



# Health, productivity and efficient buildings

Presentation to Energy Efficiency Conference – 16 November 2016



PROSPERITY | JOBS | STRONG COMMUNITIES

## Why Health & Wellbeing is **IMPORTANT**

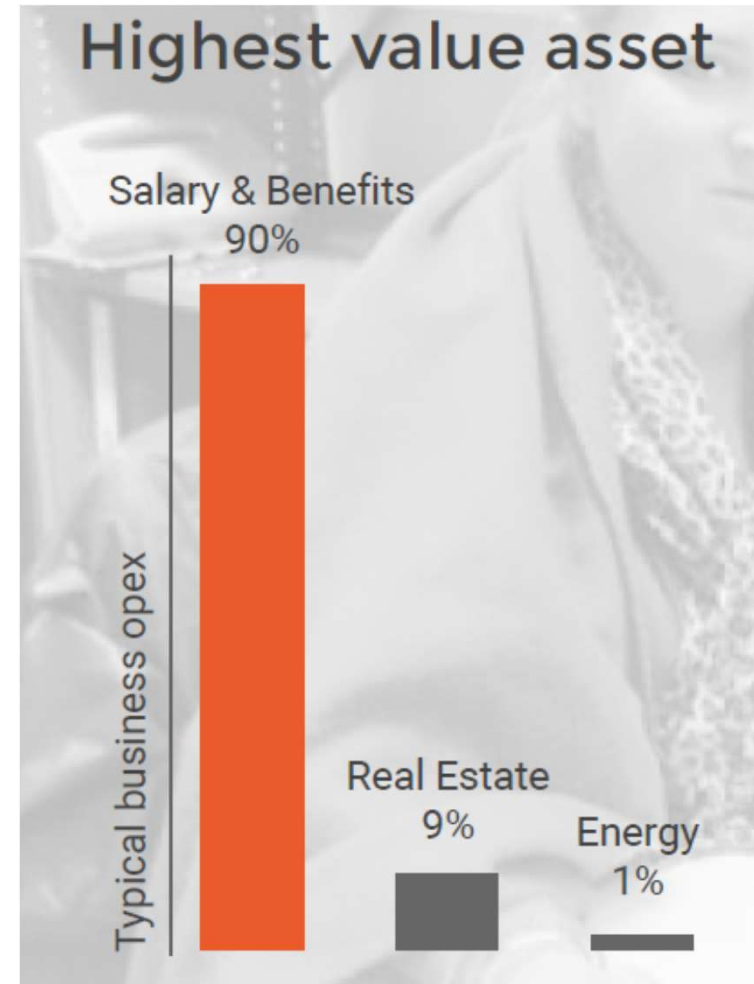
The design, construction and operation of our built environment has a profound impact on individuals and populations

There is a commercial imperative – lowering of long terms costs, adapting to new technologies. Increased occupant comfort leads to higher productivity...

Ultimately we want to create better places for people and communities – places that reduce environmental impacts, improve social practices and set high standards for corporate governance

## What are the **BENEFITS** ?

- Learnings - from technological or behavioural changes
- Increased amenity and occupant well-being
- Productivity improvements
- Attract and retain tenants for longer
- Financial returns – higher asset value and rent
- Ratings – increased marketability of your building

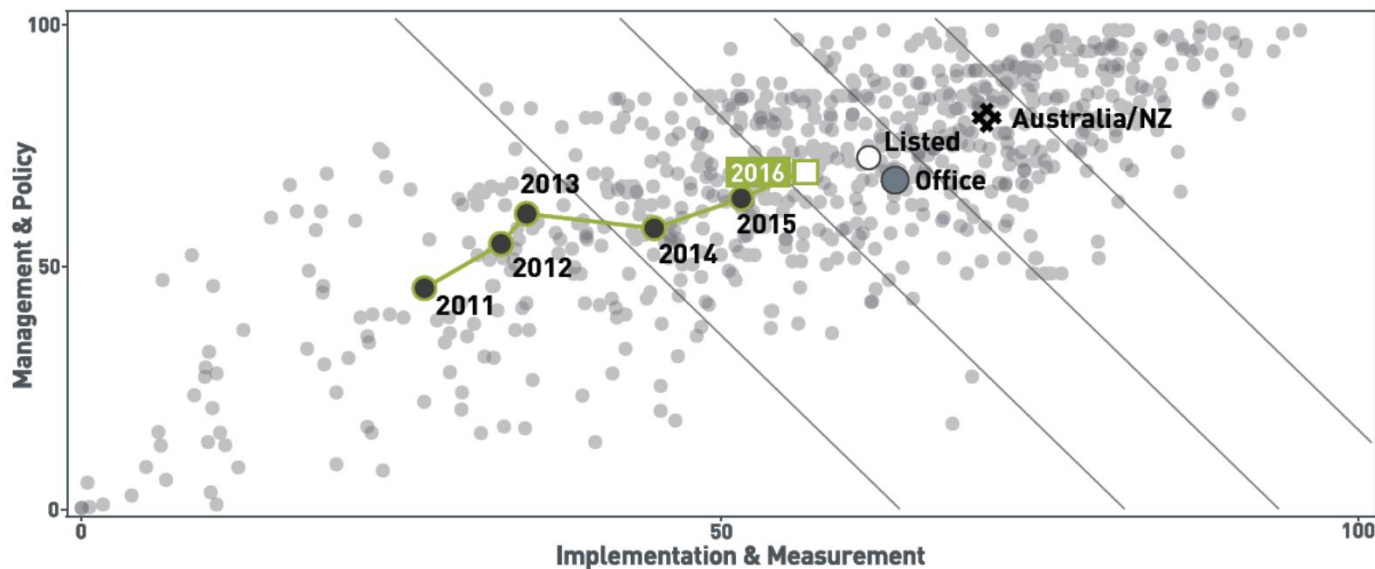


## We are the **GLOBAL LEADERS** in sustainable buildings

Australian and New Zealand property companies consistently top global sustainability benchmarks.

In 2016 we continued our global leadership for the sixth year running, and since the GRESB survey began, outperforming other regions with an average score of 74, compared to the global average of 60.

### GRESB Model



**Overall GRESB scores** continued to increase. The average GRESB Score increased from 55 to 60.

**Australia/NZ entities** outperformed all other regions with an average score of 74.

**Office companies and funds** outperformed other property types with an average score of 66.

**Listed property companies** outperformed private equity funds by 6 points.

## ... but we need to continue to **INNOVATE**

This year's relative improvement in average ESG performance trails other regions

Turning our focus to other aspects beyond environment of sustainability will be essential for the region to maintain a leadership position

### GRESB Model



### Region Score

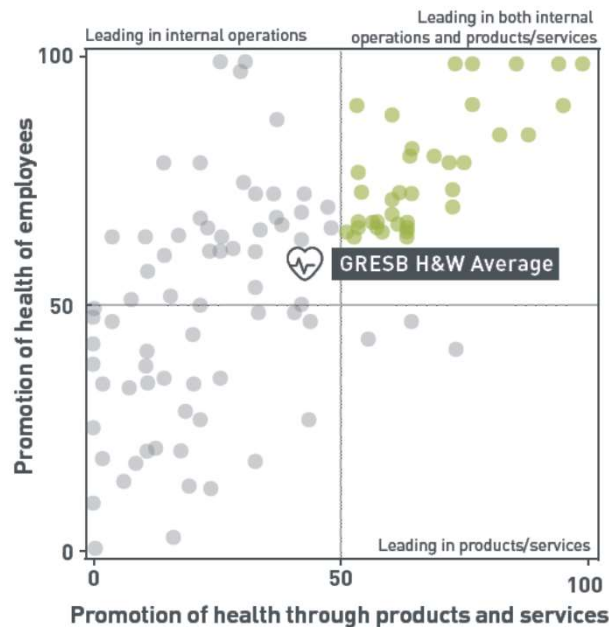
The average GRESB Score of companies and funds in Australia/NZ improved from 70 in 2015 to 74 in 2016.

Office portfolios in Australia/NZ continue to have the highest average GRESB Score.

## INVESTORS are starting to ask about Health & Wellbeing

GRESB added a new Health & Well-being Module this year – a voluntary additional component that sends a signal that human health and well-being plays a critical role in assessing the value of real estate portfolios and other assets

### Health & Well-being



174

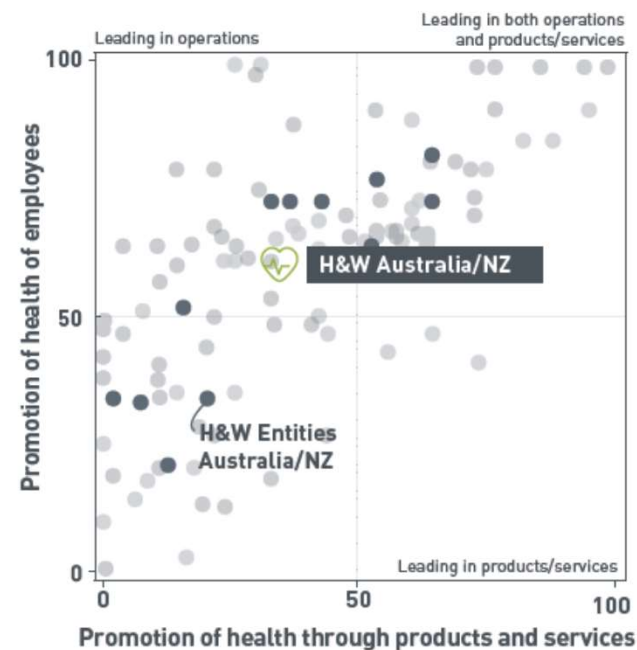
Entities



Average Score



Leaders



Results show there is significant variation in health and wellbeing practices:

- Many companies are working to promote health of their employees
- Some also actively promote health of customers through their products and services



## The EVIDENCE base suggests a positive correlation between ENERGY and INDOOR ENVIRONMENT QUALITY

### Analysis done by NABERS

NABERS IE and Energy base building ratings for 35 office buildings (total no. of buildings with both ratings as at June 2016) were analysed and showed:

- There is a correlation between energy efficiency and good indoor environment quality
- 94 per cent of buildings achieving good performance (4 stars and above) for both
- Only two out of the 35 ratings had a NABERS IE rating below 4 stars (both achieved 3 stars, representing market average performance)

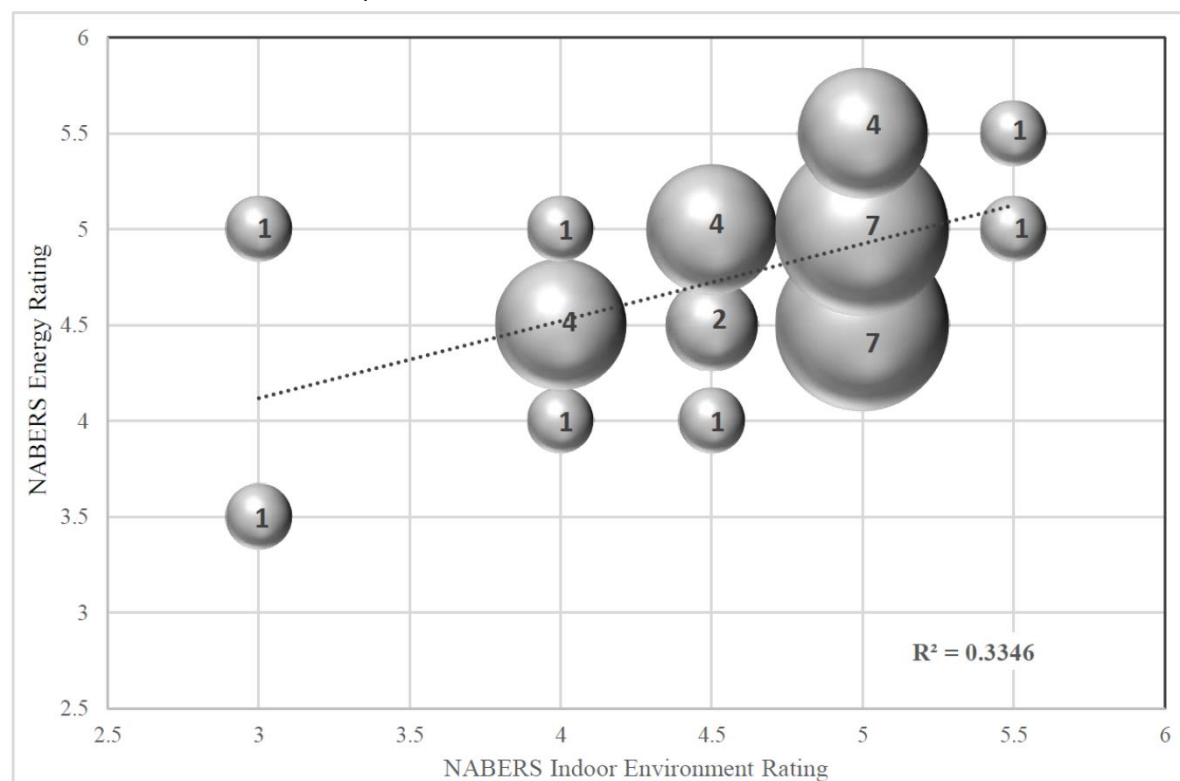


Figure 3. NABERS Indoor Environment and Energy ratings for the 35 office buildings in Australia.

## ... analysis also showed the **HIGHER** the average NABERS Energy rating, the **BETTER** the IE rating

Comparing the NABERS IE rating and the average NABERS Energy rating we see:

Table 3. NABERS IE rating and the corresponding average NABERS Energy rating

| NABERS IE rating | Average NABERS Energy rating |
|------------------|------------------------------|
| 3                | 4.3                          |
| 4                | 4.5                          |
| 4.5              | 4.7                          |
| 5                | 4.9                          |
| 5.5              | 5.3                          |

### KEY CONCLUSIONS:

- support the theory that high energy efficiency will lead to a good indoor environment with highly efficient NABERS rated buildings
- It is likely that these highly efficient buildings are well managed and are therefore more in tune with occupant comfort and satisfaction



## The economic case is **COMPELLING**

- Independent research by the Investment Property Databank has shown buildings with high NABERS ratings have higher returns and less vacancies, leading to a higher market valuation
- The value of buildings with excellent indoor environment compared to standard buildings is 10 per cent higher, while the occupancy rate is approximately 10 per cent higher and rent is 5 per cent higher

Table 4. Investment returns for buildings with a 5 star NABERS Energy rating and excellent IEQ [12] [13]

|                      | 5 star and above NABERS<br>Energy Rating [12] | Excellent IEQ [13] |
|----------------------|---|--------------------|
| Building asset value | 10.6% higher                                  | +10%               |
| Occupancy rate       | Not reported                                  | +10%               |
| Vacancy rate         | -1.4%   | Not reported       |
| Rental return        | +10.8%  | +5%                |

## Tenants **WANT** sustainable and healthy workplaces

The potential FINANCIAL RETURN from buildings that are achieving ENVIRONMENTAL EXCELLENCE is supported by recent surveys and research by Colliers International and Jones Lang LaSalle which showed:

- 95 per cent of tenants want to be in a green building
- 92 per cent of the 143 top-level corporate real estate leaders surveyed internationally consider sustainability when making their location decisions
- Of those surveyed, just under half said they would pay up to a 10 per cent premium for sustainable office space



# Case Study

## 200 GEORGE





## An ambitious VISION



*Create a building that educates through design, form and function, so employees and visitors go home smarter and healthier.*

*Set the standard for indoor environment quality, health and wellbeing for us and neighbouring community*

Key stats:

- AMP / Mirvac
- 38,749m<sup>2</sup> of office space (33 floors)
- 476m<sup>2</sup> of retail space
- Floor plates between 1,281m<sup>2</sup> – 1,462m<sup>2</sup>
- Hybrid HVAC
- 6 star Green Star – Office Design v3

Targeting:

- 6 star Green Star – Office As Built v3
- NABERS: 5 star Energy, 4 star Water
- GOLD certification under WELL

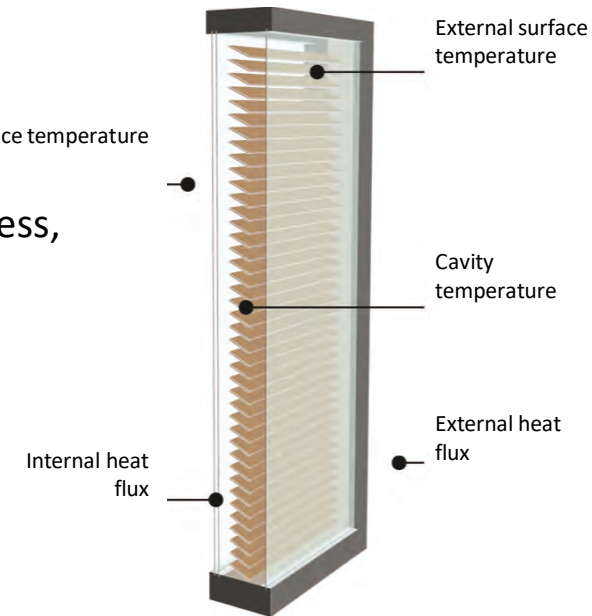
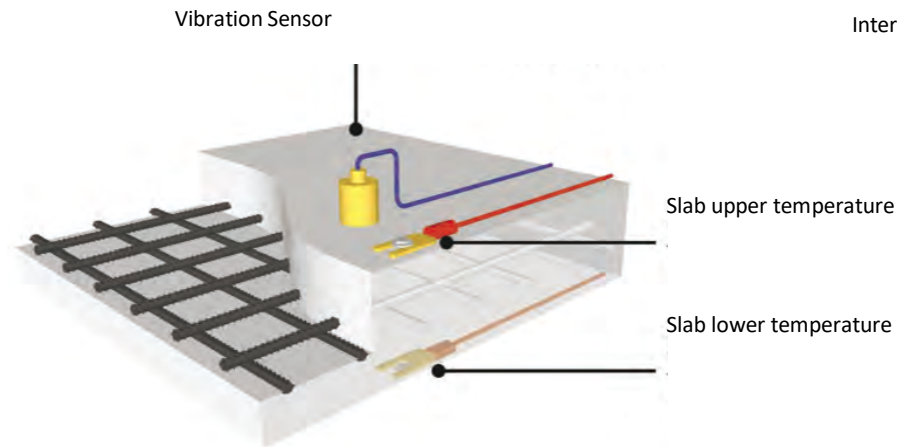
## KEY INITIATIVES

### Living Lab

- Ideas from CSR House and BOSSA
- Embed sensors / instrumentation
- Experiment, research and learn
- Performed under actual conditions
- Test design elements / theories
- Feedback learnings into Workplace design

### What does a Living Lab look like?

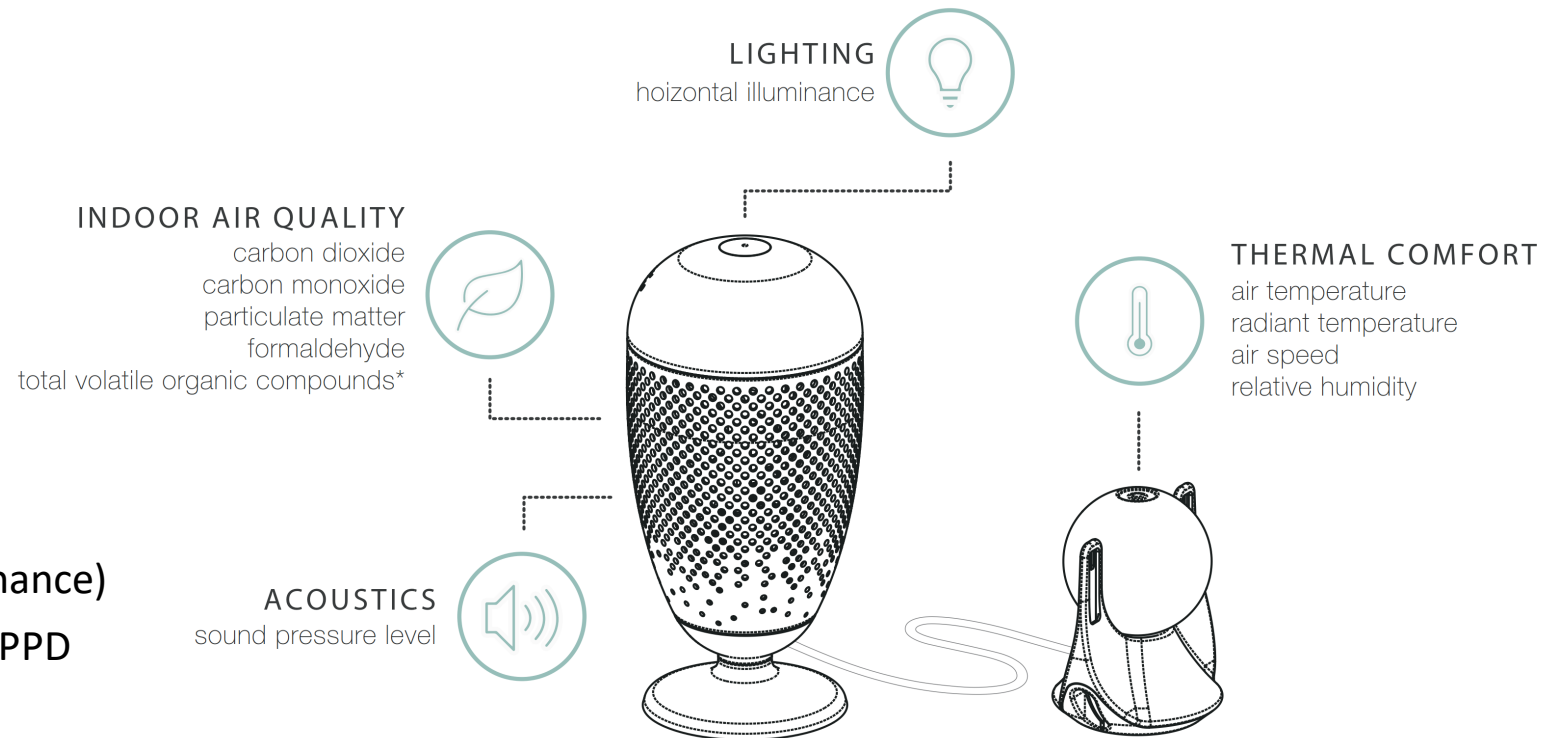
- A network of embedded sensors
- Central communication network
- Integrated with other building systems (access, SkySpark, lifts, resource use)
- Data stored in a Mirvac database



## Advanced TECHNOLOGY

SAMBA monitoring stations that provide access to real-time data on:

- Indoor Air Quality
  - CO<sub>2</sub> & CO
  - Relative Humidity
  - Air Speed
  - Particulates
  - VOCs / Formaldehyde
- Acoustics
- Lighting (horizontal illuminance)
- Thermal comfort – PMV / PPD

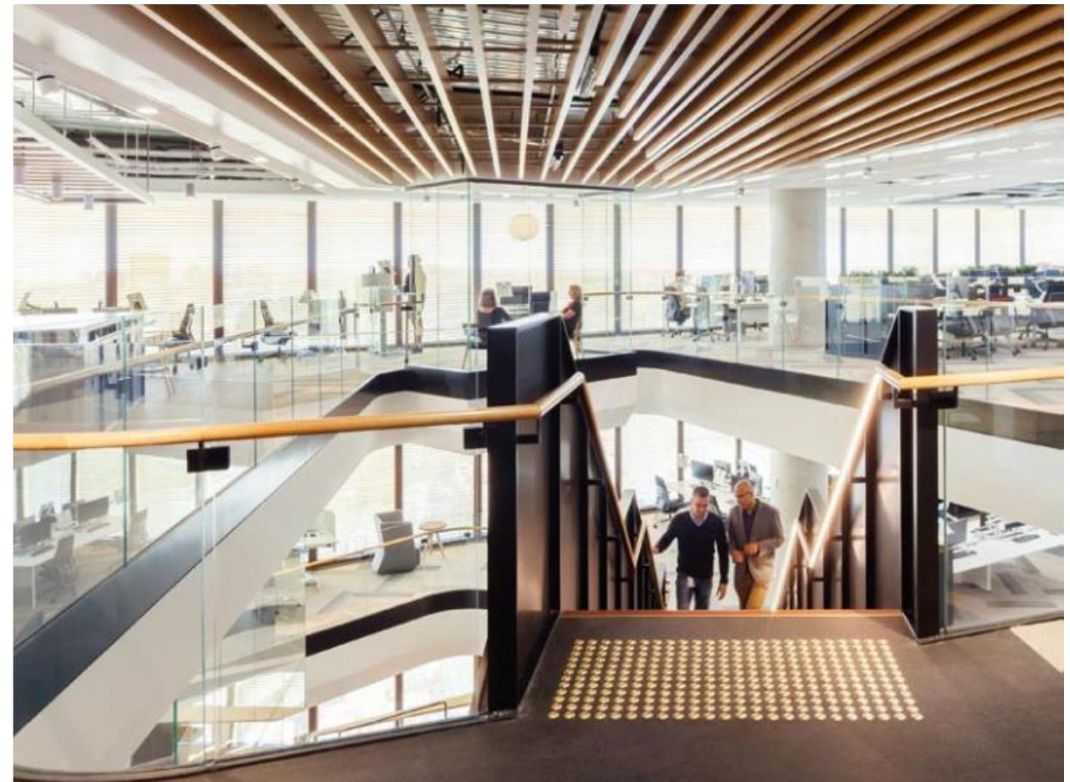




## Early adopters of new RATINGS

Mirvac is targeting and on track to achieve GOLD certification under the WELL Standard

|             |
|-------------|
| AIR         |
| WATER       |
| NOURISHMENT |
| LIGHT       |
| FITNESS     |
| COMFORT     |
| MIND        |





PROSPERITY | JOBS | STRONG COMMUNITIES

**THANK YOU**

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