

Before and after ESD

Planning for greener homes and buildings



CASBE – Council Alliance for a Sustainable Built Environment



29 Member Councils
62% of Victoria's population
60% of planning activity

Banyule City Council
Bass Coast Shire Council
Bayside Council
Benalla Rural City
Brimbank City Council
Darebin City Council
Greater Bendigo City Council
Greater Dandenong City Council
Greater Geelong Council
Hobsons Bay City Council
Hume City Council
Kingston City Council
Knox City Council

Manningham City Council
Maribrynong City Council
Maroondah City Council
Monash City Council
Moonee Valley City Council
Moreland City Council
Port Phillip City Council
Stonnington City Council
Strathbogie Shire Council
Whitehorse City Council
Whittlesea City Council
Wyndham City Council
Yarra City Council



Sustainable Design Assessment in the Planning Process (SDAPP)

- 1999 – Port Phillip Sustainable Design in Planning report
- 2000 – Port Phillip residential scorecard
- 2004 – Moreland STEPS tool, Port Phillip launches SDS tool, both councils plus Darebin collaborate on ESD in planning.
- 2007 – HANSEN/SBE report
- 2009 – CASBE formed
- 2011 – IMAP factsheets
- 2012 – SDAPP rollout finalised, CASBE 10 member councils
- The SDAPP process allows scope for the proposed building to be assessed during the design phase and make important changes to improve the design.



ESD Policy – Darebin Clause 22.12

In November 2015, after a decade of work, an ESD policy was approved by the state planning minister for Moreland, Port Phillip, Yarra, Banyule, Stonnington and Whitehorse councils. ESD was integrated into planning applications for many years prior to the policy being approved.

In August 2017 ESD Policies were approved by the state minister for Darebin, Knox and Manningham. More councils are seeking to have a local policy. Each council is at various stages of the SDAPP process and have triggers of 2 or 3 dwellings depending on resources.

There are on going discussions with the State Government about a state policy.



Sustainable Design Assessment (SDA) Sustainable Management Plan (SMP)

Once the plans have been analysed and the recommendations given to the planner who passes the comments onto the applicant, a new design is submitted for further comments along with a

Sustainable Design Assessment (SDA) – Darebin 3 to 10 units or 100 to 999sq.m (non-residential)
(Many other councils have a 2 unit trigger)

Or

Sustainable Management Plan (SMP) – 10 or more units or 1000sq.m
+(non-residential)

In general the report includes an assessment of the 10 Key Sustainable Building categories (BESS plus materials) and a BESS and STORM report.





Councils must be CASBE members to use BESS.

CASBE members pay a annual fee to use BESS Fees are based on the income from planning applications per year.

Overview
Management
Energy
Water
Stormwater
IEQ
Transport
Waste
Urban Ecology
Innovation



Management



Energy



Water



Stormwater



IEQ



Transport



Waste



Urban Ecology



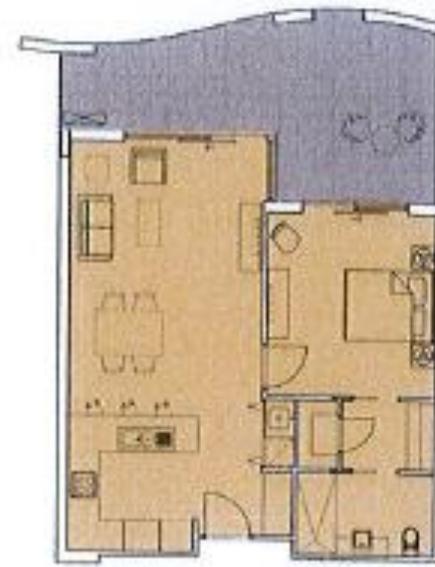
Innovation



Before and after ESD at planning

There are many aspects to a building that can be improved on at the planning permit stage using SDAPP. It is important to provide ESD advice at the RFI (request for further information) stage so the applicant will consider making design changes.

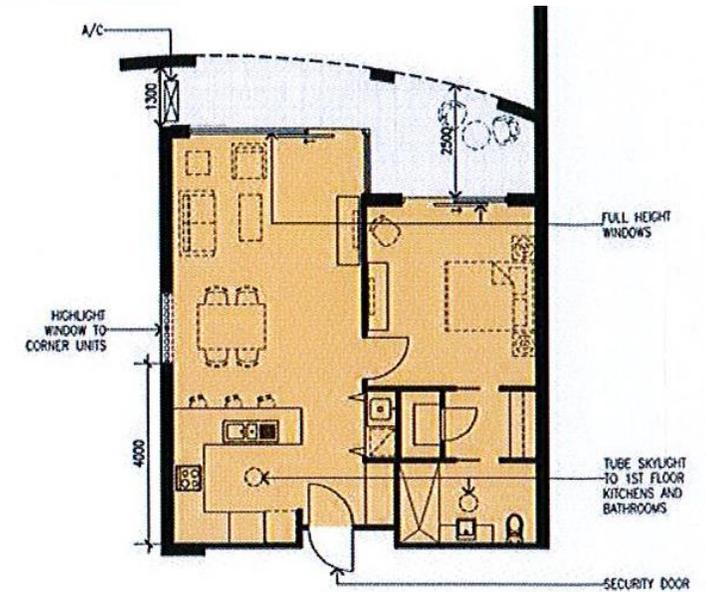
The application is then checked when the ESD report is submitted after RFI and again at the conditions stage.



TYPICAL UNIT LAYOUT

Plan Example – elderly citizens accommodation
North facing balcony 2.5 and 4 metres deep – residents will never receive direct sunlight inside even in winter. Direct sunlight is vital for health particularly for the elderly as they tend to not go outside a lot.

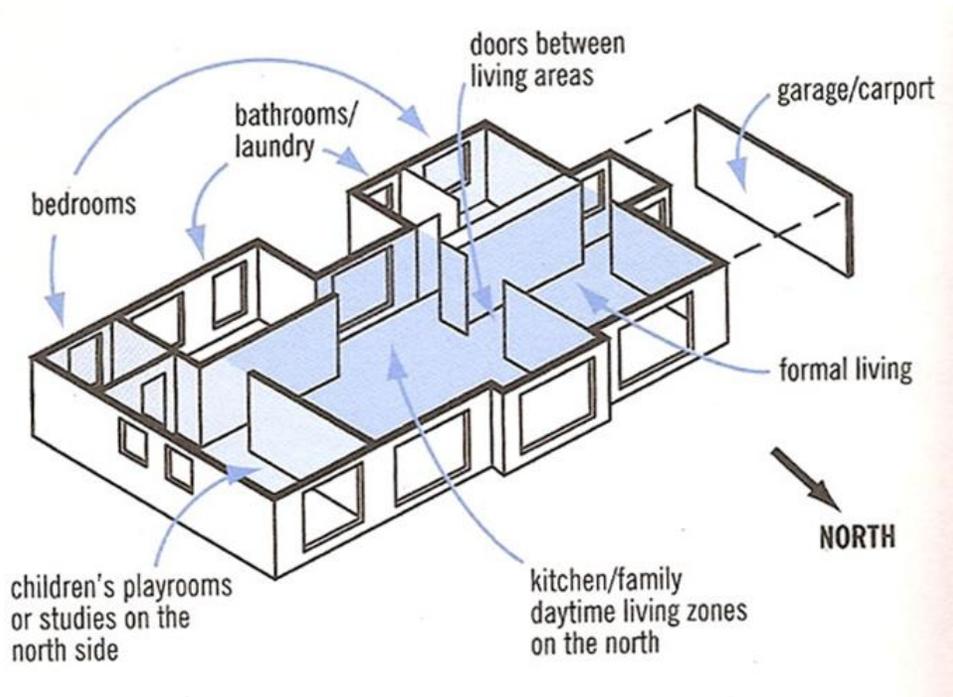
New plan – balconies reduced to 1.5 and 2.5 metres deep. Living space will now receive sunlight from Autumn, Winter and Spring



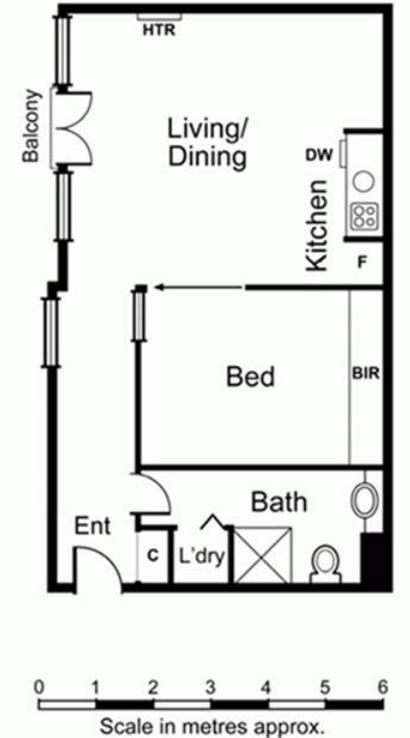
TYPICAL UNIT LAYOUT 1:100

Examples of changes and items to check at planning related to energy – it's too late at the building permit phase!

Energy efficiency

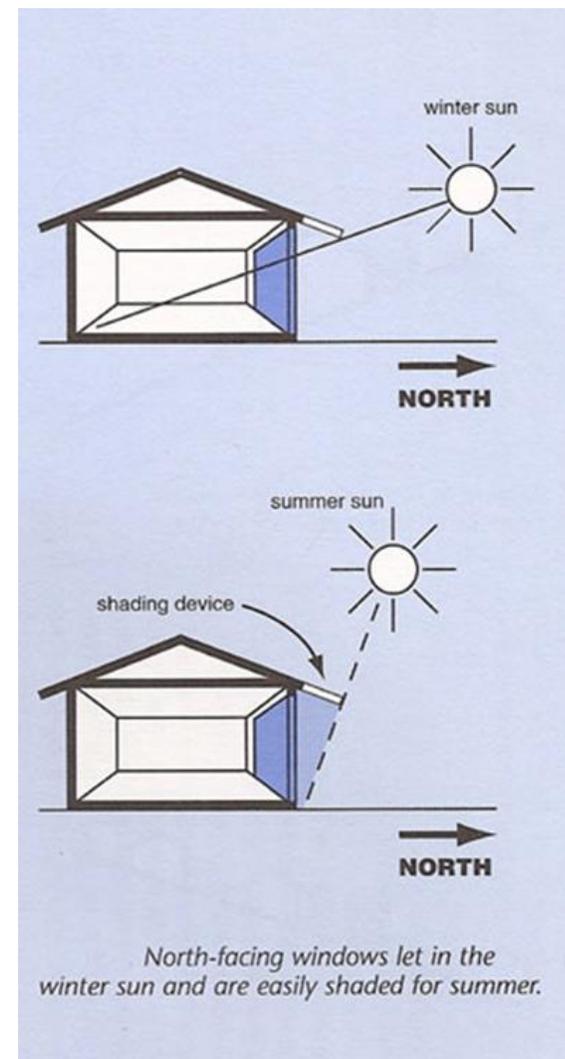


- Internal layout and orientation
- Living areas to the north
- Buffer rooms to the west



Energy efficiency

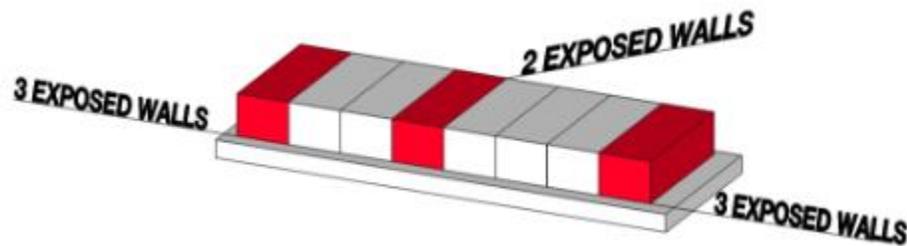
- Reducing peak demand – design so mechanical cooling is not needed.
- Minimise east and west windows
- Install fixed shading to north glazing
- Install adjustable shading to east and west windows



Energy efficiency

Residential – Energy Star ratings requested at planning. Helps to reduce problems later.

Higher than the NCC requirements is highly encouraged as they are the minimum requirements, not best practice.



Energy efficiency

Renewable energy generation – solar panels (photo voltaic panels) for common area energy for apartments, solar battery storage (only 2 projects so far), embedded energy networks, etc.

Panels must be drawn and labelled on the plans

SDAPP Sustainable Design Assessment in the Planning Process 10 Key Sustainable Building Categories

Inner Melbourne Action Plan 'Making Melbourne More Liveable'

2.0

Energy Efficiency

Building design for a sustainable future

The graphic features a yellow background with a white sun icon containing a plug symbol. Logos for various Melbourne councils are visible in the top right corner.



Energy efficiency

Water heaters – solar, gas, heat pumps, electric with solar panel back up, must all be drawn and labelled on the plans to be endorsed.

Clothes drying facilities – install external clothes lines to all POS and large balconies in an appropriate location.



Indoor Environment Quality (IEQ)

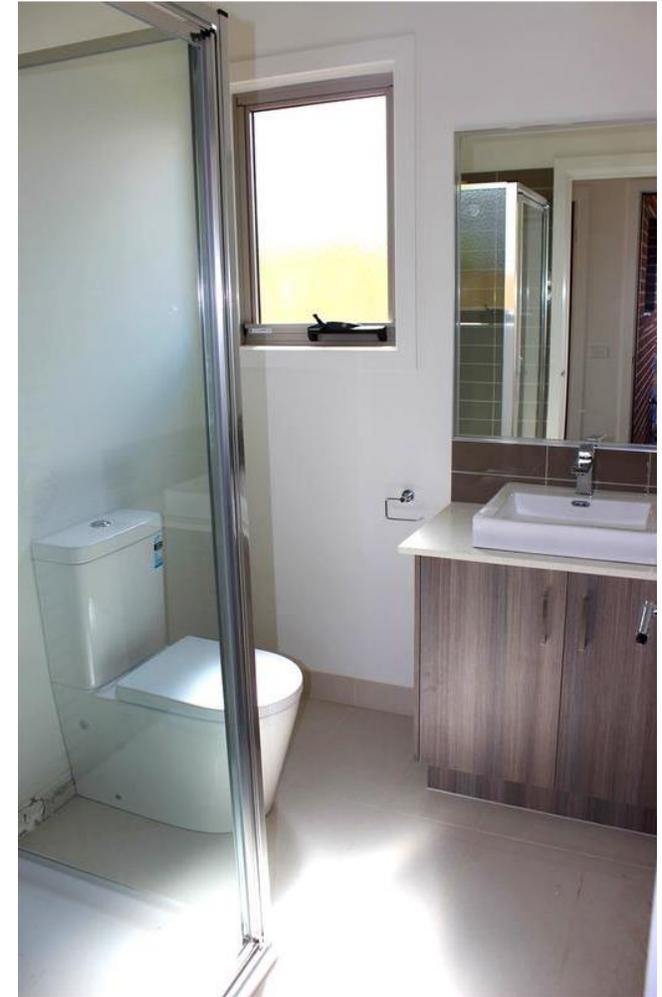
BESS tool has a Deemed to Satisfy section for IEQ. Living room and bedroom depth of <8m for N,W,E And < 5m for S including overhangs. Greater depths will diminish daylight access.

BADS allows 9m in all orientations with little regard to overhangs.



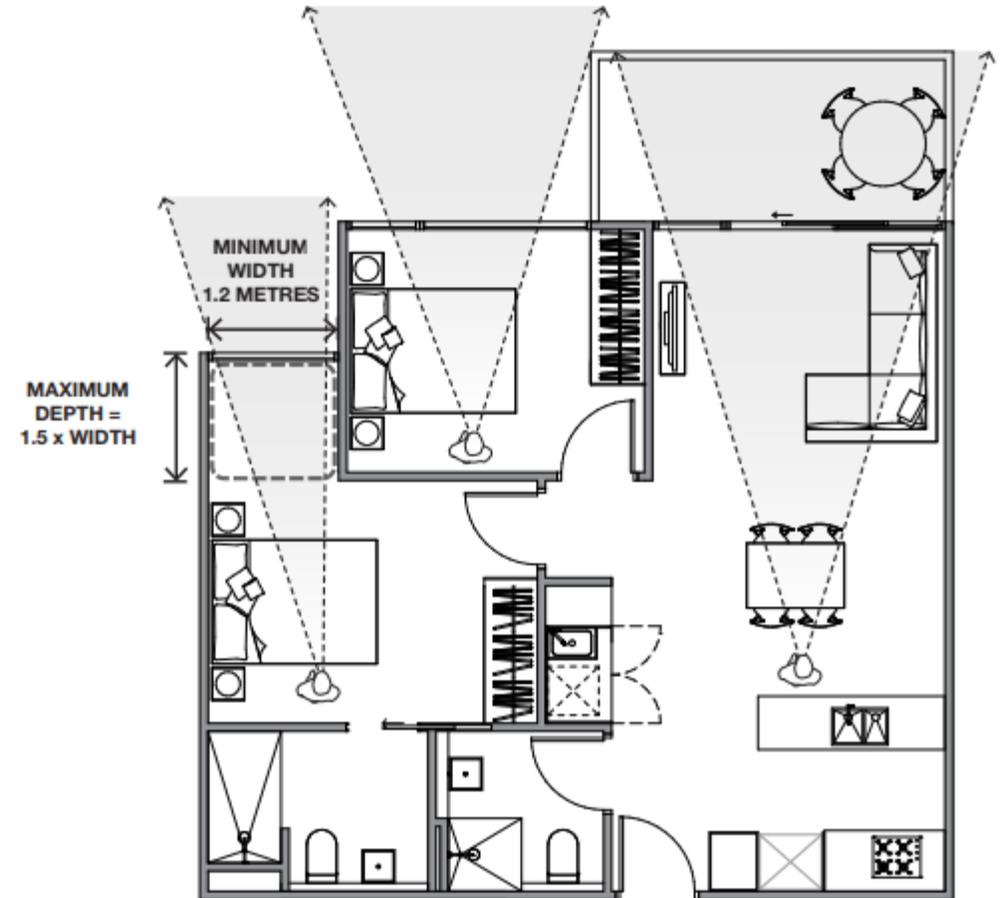
Indoor Environment Quality (IEQ)

- Daylight- should be maximised while considering heat gain. Consider the location, number and size of windows and glazed doors. All rooms to have windows including bathrooms and stairwells.
- Clear glazing should be used (light transmission > 80%). Tinted glass is not a good solution to heat gain as it also reduces access to daylight all year and is discouraged.



Indoor Environment Quality (IEQ)

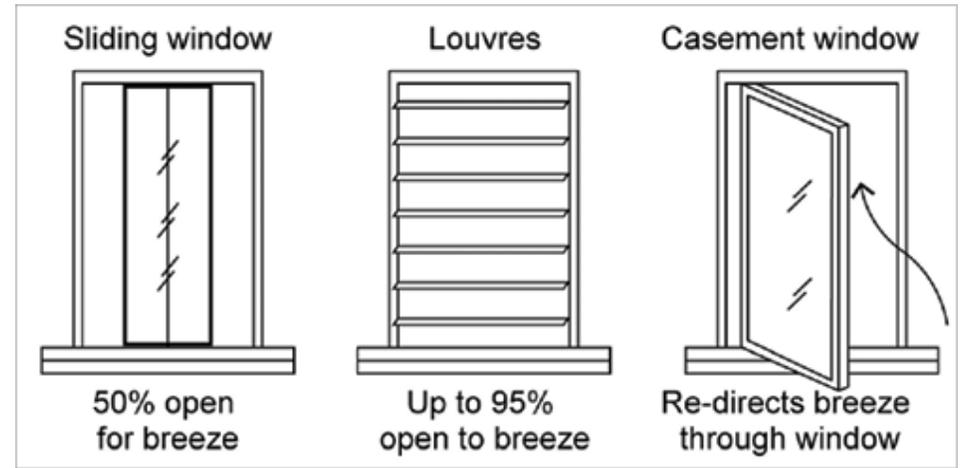
- Bedrooms with battle axe style windows should be avoided or minimised. Where they must be used make the 'handle' part a minimum of 1.2m wide so it is useable. The depth should be no more than 2.5m from source of light. This has been in place for the ESD policy councils for many years. BADS has now caught up!



Indoor Environment Quality (IEQ)

Natural ventilation

- number, location, size of operable windows and doors
- type of operable windows and doors
- aim for cross ventilation with 2 windows in a room or highlight or clerestory windows



Water efficiency

There are many benefits to using water more efficiently including saving water and therefore the energy required to make water drinking quality!

- reduce the costly demand on infrastructure upgrades (e.g. desalination plants)
- lower your water bills
- use harvested rainwater for toilet flushing and gardens.
- discharge less sewage and stormwater to rivers and the ocean.



Stormwater management

Raingardens, water tanks and other Water Sensitive Urban Design (WSUD) features to reduce pollution to creeks, rivers and the ocean.

Raingardens remove rubbish, phosphorous and nitrogen which is damaging to water health.

So less energy required for cleaning!

SDAPP Sustainable Design Assessment in the Planning Process
10 Key Sustainable Building Categories

Inner Melbourne Action Plan
"Making Melbourne More Liveable"

4.0

Stormwater Management
Building design for a sustainable future



Transport

In Australia, cars account for approximately 50 percent of our total transport greenhouse gas emissions.

Bicycle facilities – one bike park for every apartment is ideal. Design early to ensure it is secure, undercover, easy to access, ideally on the ground floor, have a variety of holds for different users e.g. on wall and on ground. This is vital to encourage bike riding.

SDAPP Sustainable Design Assessment in the Planning Process 10 Key Sustainable Building Categories

Inner Melbourne Action Plan 'Making Melbourne More Liveable'

6.0

Transport

Building design for a sustainable future

The graphic features a white silhouette of a person riding a bicycle against a dark red background. The bicycle is positioned on a white line representing a path. The sun and flowers are also white. The text 'SDAPP Sustainable Design Assessment in the Planning Process 10 Key Sustainable Building Categories' is in white on a dark red background. The text 'Inner Melbourne Action Plan 'Making Melbourne More Liveable'' is in white on a dark red background. The number '6.0' is in white on a dark red background. The word 'Transport' is in white on a dark red background. The phrase 'Building design for a sustainable future' is in white on a dark red background.



Transport

Strategic planning should allow for higher density near public transport and services. Easy to justify car park reductions and increase bike holds.

Reducing onsite car parking so people can choose to have no car. Depends on size, context, access to public transport, etc.

Car share – more for council to allow in areas of high density

Fuel efficient transport – electric car charging points for large developments. Included in the BESS tool. None in Darebin as yet.....

SDAPP Sustainable Design Assessment in the Planning Process 10 Key Sustainable Building Categories

Inner Melbourne Action Plan 'Making Melbourne More Liveable'

6.0

Transport

Building design for a sustainable future

The graphic features a white silhouette of a person riding a bicycle against a dark red background. The bicycle is positioned on a path that leads towards a sun icon. The overall design is clean and modern, with a focus on sustainable transport.



Waste

- Operational waste – council collections are encouraged, less collections and less bins is ideal as that means less trucks, less noise, less air pollution, less damage to roads and the need to replace asphalt, less time to collect bins and less bins on the street.
- Consider bin sharing for council waste.
- Design bin areas early in the process so they have daylight and are easy to access.
- Recycling should be as convenient as general waste.
- Use waste and recycling chutes for high rise buildings.
- Green waste and composting to reduce GHG – provide adequate space, but hard to control at planning.

SDAPP
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in the Planning Process
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Inner Melbourne Action Plan
'Making Melbourne More Liveable'

7.0

Waste Management
Building design for a sustainable future



Urban ecology

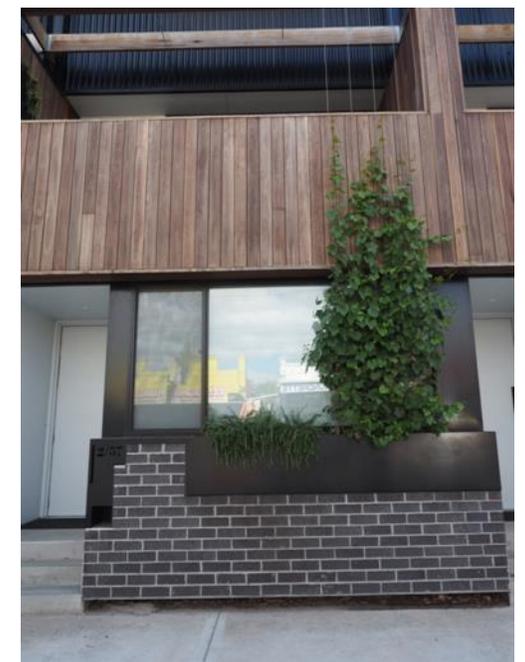
- Maximise landscaping for seasonal heat control and reducing the urban heat island Effect (UHIE)
- Use plants to reduce glare and ground temperature
- Landscaping to reduce wind penetration and capture summer breezes
- Landscaping to increase habitat.
- Trees to provide shade in summer.
- Limit existing tree removal – not adequately controlled in Melbourne

SDAPP
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8.0

Urban Ecology
Building design for a sustainable future



BESS Report



<http://www.bess.net.au/>

67 Landells Road, Pascoe Vale 3044 Pascoe Vale ·
 Site area: 697 m² · Building Floor Area: 346 m² ·
 Date of Assessment: 10 Feb 2016 ·
 Applicant: janine.parker@darebin.vic.gov.au

Project number

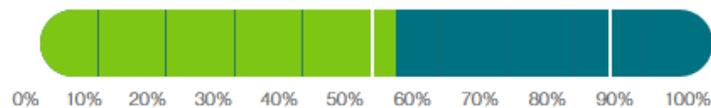
13979

Published

<http://bess.net.au/projects/13979>

Your BESS score is

+ 53%



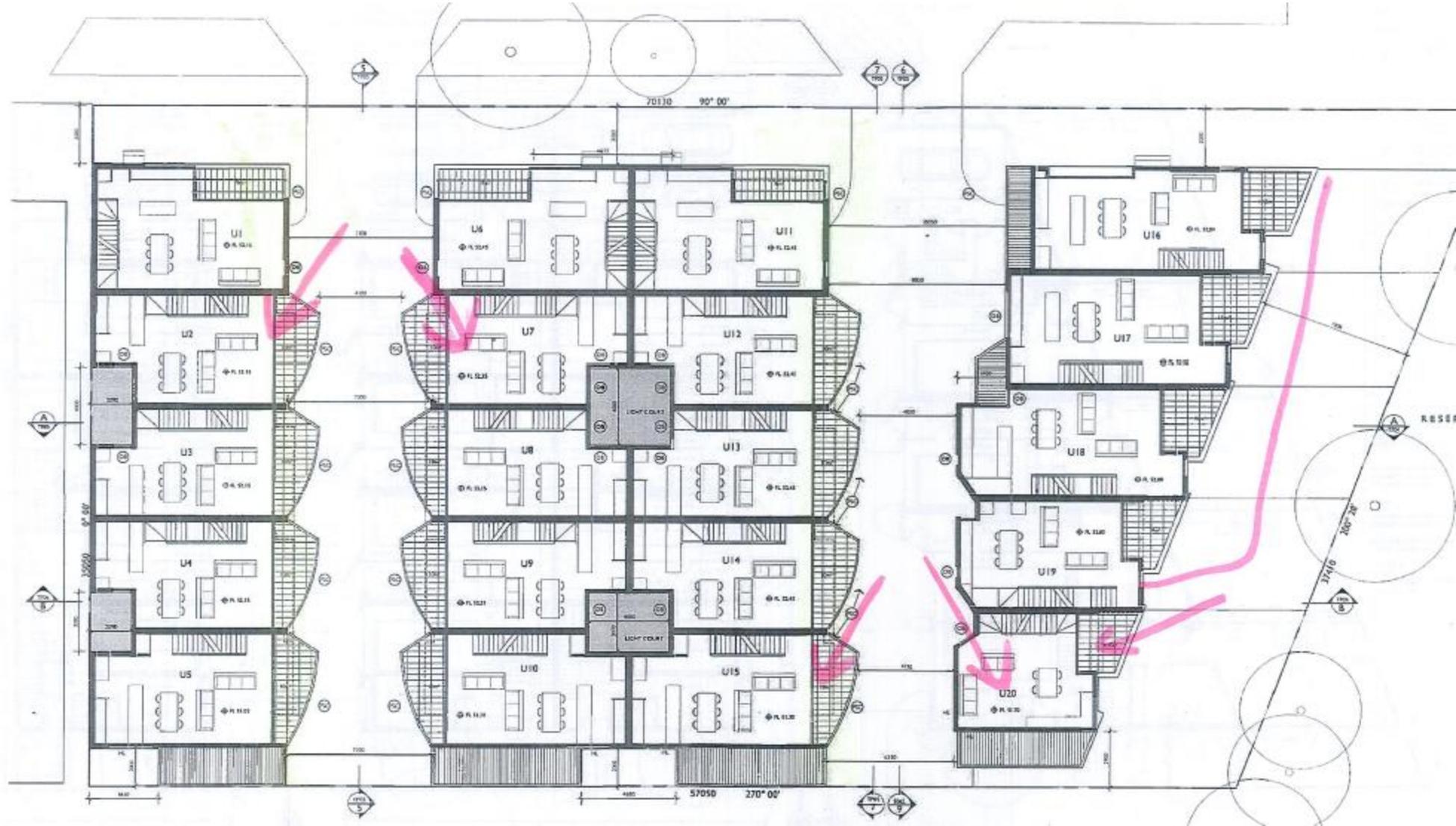
50% + Best Practice 85% + Excellence

% of Total	Category	Score	Pass
0 %	Management	14 %	
6 %	Water	71 %	✓
15 %	Energy	55 %	✓
13 %	Stormwater	100 %	✓
10 %	IEQ	66 %	✓
3 %	Transport	37 %	
1 %	Waste	33 %	
1 %	Urban Ecology	28 %	
0 %	Innovation	0 %	



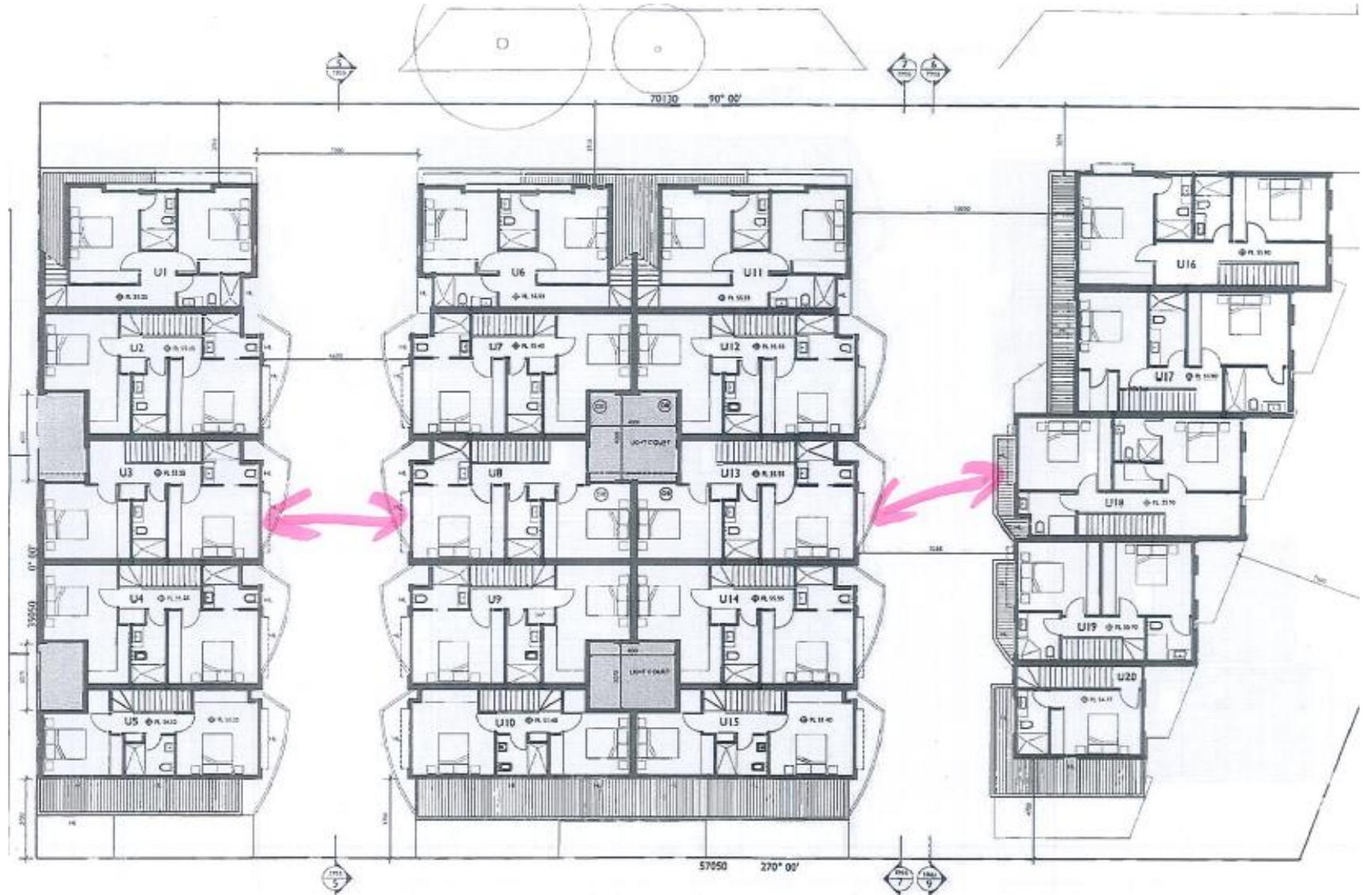
Case study

- Only access to north light is through small angles areas on the balconies between the townhouses



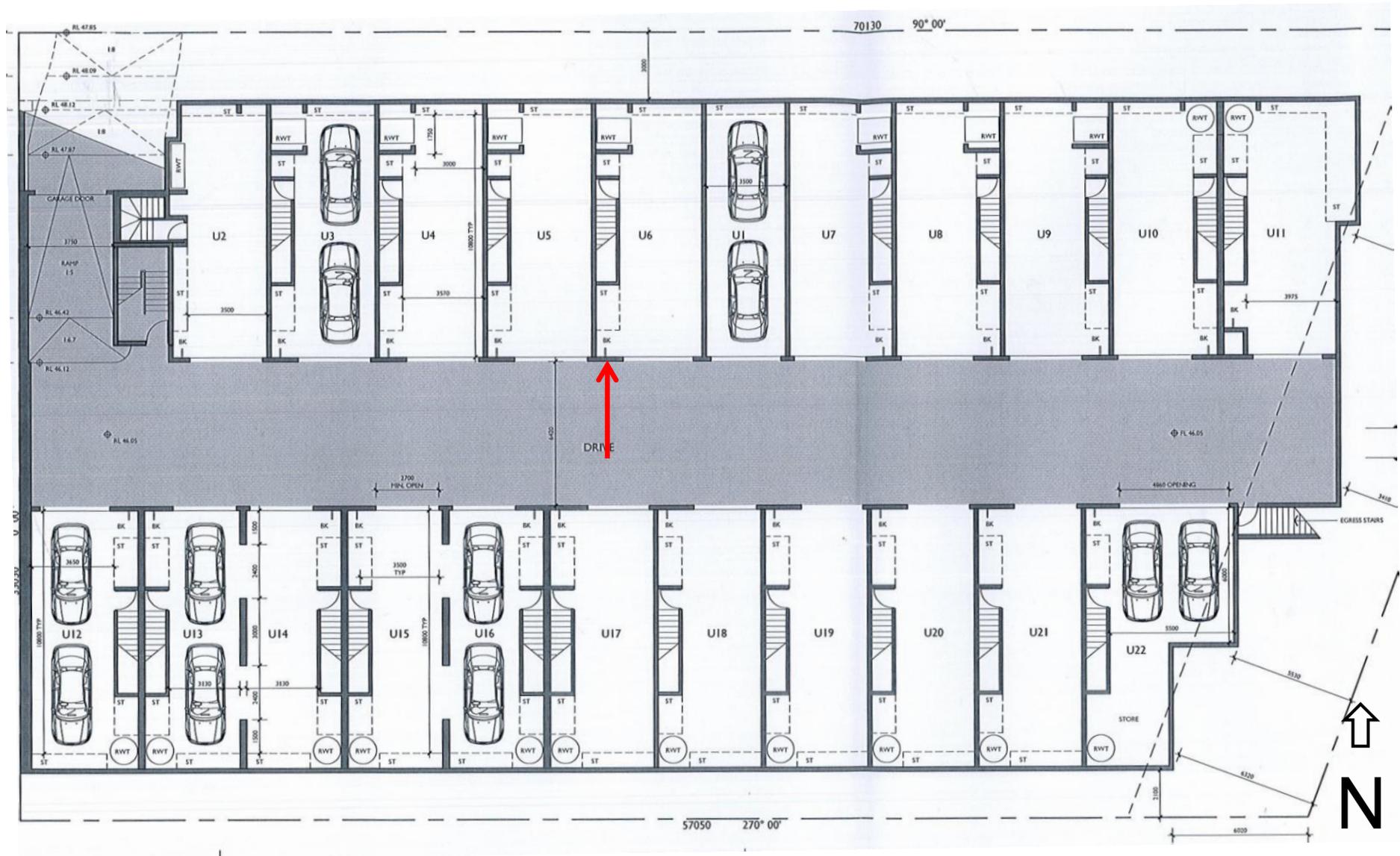
Case study

- Bedrooms can only have windows from 1700mm high or will need screening to 1700mm high to avoid overlooking. Limits daylight, ventilation and views.



Case study

- Carparking, bike parking, water tank and more storage in basement
- More apartments and more attractive design so developer recoups cost of carpark.



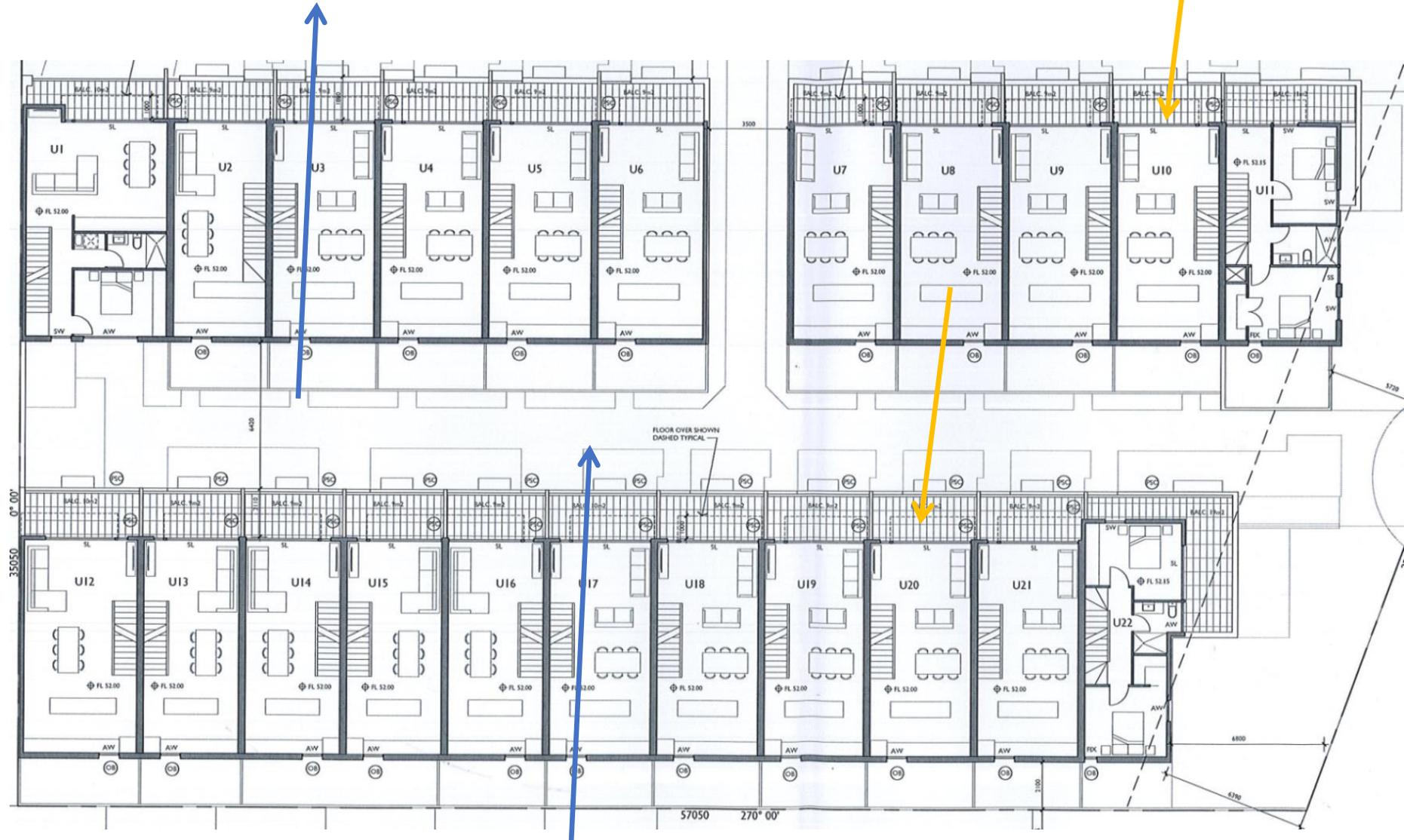
Case study

- No cars on the ground floor allows more space for landscaping and communal areas. Social sustainability.
- Less noise from cars and is safer.
- No need to screen bedroom windows as looking into a garden area



Case study

- All living/ kitchen spaces have north facing windows and cross ventilation
- Balconies face north so are good for growing plants, drying clothes, sitting outside, etc.
- Balconies face the street so no need for 1700mm screening.



Case study

All units have north facing windows, balconies and glazed doors to living spaces.

2 out of 3 bedrooms have north facing windows.



