

BUSINESS AS *Unusual*

student ideas
competition

imagining a future Australian city

Tell us about your future city.

1. What is the name of your city?

Toodyay (Duidgee is the first nations name for the place)

2. Where is your city located?

Balladong Noongar land

Western Australia in the Wheatbelt

Latitude 31° 33' S Longitude 116° 28' E

postcode 6566

3. What is the ideal population of your city?

90000

4. What is the impetus behind your city?

Compared to the rest of the Avon Arc, of which Toodyay (Duidgee, the first nations peoples name of the place) is a part. It was recognised from the period 2000-2010, to have a higher rainfall and a population increase by 10% with Toodyay (Duidgee) higher population density than the Avon Arc other towns.

Unfortunately, there has also been a high level of local species extinctions due to earlier clearing of native bushland. In addition, using fertilisers for farming, high levels of nitrogen and phosphorus are being carried into the Swan and Avon River through groundwater.

Before 2020, older generations seeking retirement were moving from the city to regional areas within the Avon Arc for a 'tree-change', and farmers seeking retirement were moving from isolated areas to the same towns within the Avon Arc. Younger generations were also seeking the benefits of living regionally, and this had become feasible with the flexibility given through working online - known as the 'e-change effect'.

"Give me a home amongst the gum trees!" Since the global pandemic, escaping to the regions due to increased health risks and border restrictions is more likely to occur in bigger cities such as Perth; a 'flee-change effect' happened. As a result, a renewed focus on the health sector, sustainability and liveability of cities and towns has occurred. Before this, regional and rural communities were experiencing issues with maintaining their population sizes and experiencing skills shortages.

Back in 2021, there was an urgent call for plans to develop the regional areas of southwest Australia. Predictions of continued urban sprawl into rural and agricultural areas were not sustainable based on the population increase due to the availability of land that already had competing uses. In addition, with the effects of climate change already impacting the environment at that time, there was a desire to protect the environment and ecosystems by limiting urban sprawl.

5. Describe the design of the city.

The global pandemic of 2020 created an opportunity to consider a planning and design response for increased population size that would work for the Avon Arc region. The challenge was to avoid the simplistic transference of planning and development policies previously created for metropolitan cities, which could transfer the ills of capital cities to regions, exacerbate unsustainable development, and heighten socio-economic inequalities.

The urban form in most of the Avon Arc towns had been stagnant for many decades before 2022. Rather than applying the traditional city developments and planning, the Alliance considered what was unique to Toodyay (Duidgee), including the picturesque landscape and a New Wool Mill and Research Centre. As a result, Toodyay (Duidgee) has brought pockets of urbanisation into the natural environment instead of searching for nature pockets in the urban environment.

The Toodyay (Duidgee) of 2100 creates buildings following the principles of nature with archiborescent structures closed by a film, a translucent bio textile, insulating and capturing solar energy. In addition, the presence of futuristic-looking new windmills, solar collectors and innovative travel vehicles effectively contributes to preserving the existing architecture of the past, emphasising the inspiring vision of the Australian dream city!

6. How does your city embody an alternative Australian dream?

A direct effect of the global pandemic has recognised the need to be more self-sufficient and become less reliant on the worldwide supply chain by creating niche manufacturing and research opportunities specific to the place. For example, the Avon Arc Alliance (Alliance) consists of Avon Valley and the Wheatbelt towns, building on each town's strengths rather than competing against one another.

Previously Toodyay (Duidgee) did not have a wool mill; the Alliance identified it as a city that could successfully process wool due to its agrarian history. Changing farming techniques created a decreasing reliance on produce from outside the region. New techniques also reduce damaging fertilisers carried into the Swan and Avon River through groundwater.

The Alliance built greenhouses to control the environment in which produce was farmed and to keep out insects, combatting the adverse effects of extreme weather events and severe temperatures (caused by climate change) on farming. In addition, new residential building designs include north-facing terraces with gardens, which give residents the freedom to cultivate their crops.

A reforestation project estimated it would require 1.2 million hectares of land to offset the carbon emissions from Perth, a place with a population of 3 million in 2050. Part of this reforestation project includes the installation of 8,1000 hectares of co-located wind turbines and photovoltaic surfaces when environmental engineers identified that the Avon Arc, with its open plains and undulating hills, gave the best greenfield location. This local renewable power generates lower-cost energy sources, and the reforestation project will offset emissions, providing a return to Avon Arc residents who invest in the scheme.

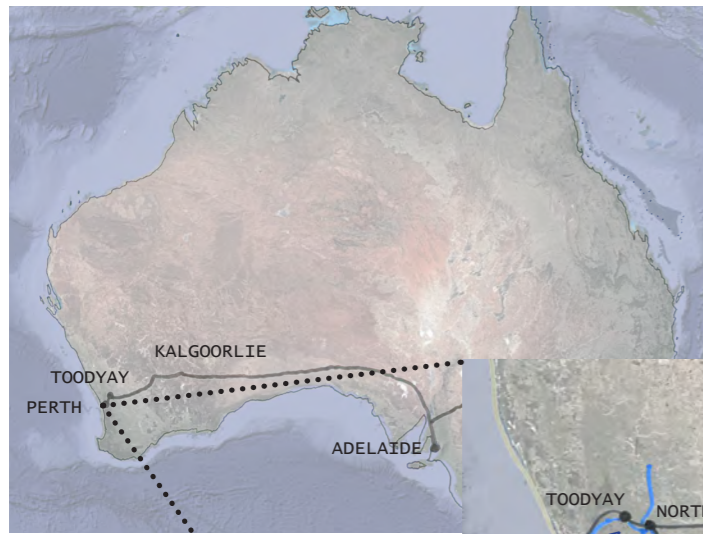
To aid in the development of the Avon Arc, the State Government built a faster train line, meaning permanent residents and tourist numbers have grown as the 1 hour and 15-minute trip from Perth to Toodyay (Duidgee) was shortened to only 20 minutes on the faster train.

TOODYAY (DUIDGEE), WESTERN AUSTRALIA

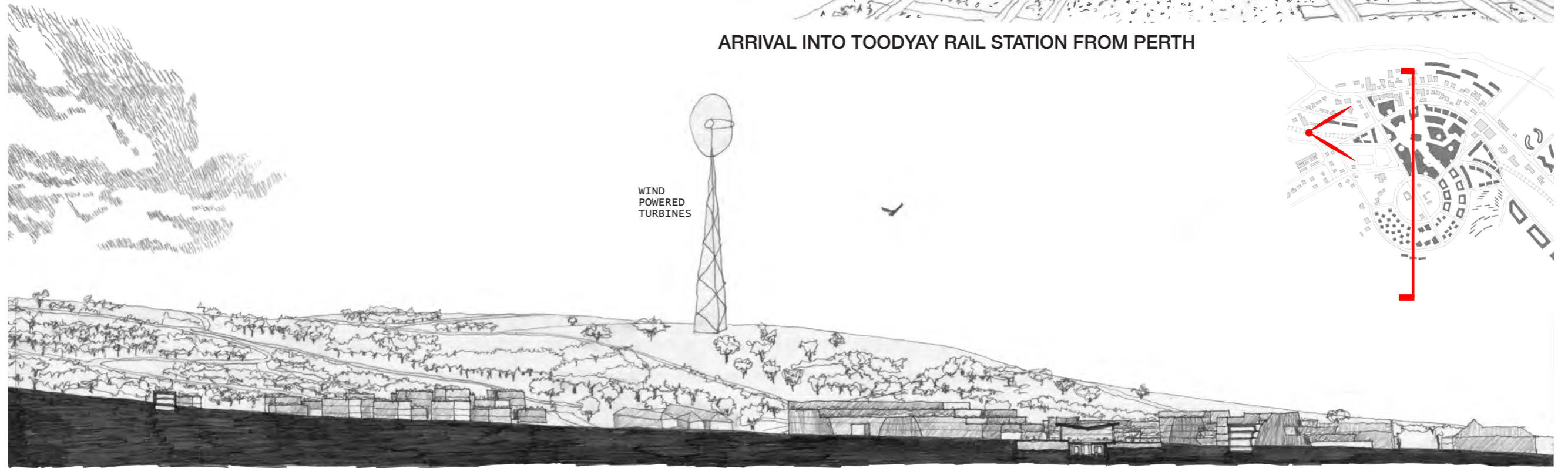
INSERT DREAM HERE (POCKET CITY IN THE AVON ARC)

LATITUDE 31° 33' S

LONGITUDE 116° 28' E



ARRIVAL INTO TOODYAY RAIL STATION FROM PERTH



LOWER DENSITY HOUSING

WIND POWERED TURBINES

OLD NEWCASTLE GAOL MUSEUM, POLICE STABLES & HERITAGE PARK

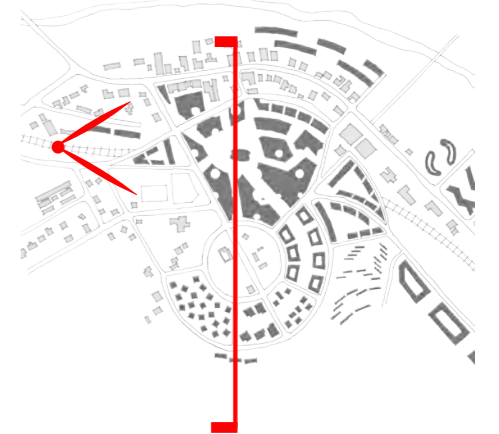
HIGHER DENSITY HOUSING

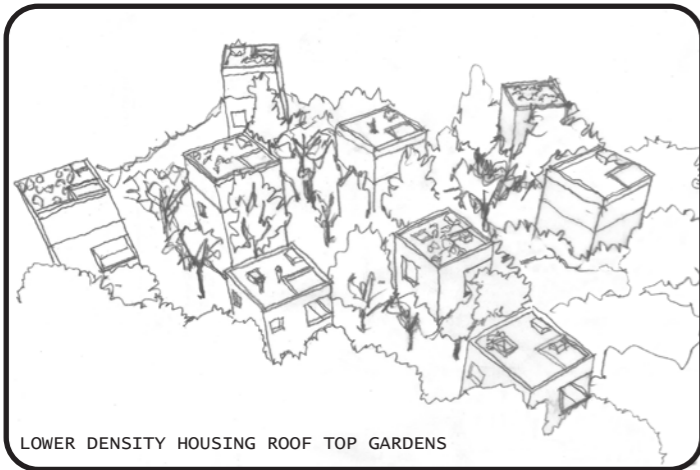
RAIL STATION & CITY CENTRE

STIRLING TERRACE OLD TOWN CENTRE

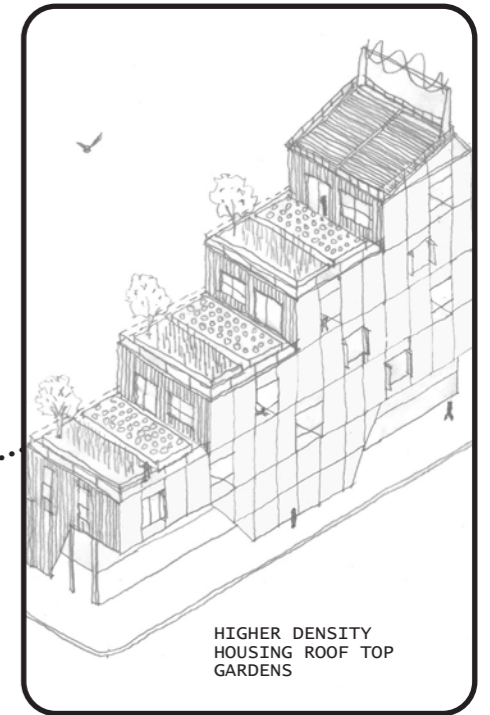


SECTION FROM NATIVE BUSHLAND TO STIRLING TERRACE OLD TOWN CENTRE

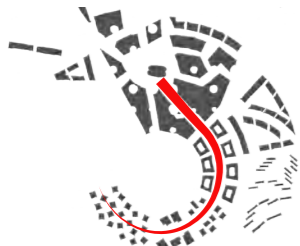




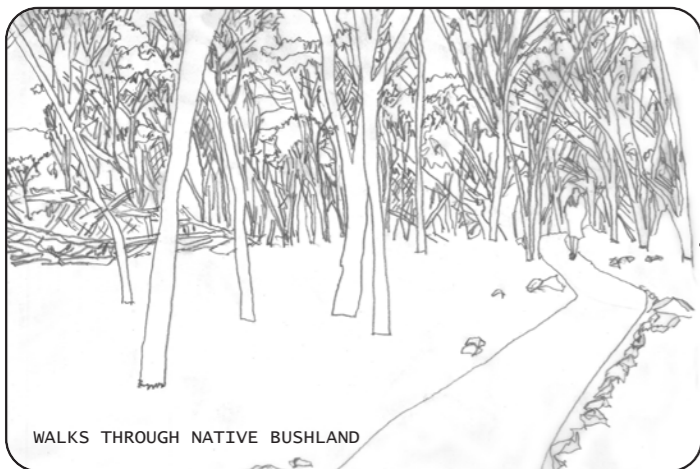
LOWER DENSITY HOUSING ROOF TOP GARDENS



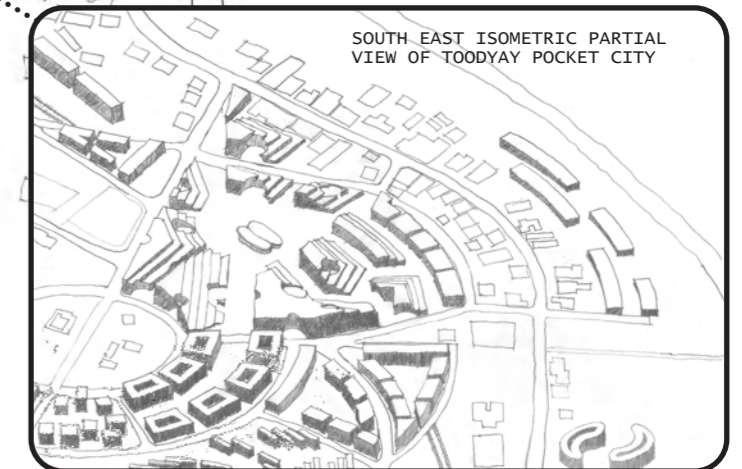
HIGHER DENSITY HOUSING ROOF TOP GARDENS



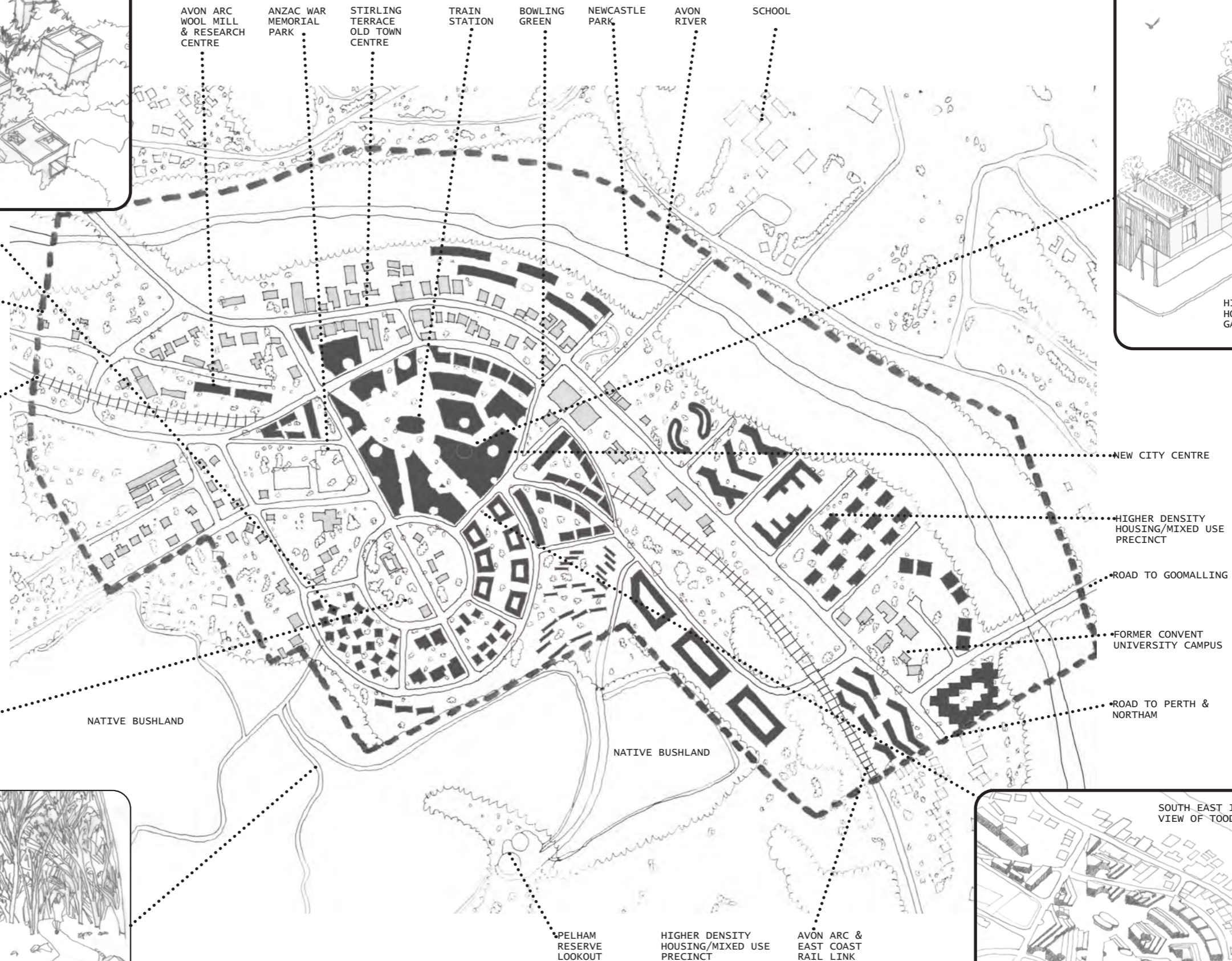
HOUSING DENSITY DIAGRAM



WALKS THROUGH NATIVE BUSHLAND



SOUTH EAST ISOMETRIC PARTIAL VIEW OF TOODYAY POCKET CITY



- AVON ARC WOOL MILL & RESEARCH CENTRE
- ANZAC WAR MEMORIAL PARK
- STIRLING TERRACE OLD TOWN CENTRE
- TRAIN STATION
- BOWLING GREEN
- NEWCASTLE PARK
- AVON RIVER
- SCHOOL

DUIDGE PARK

PERTH RAIL LINK

NEW CITY CENTRE

HIGHER DENSITY HOUSING/MIXED USE PRECINCT

ROAD TO GOOMALLING

FORMER CONVENT UNIVERSITY CAMPUS

ROAD TO PERTH & NORTHAM

OLD NEWCASTLE GAOL MUSEUM, POLICE STABLES & HERITAGE PARK

NATIVE BUSHLAND

NATIVE BUSHLAND

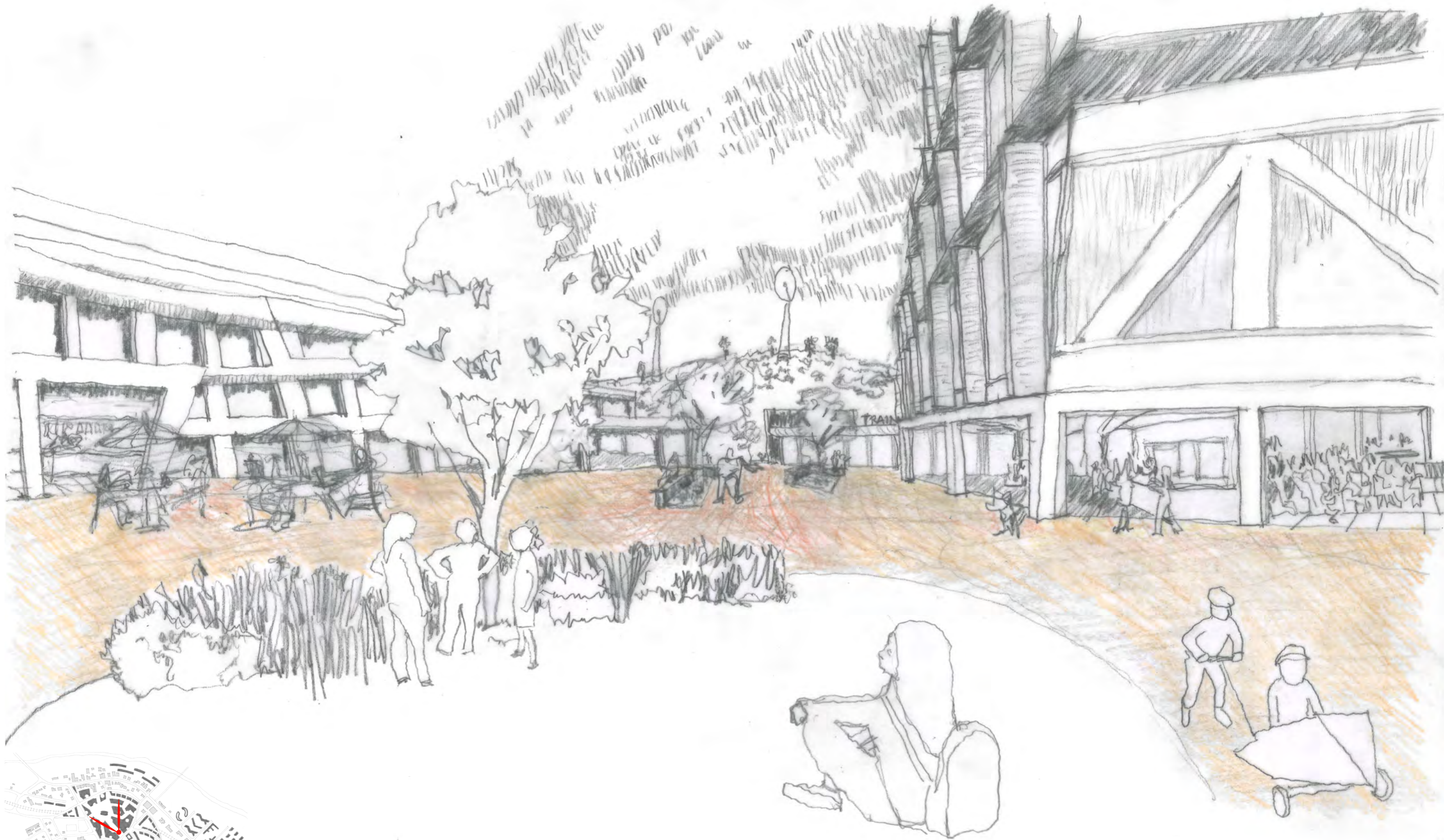
PELHAM RESERVE LOOKOUT

HIGHER DENSITY HOUSING/MIXED USE PRECINCT

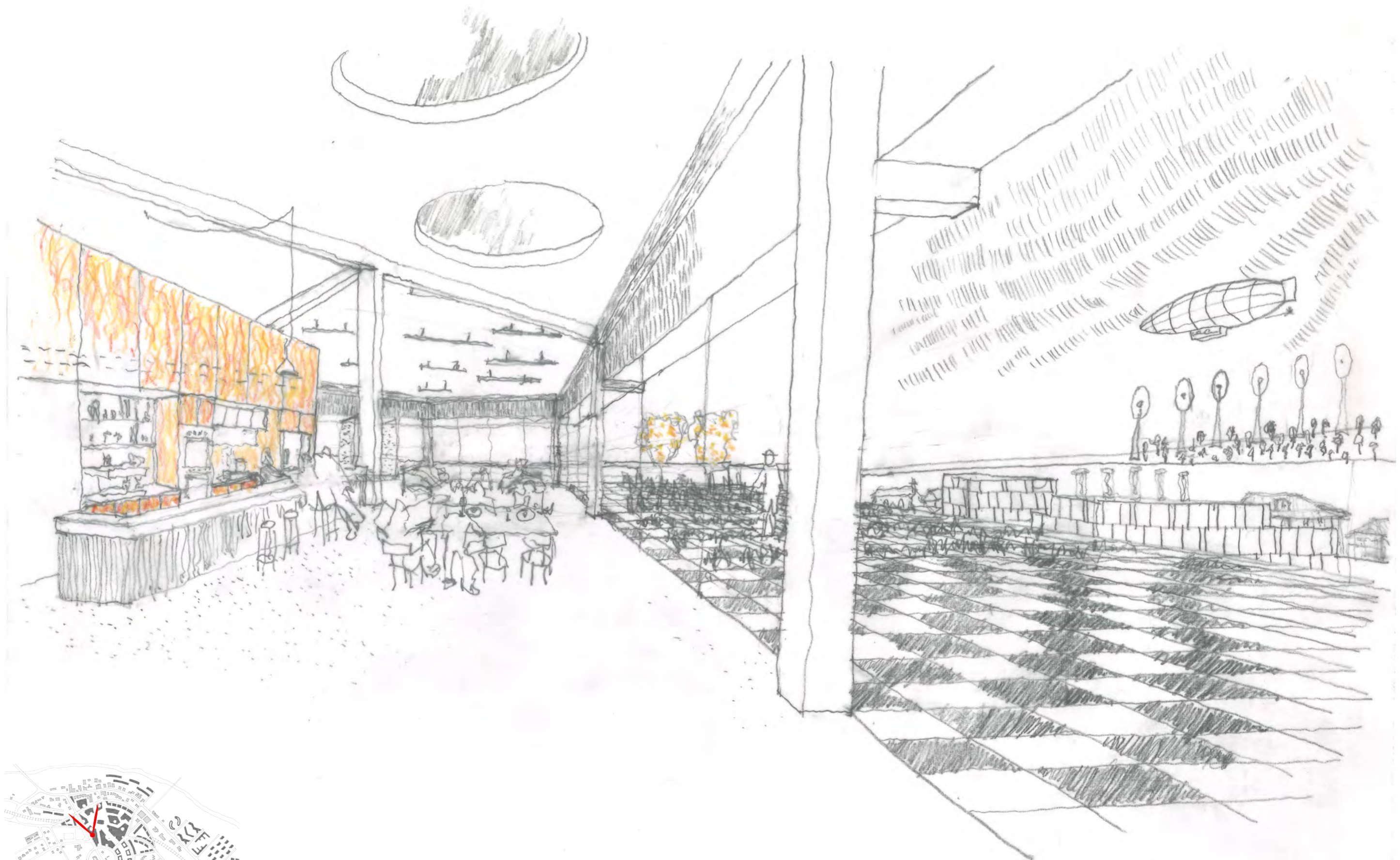
AVON ARC & EAST COAST RAIL LINK



SITE PLAN OF 1KM² PRECINCT
SCALE 1:7500



PUBLIC DOMAIN



PRIVATE DOMAIN