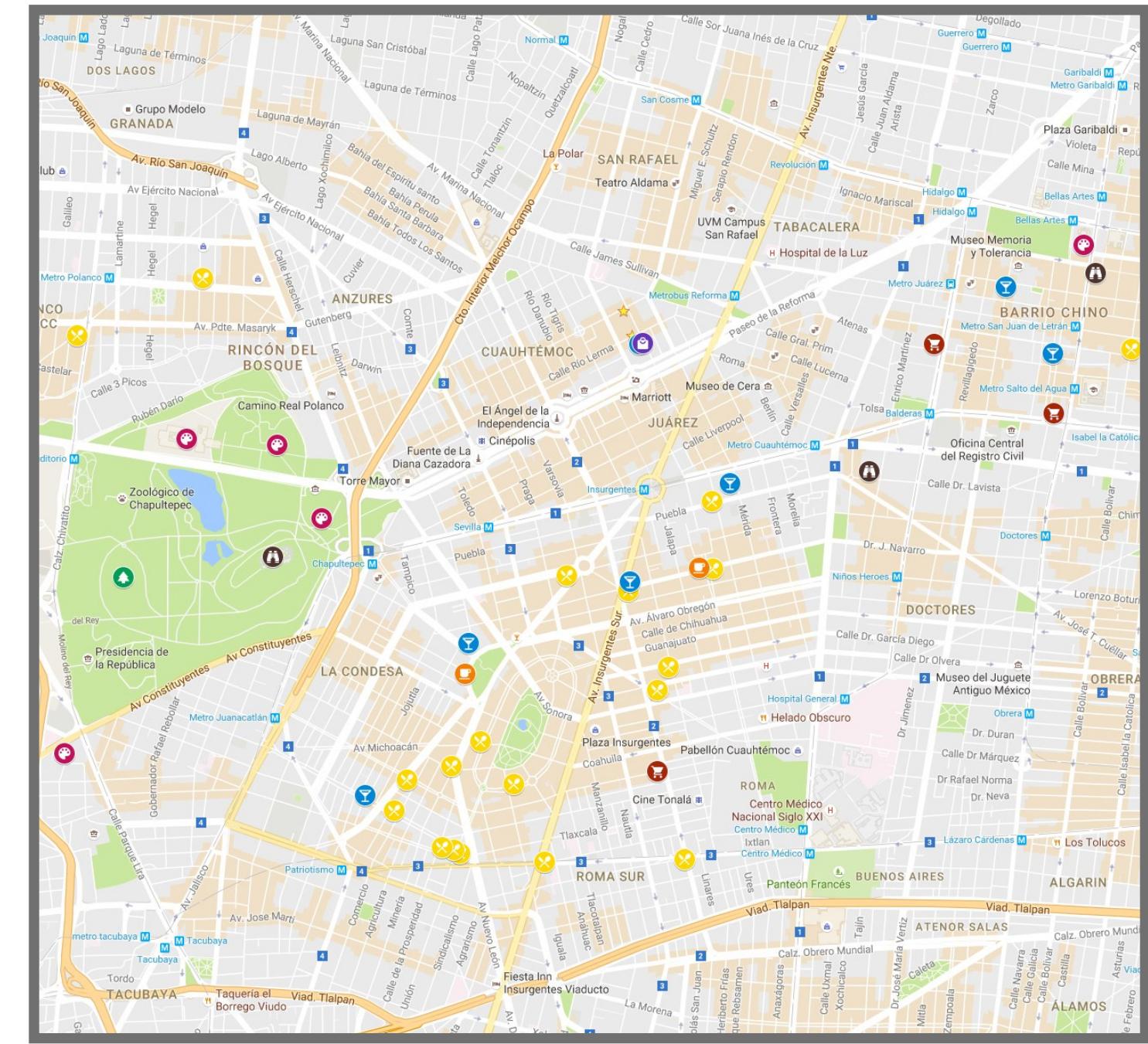


Maroubra, 2035

Searching for: Apartment | 3 Bed | 2 Bath | 1 Car | \$800k - \$3.9m

Compare with another suburb

Location



GRAPH TABS

Local News

20 minutes ago

Coles punts pubs and pokies in \$200m joint venture deal

22 minutes ago

'You're sacked,' Labor leader Michael Daley tells Alan Jones and SCG Trust

30 minutes ago

Self-reporting Cronulla chief executive steps down

1 hour ago

Ben Affleck opens up about rehab: 'I had a problem and I wanted to address it'



Search by Suburb

Compare Suburbs

Analytics

GRAPH TABS

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Nearby Facilities

Transport

Infrastructure

Education

Our Team

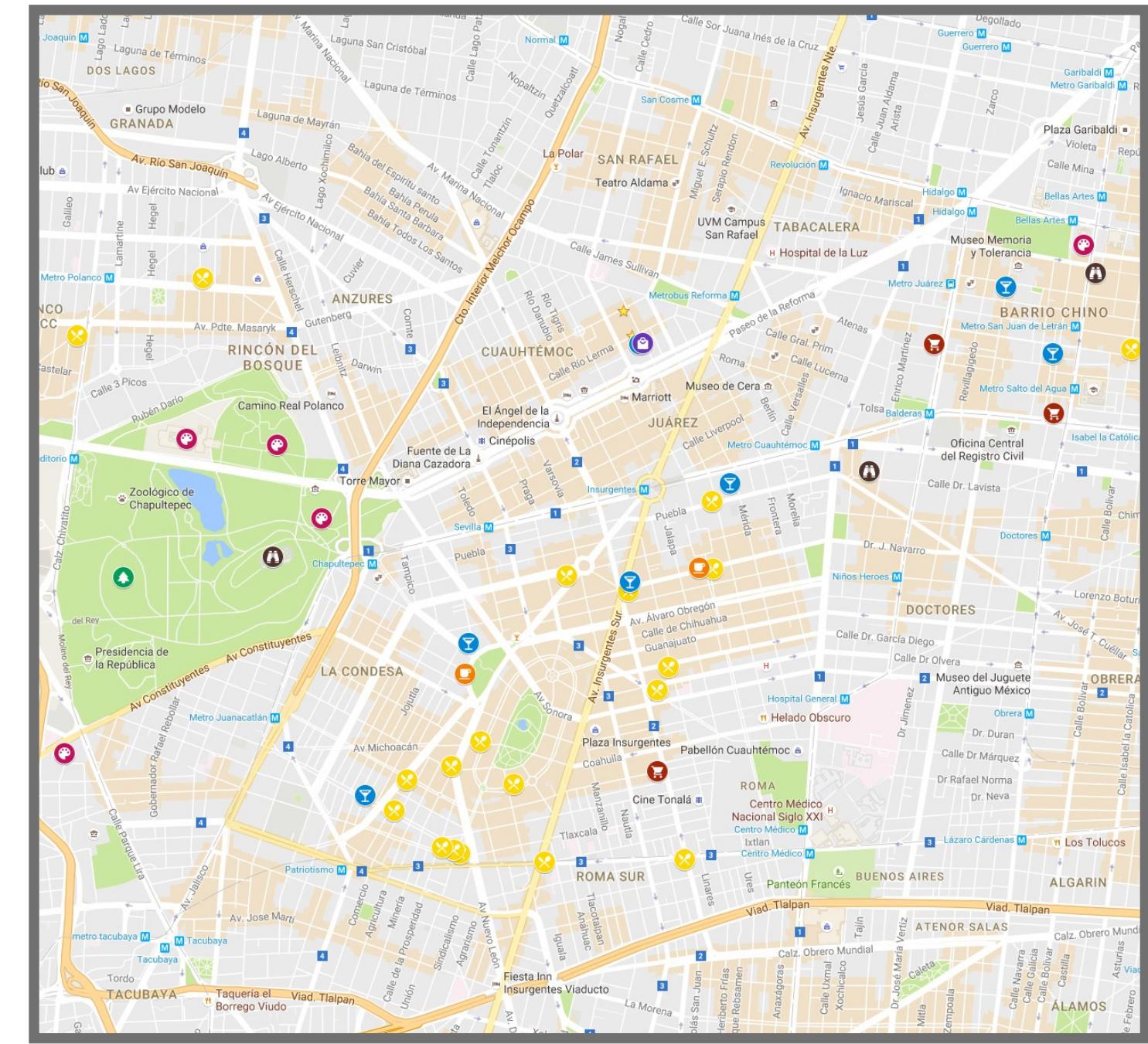


Kingsford, 2032

Searching for: Apartment | 3 Bed | 2 Bath | 1 Car | \$800k - \$3.9m

Compare with another suburb

Location



GRAPH TABS

Local News

20 minutes ago

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22 minutes ago

'You're sacked,' Labor leader Michael Daley tells Alan Jones and SCG Trust



30 minutes ago

Self-reporting Cronulla chief executive steps down



1 hour ago

Ben Affleck opens up about rehab: 'I had a problem and I wanted to address it'





Search by Suburb

Compare Suburbs



Maroubra, 2035

[Remove suburb](#)



GRAPH TABS



Kingsford, 2032

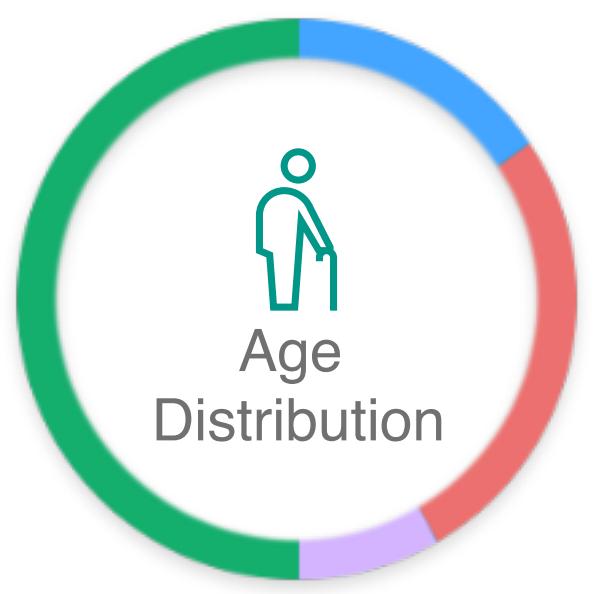
[Remove suburb](#)



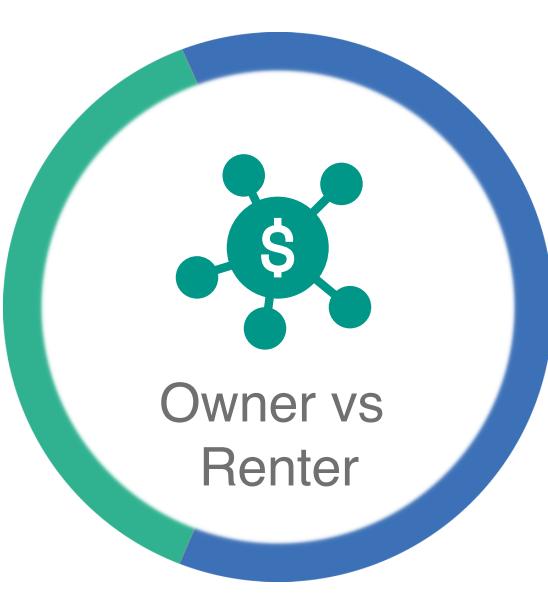
GRAPH TABS



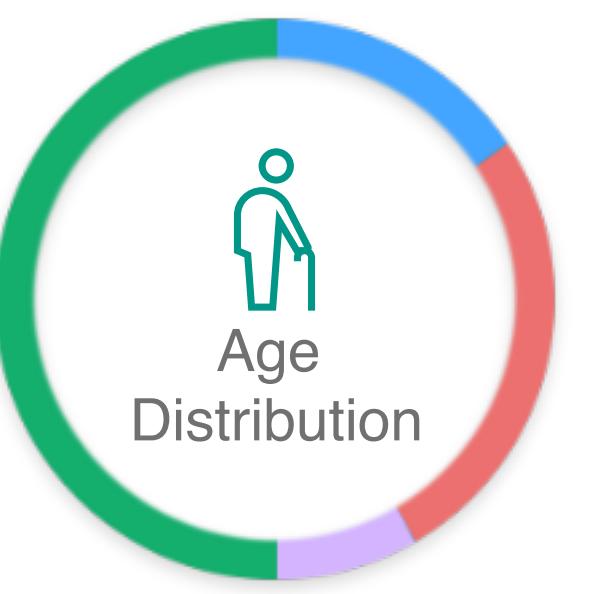
Classification: Suburban, Residential



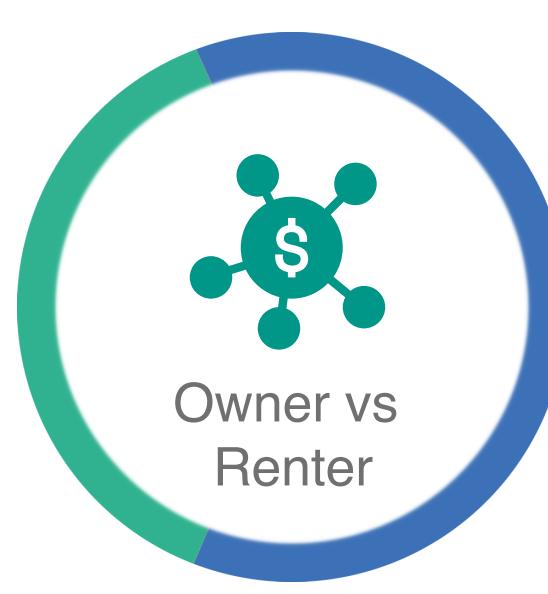
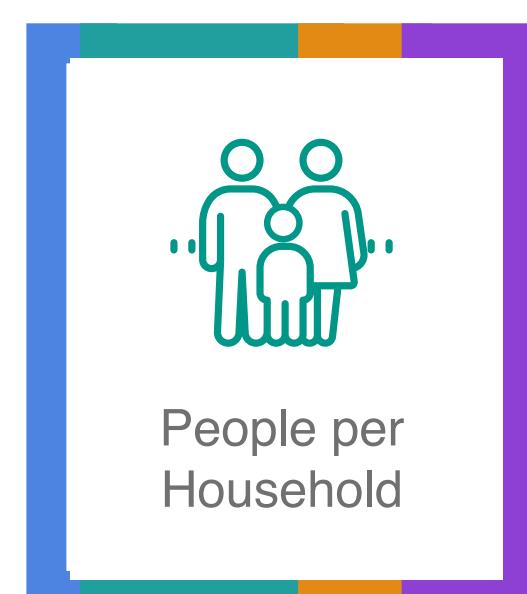
Children (<9)	10%	1-2 per house	10%	Owners	68%
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Classification: Suburban, Residential



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Nearby Facilities



Transport



Infrastructure



Education



Nearby Facilities



Transport



Infrastructure



Education



BEAMS

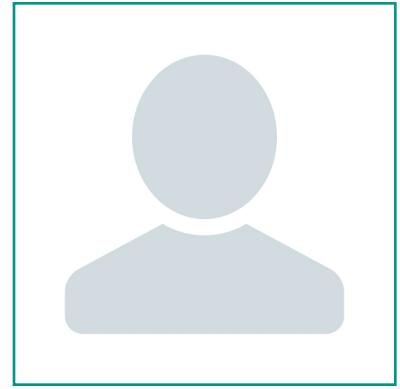
Property and Suburb Analysis



Search by
Suburb

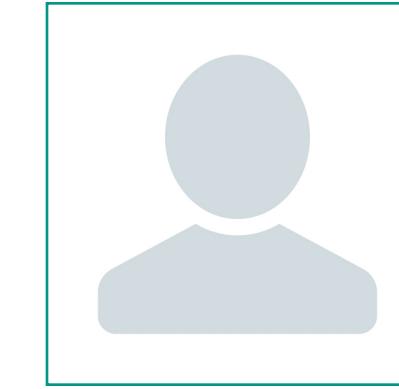


Compare
Suburbs



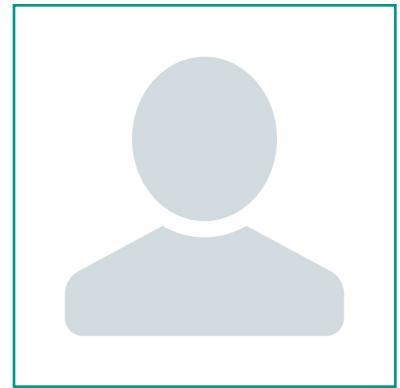
Person A

Description text text text text text text text txt
text text text text text



Person D

Description text text text text text text text text txt
text text text text text



Person B

Description text text text text text text text txt
text text text text text



Person E

Description text text text text text text text txt
text text text text text



Person C

Description text text text text text text text txt
text text text text text

Our Team

