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# Welcome from the chair



The Better Buildings Partnership is an exciting and dynamic collaboration. At the end of our first phase, it has demonstrated its capacity to tackle the complex challenges faced by institutional property owners and consequently to raise the bar on industry sustainability practice. The partnership is proud to have instigated a suite of broad market transformations across leasing and waste that will scale far beyond the portfolios of our members.

This year we have extended our partnership for a further five years and begin our journey towards net zero emissions by 2050.

Our mission is to move industry forward, together.

We hope you can be part of it.

Paul Edwards Outgoing Chair (2013-2016)

. Mirvac Paul Wall Incoming Chair (2016-)

DEXUS Property Group

# acknowledgements

The Better Buildings Partnership (BBP) would like to acknowledge the professional expertise and insights of all its partners and contributors and thank its members for their commitment to leadership excellence.

### **PARTNERS**

































### **ASSOCIATES**











### **SUPPORTERS**







# about the partnership

The Better Buildings Partnership was launched by the Lord Mayor of Sydney, Clover Moore, on 30 June 2011. It is a collaboration of leading property owners, managers, peak bodies and industry influencers that work to improve the performance and sustainability of existing commercial buildings in the City of Sydney area and across Australia.

The partnership represents more than half of Sydney's commercial floor space in the city centre and is demonstrating how effective new models of collective action can be to unlock complex barriers around change.

Under the banner of 'moving industry forward together', the partnership has worked with industry professionals to create and embed new best practice standards in key areas are leasing, operational waste, refurbishment waste, solar installations, and optimising water use.

# BETTER BUILDINGS PARTNERSH

Lord Mayor, Clover Moore launched the Better Buildings Partnership in 2011

# background

The Better Buildings Partnership is a key initiative of Sustainable Sydney 2030.

Sustainable Sydney 2030 is a vision and plan for the development of a green, global, and connected city. Formulated after extensive community consultation, the plan sets out to make Sydney a leading environmental performer and, among other things, to reduce greenhouse gas emissions by 70 per cent by 2030 (from 2006 baseline) and net zero by 2050.

A total of 44 per cent of the City of Sydney's greenhouse gas emissions come from its commercial office buildings and their occupants<sup>1</sup>. These buildings are also responsible for significant water consumption and waste generation. Landlords and building managers play an important role in improving the energy, water and waste efficiency of Sydney's existing buildings.

<sup>1</sup> Office Sector Emissions Modelling Foundation Report, Pitt and Sherry, October 2016

# **How the BBP works**

Engaging industry and government

Enabling markets

Scaling sustainability Benchmarking progress



### **OBJECTIVES**

- Work collaboratively to improve the sustainability of Sydney's commercial and public sector buildings and achieve the City's Sustainable Sydney 2030 goals
- Improve the environmental performance of buildings within the City's local government area
- Facilitate the rollout of, and connection to green infrastructure through the development of commercial propositions and removal of structural barriers to action
- Engage with regulators and governments on key environmental policy and regulatory issues
- **Champion** and promote the objectives and outcomes of the Better Buildings Partnership and Sustainable Sydney 2030 to tenants and the wider community.

### governance

### I FADERSHIP PANEL

The Better Buildings Partnership is a co-creative project where members actively participate in collaborative decision-making. The partnership is directed by a leadership panel comprising senior representatives from each member organisation. This panel sets the partnership's annual work program, addressing the issues of most importance to members regarding the performance of existing buildings. Senior representatives act as champions in embedding new practices within their respective organisations.

### TECHNICAL WORKING GROUPS

In addition to the leadership panel, technical working groups cover key areas:

- environmental
- tenant and communities
- waste
- · benchmarking and engagement

The technical working groups lead project-specific industry collaborations. They advise on and deliver key projects identified by the leadership panel and develop resources such as toolkits, guidelines and voluntary best practice standards.



Danielle McCartney Environmental Technical Working Group Co-Chair (2011- ) UTS



**Chris Nunn**Environmental Technical
Working Group
Co-Chair (2015-)
AMP Capital



Jon Collinge Waste Technical Working Group Chair (2013–2016) Lendlease



Dave Palin Waste Technical Working Group Deputy Chair (2011- ) Mirvac Group



**Beck Dawson**Tenant and Communities
Technical Working Group
Chair (2014–2015)
Investa Property Group



Claire Hashman
Tenant and Communities
Technical Working Group
Chair (2016- )
DEXUS Property Group



Chris Derksema
Benchmarking and
Engagement Technical
Working Group
Chair (2011–2016)
City of Sydney

### **SECRETARIAT**

Project management of the Better Buildings Partnership is delivered through its secretariat, as provided by the City of Sydney.



Esther Bailey City of Sydney (2011- )



Ben Thomas City of Sydney (2012–2016)



**Alberto Jimenez** *City of Sydney (2015- )* 

# **Annual Results**

### Scope

The detailed scope of inclusions for this data is set out in the Partnership Benchmarking Handbook. A summary of the scope of the data includes:

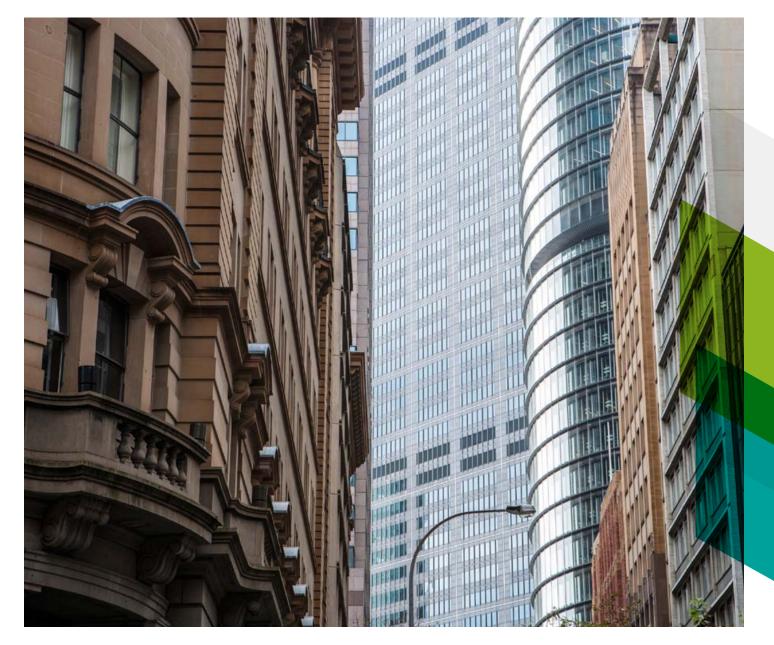
- all NABERS rate-able commercial office buildings under operational control of the Partners in Sydney CBD
  - base building services/meters
- emissions scope 1 & 2 electricity, energy and gas
  - diesel, refrigerants and scope 3 (waste) excluded
  - GreenPower and carbon offsets included

### **Data verification**

These outcomes rely upon the data reported by our partners. They are the result of best efforts in designing and model/process that provides metrics to measure sustainability performance over time.

### **Confidence**

The platform used by the Better Buildings Partnership calculated accruals where gaps in data exist. For FY16, 5.7% per cent of data is accrued.



# **Annual Results key figures**

REPORTING PORTFOLIOS (IN FY16)

90 COMMERCIAL OFFICE BUILDINGS (IN FY16) 2.48M SQM NET LETTABLE AREA (SYDNEY CBD)

49%

COMMERCIAL OFFICE SPACE IN SYDNEY CBD

A\$105B
INVESTMENT UNDER
MANAGEMENT

A\$32M SAVED P.A. FROM AVOIDED ELECTRICITY

47% EMISSIONS REDUCTION (FROM FY06) 965kT CO<sub>2</sub>-e AVOIDED (FROM FY06) 33% ENERGY REDUCTION (FROM FY06)

2.6TJ ENERGY AVOIDED (FROM FY06) 35%

POTABLE WATER

REDUCTION (FROM FY06)

6.4GL

POTABLE WATER

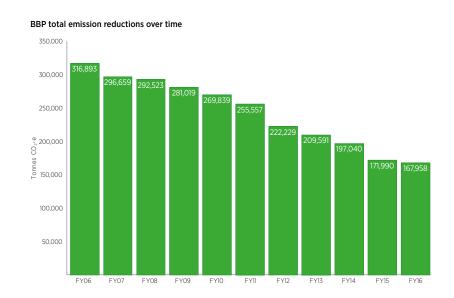
AVOIDED (FROM FY06)

# emissions

# Partnership total emissions over time, on-site and off-site

In FY16 the partnership was more than two-thirds of the way to reaching its target of reducing emissions by 70 per cent, having reduced emissions 47 per cent from FY06.

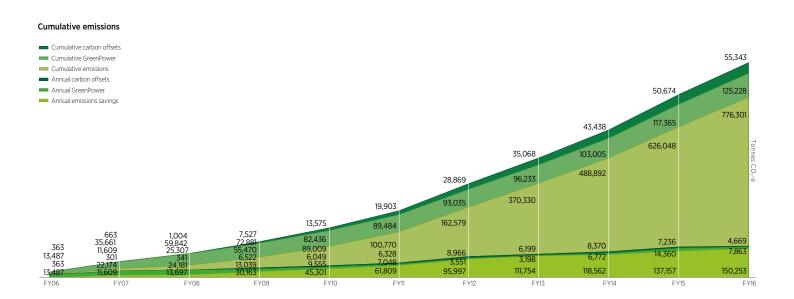
This exceeds the straight line target of 30 per cent.



# Partnership cumulative emissions savings and savings per annum, on-site

The partnership abated almost 162 kilotonnes of  $CO_2$ -e in FY16.

Since FY06, the partnership has abated over 956 kilotonnes of  $\rm CO_2$ -e.



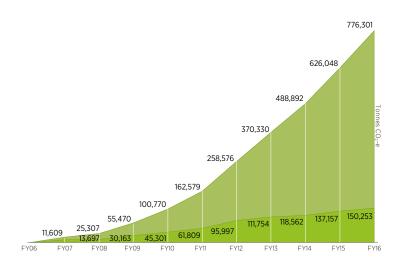
### emissions

# Partnership cumulative emissions savings and savings per annum on-site from building performance improvements

The partnership abated over 150 kilotonnes of  $\rm CO_2$ -e in FY16, more than any year before from building performance improvements such as energy efficiency, trigeneration and onsite renewables.

Since FY06, the partnership has abated over 776 kilotonnes of CO<sub>2</sub>-e from these building performance improvements.

### BBP cumulative emission savings

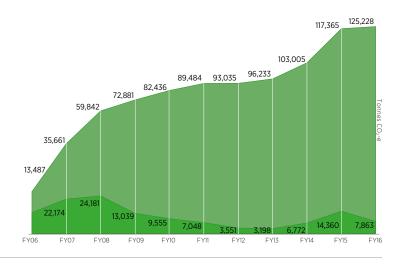


# Partnership cumulative emissions savings and savings off-site per annum from GreenPower®

The partnership avoided over 7.8 kilotonnes of  $\mathrm{CO}_2$ -e in FY16 from the use of GreenPower® as a more sustainable utility option. Some members use GreenPower® as a way of meeting their targets and creating a rational economic trigger for further action by the organisation on more cost-effective energy efficiency and other performance improvement measures in the future.

Since FYO6, the partnership has avoided over 125 kilotonnes of CO<sub>2</sub>-e through the use of GreenPower®.

### BBP cumulative emission savings from GreenPower

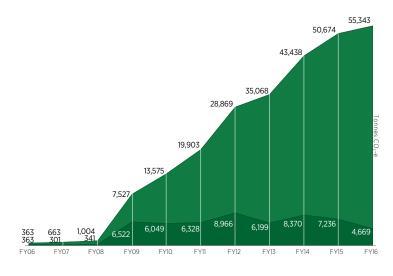


# Partnership cumulative emissions savings and savings per annum from carbon offsets

The partnership abated over 4.6 kilotonnes of  $\rm CO_2$ -e in FY16, including NCOS certified offsets where other measures were not feasible or as requested by tenants.

Since FY06, the partnership has abated over  $55 \text{ kilotonnes of } \text{CO}_2\text{-e.}$ 

BBP cumulative emission savings

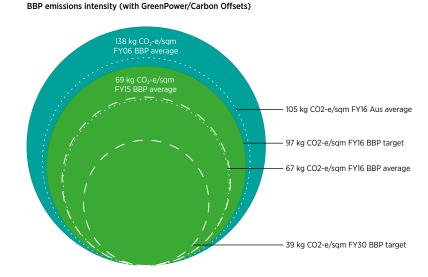


# emissions intensity

# Partnership emissions intensity, on-site and off-site (weighted average)

The average emissions intensity for a BBP building is 67 kg CO<sub>2</sub>-e/sqm, twice as good as the market average<sup>2</sup>. The average emissions intensity has halved since FY06.

In FY16, 5 BBP buildings were carbon neutral.



<sup>2</sup> NABERS 2016 Annual Report

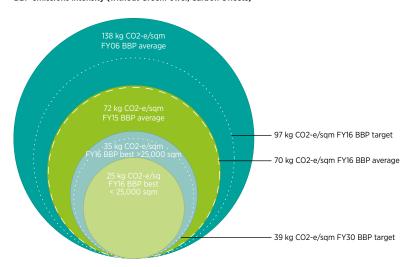
# Partnership emissions intensity, on-site (weighted average)

In FY16, the highest-performing small building (under 25,000 sqm) operated at an emissions intensity of 24 kg CO<sub>2</sub>-e/sqm.

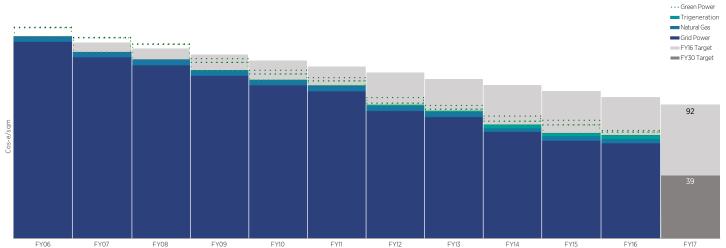
The highest-performing large building (over 25,000) operated at an emissions intensity of  $35 \text{ kg CO}_2$ -e/sqm.

By 2030 BBP buildings are expected to have an emissions intensity of less than 39 kg  $\rm CO_2$ -e/sqm. Both of these exemplar buildings have already reached that threshold.

### BBP emissions intensity (without GreenPower/Carbon Offsets)



### Partnership annual emissions intensity against target (weighted average)

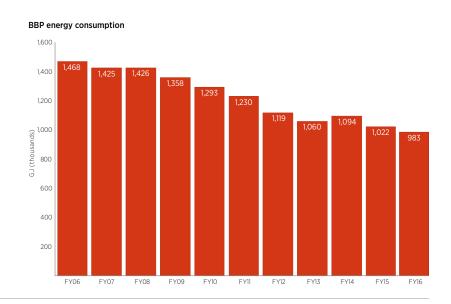


· · Carbon Offsets

### energy

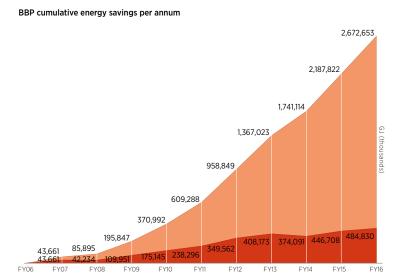
### Partnership energy consumption over time

The partnership's energy consumption reduced by 3.5 per cent in FY16 from the previous year.



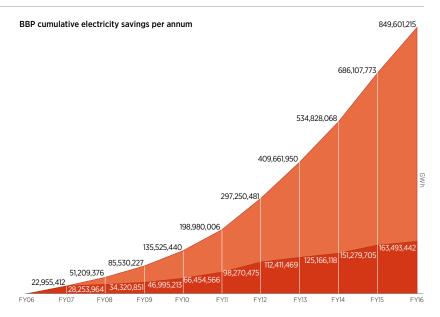
# Partnership cumulative energy savings and savings per annum

Since FY06, the partnership has saved over 2.6 TJ of energy from building performance improvements. In FY16, the partnership saved 484 GJ.



# Partnership cumulative electricity savings and savings per annum

The partnership is saving over \$32 million this year in electricity costs since FY06. Note this does not include GreenPower® purchase.



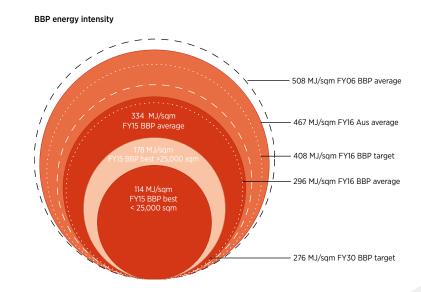
# energy intensity

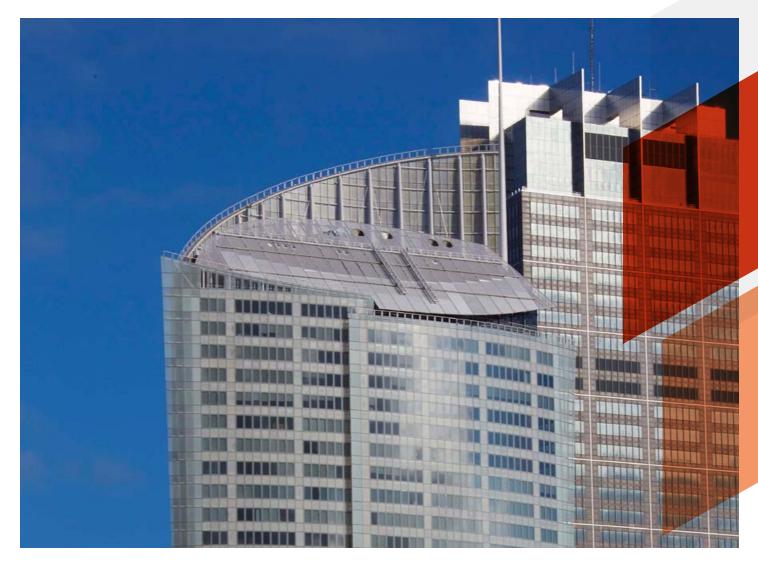
# Partnership energy intensity (weighted average)

The average energy intensity for a BBP building is 296 MJ/sqm, 44 per cent better than the market average and 7 per cent from the Sydney 2030 target.

The average energy intensity has reduced by 41 per cent since FY06.

In FY16, the highest-performing small building (under 25,000 sqm) performed at 114 MJ/sqm and the highest-performing large building (over 25,000 sqm) at 178 MJ/sqm; both of these are well under the Sydney 2030 target of 276 MJ/sqm.



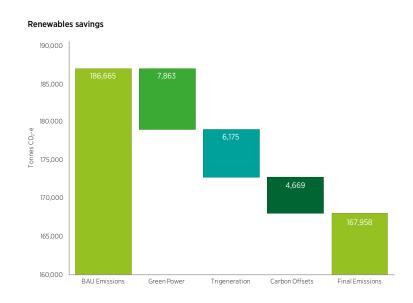


# renewables and low-emissions technology

# Partnership FY16 total savings from sources beyond energy efficiency

The partnership acknowledges that Sydney 2030 includes using low-emissions technologies like coand tri-generation and GreenPower® and carbon offsets as a legitimate way of meeting its targets.

In FY16, the use of alternative emissions reduction technologies provided an additional 10 per cent reduction in  $\rm CO_2$ -e.

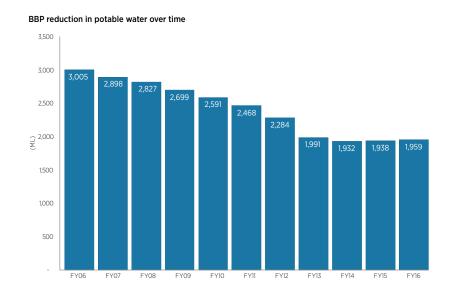




### water

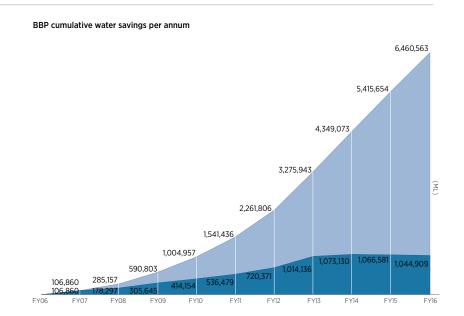
# Partnership total potable water consumption over time

In FY16, the partnership's annual water consumption increased by 1 per cent. However, since FY06, the partnership has reduced its annual potable water consumption by 35 per cent and saved over 6.4 GL of potable water, the equivalent of more than 2,400 Olympic-sized swimming pools.



# Partnership cumulative water savings and savings per annum

The partnership saved over 1 GL of potable water in FY16.



# water intensity

# Partnership potable water intensity (weighted average)

In FY16 the partnership continued to work towards the Sydney 2030 potable water intensity target of 0.77 kL/sqm.

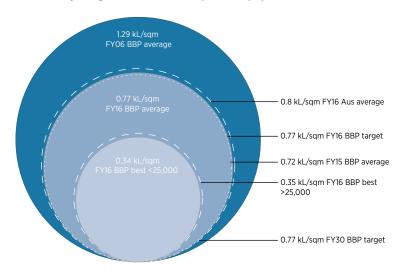
The average potable water intensity for a BBP building is 0.77 kL/sqm, a reduction of 41 per cent since FY06.

The average potable water intensity for a BBP building is 16 per cent better than known market average.

The highest-performing small building (under 25,000 sqm) in the BBP operates at a potable water intensity of 0.34 kL/sqm.

The highest-performing large building (over 25,000 sqm) in the BBP operates at a potable water intensity of 0.35 kL/sqm.

Water intensity averages - Australia versus BBP portfolio of properties





### **Commitments**



### FY2016 LEGACY PROJECTS AND COMMITMENTS

BEST PRACTICE

**LEASING** 

OPERATIONAL WASTE REPORTING DEFIT

WASTE TARGETS

COOLING TOWER OPTIMISATION SOLAR INSTALLATION

### **PROBLEM**

Most leases are inflexible, and do not consider ongoing environmental performance improvements.

### SOLUTION

Creation of best practice leasing standard, template clauses, a scoring tool and visual-recognition badge.

### **ACHIEVEMENT**

Members achieved a new precedent lease score of 'silver'.

### **PROBLEM**

Poor waste data prevents well informed decision making and optimal resource recovery.

### **SOLUTION**

Creation of new waste management guidelines for contracting and reporting.

### **ACHIEVEMENT**

Members implemented actions from the operational waste quidelines.

Work continues with NABERS to embed in new national standard.

### **PROBLEM**

80% of stripout waste goes to landflll due to contractual red tape.

### **SOLUTION**

Creation of best practice stripout waste guidelines.

### **ACHIEVEMENT**

Members contract services with 60% recovery targets.

More than 160k sqm of space has successfully trialled

### **PROBLEM**

Up to 9% of water could be saved through equipment upgrades.

### **SOLUTION**

Creation of best practice study and fact sheet.

### **ACHIEVEMENT**

81% of BBP assets have cooling tower monitoring.

### **PROBLEM**

Members need to act on the target of 50% of power being sourced from renewables by 2050.

### **SOLUTION**

Maximise technically feasible solar installs. Explore scalable offsite renewable options.

### **ACHIEVEMENT**

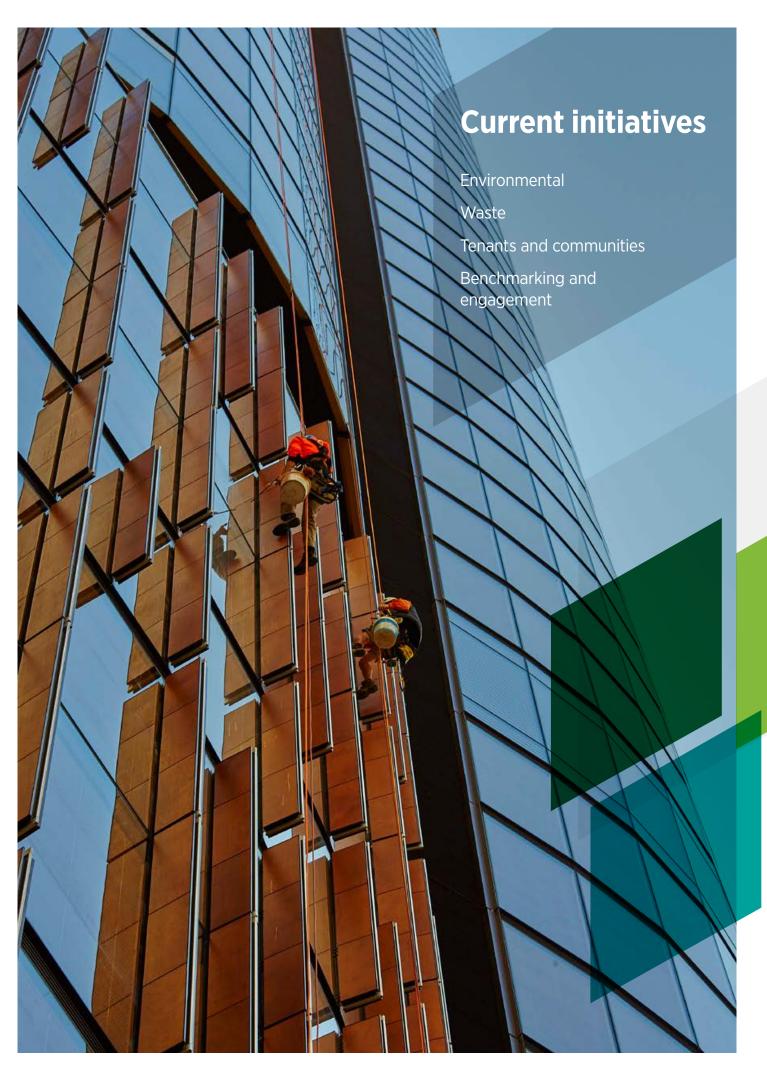
Over 880 kWp on-site solar installed.

Further ~1.8 MWp on-site solar in planning.

# **BBP project maturation model**

The BBP focuses its efforts on intractable and systemic industry issues and seeks to identify best practice on a particular issue. While the exact delivery method is designed for each issue, projects are generally moved from identification to delivery and transition to industry standard using a series of maturation levels. This process is not always direct and linear, as different issues may require an iterative looping of key areas to achieve the long-term objectives.





# **Current initiatives environmental**

# PROBLEM IDENTIFICATION

### INNOVATION RESEARCH

The partnership worked with key research bodies like the CSIRO, Low Carbon CRC, University of Wollongong, and other academic institutions to support projects such as low-carbon precinct design, building air tightness, fault detection diagnostics and others.

# DEFINE BEST PRACTICE

### NCC SECTION J COMPLIANCE CHECKLIST AND JV3 REPORT TEMPLATE

The partnership developed the NCC Section J Compliance checklist and JV3 Report Template. These tools facilitate improved compliance with current energy efficiency provisions according to the National Construction Code Section J, which ensure the energy efficient operations of buildings' envelopes.

### GAP ANALYSIS

# BBP COOLING TOWER FOUNDATION REPORT

The partnership released the BBP Cooling Tower Foundation Report which estimates potential water savings of up to 9% from best practice management. The partnership is developing a program of best practice management for building owners to implement within their operations and unlock water saving opportunities.

# GAP ANALYSIS

### PLAN TOWARDS NET ZERO

The partnership, having already progressed significantly toward the emissions, energy and water targets of Sydney 2030, began investigating its transition towards net zero emissions by 2050. The partnership supported the City of Sydney's office sector plan development and helped to inform targets and emissions reduction strategies.

# OTHER TOOLS AND PROJECTS DELIVERED

### **✓** City of Sydney masterplan engagement

Engagement with the City of Sydney's masterplanning processes, providing key input to the environment strategy, renewable energy and energy efficiency masterplans and climate change adaptation plan.

### **✓** Thermal reticulation network checklist

Checklist and case studies about how and when buildings may connect to a thermal reticulation network.

### Recycled water connection guidelines

Guidance, specifications and scenarios on preparing a building to utilise recycled water sources.

### **✓** Building performance case studies

Sharing of practical experience across a range of energy, water and renewables projects from industry leaders.

### waste



# BBP OPERATIONAL WASTE GUIDELINES

The partnership further developed its Guidelines for Operational Waste Procurement, Management and Reporting. These guidelines assist building owners and property managers to work more effectively and consistently with their waste and cleaning contractors to encourage higher value resource recovery. Implementation of these guidelines is providing greater confidence and transparency in reported waste data. In turn this allows for better decision making and more appropriate waste strategies to drive performance and support the move towards a circular economy.

### IMPLEMENTING BEST PRACTICE

# BBP OPERATIONAL WASTE ANALYSIS

These guidelines are now being embedded across the partnership's member portfolios, beginning with an analysis and benchmarking of members' performance and data integrity.

The work is now being used to inform a redevelopment of the NABERS Waste tool. Training on the guidelines will be available through peak bodies and industry partners in the coming year.

### DEFINE BEST PRACTICE

### BBP STRIPOUT WASTE GUIDELINES

The partnership released the BBP Stripout Waste Guidelines which set a new best practice standard to achieve a minimum resource recovery target of 60% during the office strip-out and refurbishment process. These guidelines and its associated workbook provide a framework to improve stripout operations, procurement processes, and ensure consistent measurement and reporting.

# ITERATIVE CO-CREATION

### CREATING NEW RESOURCE RECOVERY PATHWAYS FOR PROBLEM WASTE

The partnership engaged with leading resource recovery facilities and researchers to enable scaled industrial ecology processes to waste materials, including working with UNSW on the development of new engineered timber from fitout waste such as loose furniture.

# OTHER TOOLS AND PROJECTS DELIVERED

### ✓ Industry training

The partnership presented the BBP Stripout Waste guidelines to over 250 industry stakeholders through events, presentations and masterclasses.

### ☑ Best practice operational waste guidelines

Outlines best practice steps for the management of waste and provides flowcharts on what areas of procurement, management and reporting of waste are most appropriate for intervention.

### Operational waste management plan template

Sets a common reporting standard that enables comparison between multiple sites and providers. Consistent application will reduce reporting costs.

### Data integrity rating matrix

Sets a framework for rating the confidence in your waste data based on whether it has multiple sources.

### Outcomes-based reporting paper

Offers a grading to evaluate the outcomes for waste to enable a move towards closed-loop recycling for socially beneficial outcomes.

### Commercial office industry density-weight conversions

Sets a common reporting standard that enables accurate comparison between multiples sites and providers. Consistent application will reduce reporting costs, increase reporting confidence and inform decision making.

### ✓ Model operational waste procurement clauses

Provides ready-to-use waste contract procurement clauses to ensure clear delineation of expectations and roles.

### Use of social enterprise for stripout case study

Industry example of low-cost, high-skill resource to disassemble a fitout with care for maximised reuse.

### ✓ Tenancy refresh with refurbished material case study

Profile of a project demonstrating cost savings from refreshing a tenancy using refurbished materials, freeing budget for better quality technology, finishes and staff amenities.

### Resource recovery in office stripout case study

Provides a practical demonstration of how simple planning and procedural changes can dramatically increase recovery rates in office stripout.

### Resource recovery facility directory

Provides a listing of Sydney operators that can assist in resource recovery for common materials from office stripout.

### Waste management report template

Provides consistent reporting framework to assist industry in establishing more robust data about the volume and composition of waste from office stripout.

# **Current initiatives tenant and communities**

TRANSITION TO STANDARD PRACTICE

# BBP LEASING STANDARD AND ASSOCIATED TOOLS

The partnership launched a new leasing standard which sets a minimum definition of green leasing as a way for tenant and landlords to collaborate for better sustainability and performance outcomes. For those seeking to compete, the standard also has bronze, silver and gold ratings which may be included on lease documentation and marketing materials.

### TRANSITION TO STANDARD PRACTICE

### BBP LEASING SCORING TOOL

This tool enables property managers to rate their current lease or select the clause to include in a new lease to meet a compliant, bronze, silver or gold rating. The tool outputs a scorecard that can be used as a brief to legal.

### TRANSITION TO STANDARD PRACTICE

# BBP TEMPLATE CLAUSES AND MEMORANDUM OF UNDERSTANDING TEMPLATE

This provides a full set of drafted clauses ready to include in a lease. The standard and template clauses include 20 topics relating to energy, water, waste and IAQ management; sustainable transport; sustainable procurement; fitout works; social initiatives; comfort; and information sharing For those wishing to add value in mid-lease term, or just starting out, a standalone Memorandum of Understanding is also available.

### IMPLEMENTING BEST PRACTICE

# BBP LEASING STANDARD TRAINING

The partnership held several members' events to consult and train industry professionals and leasing teams on its leasing work and seek feedback on its new leasing standard. Additionally, the members began to conduct internal sessions to begin lifting their precedent lease performance. A formal industry training module is in development for use by registered training organisations and associate property manager members.

# OTHER TOOLS AND PROJECTS DELIVERED

### ✓ Tenants and Landlords Guide to Happiness

Easy to read explanation of why collaboration and best practice leasing matters, how it works, and case studies on how it delivers benefits to both parties.

# Why Choose High-Performing Buildings factsheet

Developed with CitySwitch, this factsheet demonstrates the value of choosing a building with strong environmental performance into financial value through direct savings, productivity and reduced employee churn. Builds the case to spend more per square metre and still deliver improved value to tenant organisations.

### Template site selection briefs

Helps tenants to articulate their sustainability objectives in their requests for information to the market and the expected detail in responses from leasing agents and tenant representatives.

### ✓ Vertical communities toolkit

Template tools to bring tenants together to collaborate through building management committees and engagement, establishing common goals, targets and unlock building upgrades.

### ✓ Academic paper

A Method for Analysing and Assessing the Collaborative Potential and Environmental Commitment of Commercial Leases

# BBP Leasing Index - Progress of Best Practice Leasing

Study to understand the current conditions of green leasing within the office space market, providing a statistically analysis and rating of the level of green leasing across Sydney CBD.

### ✓ The new normal in leasing - BBP Event

Event about the Better Buildings Partnership's leading work in green leasing and how this work fits into the broader international context of investment and tenant engagement.

# benchmarking and engagement



# EVIDENCE BASE FOR DECENTRALISED GENERATION AND DEMAND MANAGEMENT

The partnership engaged with Transgrid as part of its Powering Sydney's Future project to provide practical and commercial case studies for decentralised generation and demand management.

# BENCHMARK PROGRESS

# SUPPORT CO-CREATION OF THE CITY OF SYDNEY ENVIRONMENTAL SUSTAINABILITY PLATFORM

The partnership supported the development of the City of Sydney's environmental sustainability platform. This platform will collect and manage building performance data from BBP members' assets. It will have the capacity to compare assets according to their sustainability performance, detailing the best and worst performers, in order to better knowledge share for improvements across the board.

# ITERATIVE CO-CREATION

# INSIGHTS TO IMPROVE ASSET PERFORMANCE

The partnership commenced evaluating opportunities to drive insights from existing data sets. Using historical BBP data, we will seek to produce leading and unique insights that will enable better-informed decisions, help achieve sustainability targets, communicate trends and celebrate leading performers in order to shift industry.

# OTHER TOOLS AND PROJECTS DELIVERED

### BBP benchmarking targets

Shared vision and interim markers to substantiate progress towards common goals such as the Sydney 2030 targets.

# C40 Private Building Efficiency Network Data Insight Report

Report on city policies and datasets related to building energy performance data across participating cities.



# The year ahead big 5 commitments FY17







