

# Sustainability

Integrating  
sustainability into  
property and  
infrastructure.

wsp





**Can we nurture  
*sustainable societies,  
connect communities and  
seize opportunities?***

**What if we can?**

**Urbanisation.  
Population growth.  
Climate change.  
Technological  
advancements.  
Energy challenges.**

***These global  
megatrends  
are some of the  
most salient  
issues impacting  
governments and  
businesses today.***

Governments, cities and businesses face significant challenges related to population growth, resource demands and constraints, and extreme weather events that impact the resiliency and sustainability of our communities.

WSP is committed to integrating the principles of sustainability into our work in planning, designing, and managing both property and infrastructure.

By helping our clients design lasting solutions for the advancement of our built and natural environments, we are building a powerful legacy.



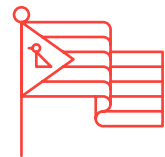
**48,000**

Employees globally



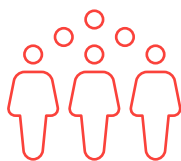
**550**

Offices



**40**

Countries



**50+**

Sustainability  
professionals across ANZ



**60+**

Offices across ANZ



*For societies to thrive,  
we must hold ourselves  
accountable for tomorrow.*



## OUTCOMES

Our focus on achieving climate positive outcomes with secure, emissions-free energy enables us to deliver projects that:

- Avoid the depletion of non-renewable resources
  - energy, water, materials and waste
- Are resilient to climate change
- Enhance amenity, liveability and health for residents and visitors alike
- Provide local habitat connectively, thereby enhancing local biodiversity
- Are connected, with frictionless, affordable, accessible and mobility solutions
- Enhance affordability and equity in their delivery, operation and supply chains
- Reconcile with Indigenous Australians and seek to reflect their culture

## EXCELLENCE AND EXPERTISE

We bring a market-leading offering with deep experience in sustainability to support the delivery of projects in every sector of the built environment across ANZ, such as:

- Big infrastructure like Melbourne and Sydney metros as well as high performance public buildings like Sydney Modern
- Pioneering commercial development like 30 The Bond and 720 Bourke Street to social housing at Ivanhoe Park

We have delivered climate change strategies and resilience across linear infrastructure (Sydney and Melbourne Metro), water utilities (Lower South Creek Upgrades NSW), commercial development (for ISPT, CBUS, Frasers and Charter Hall), neighbourhoods (Edmondson Park) and urban renewal for both public and private clients (Tonsley Park, Fisherman's Bend and Central Park).

We support:

- Smart cities (at Norwest), healthcare for an aging population, logistics and the emergence of precinct utilities for low-carbon trajectories
- Government and major institutions – shaping public projects for the City of Sydney, Moreton Bay, the University of Western Sydney and Newcastle University
- Developers and asset owners – delivering projects and portfolios with enhanced sustainability performance and reporting
- Builders to manage sustainability through construction

We have shaped planning and policy with Transport for NSW (Future Transport).

WSP provides a fundamental bridge between two dominant systems in the planning, policy and delivery of the urban environment – vertical and horizontal infrastructure.

We bring a depth and breadth of expertise in delivering more sustainable outcomes across the built environment, during each phase of the asset life cycle, across multiple sectors, and for our clients in both the private and public sector.

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Creating a sustainable built environment is the core of our expertise. Through a deep technical understanding of the buildings, infrastructure and environmental opportunities of cities, we are enabling and shaping the development and ownership of green buildings, infrastructure and emerging urban precincts.

WSP provides a multi-sector sustainability team of more than 50 people operating across ANZ. We support our clients' projects; assessing, improving and reporting sustainable performance across the built environment: Sustainable Buildings, Sustainable Infrastructure, Sustainable Places and Sustainable Organisations. We support our clients' projects in Planning, Design & Construction and Operations & Asset Management phases of asset life cycle.

We deliver the city-shapers of our age – the complex precincts that are defining the major transitions modern cities are experiencing. We bring a deep understanding of urban systems – buildings, utilities, mobility infrastructure and the public realm – to the pursuit of future-ready precincts. We are focused on changing the trajectory of cities to materially address urbanisation, affordability, climate change, amenity, placemaking, technology and the increasing demands for urban competitiveness.

Our approach to sustainability in the built environment is founded on a preferred future for cities and infrastructure – a set of principles that would describe a successful urban project in the context of the major environmental and technological transitions we face.





## BUILDINGS

WSP is creating high performance spaces, prototyping innovative technology and championing passive design.

Working extensively in both new and existing building markets, our team creates and transforms client spaces to achieve world-standard sustainable outcomes whilst simultaneously delivering considerable economic benefit by lowering operational costs and increasing tenant retention.

As sustainability consultants, we adopt a holistic design approach to optimise energy, water and waste reduction while creating spaces that are comfortable and enjoyable to occupy.

### STATUTORY AND REGULATORY

- Section J
- NatHERS
- BASIX

### BEST PRACTICE CERTIFICATION

- Green Star Design and As-built and Interiors
- NABERS
- LEED
- Living Building Challenge & WELL

### TECHNICAL ANALYSIS

- Climate change risk and adaptation
- High performance building design for passive buildings
- Thermal and energy modelling
- Natural light and visual comfort modelling
- Computational Fluid Dynamic modelling (indoor environment and wind assessments)
- Life cycle analysis
- Façade and building systems optimisation
- Renewable and building systems optimisation
- Renewable and onsite generation feasibility
- Water balances and water reuse system design and glare analysis

### ADVISORY SERVICES

- Existing building upgrade programs
- Town planning sustainability reporting and masterplanning



## INFRASTRUCTURE

WSP provides sustainability services to a broad range of infrastructure projects, such as utilities (water, electrical power and thermal energy), rail, light rail, roads and bridges, airports, ports and harbours, and active transport projects.

Resolving a project's design response to climate change, resource efficiency, whole of life impacts, certification and compliance, and governance and procurement is our priority.

Our teams coordinate the multi-faceted and complex sustainability requirements in infrastructure projects, with the aim to knit together disparate discipline teams with varying design objectives.

Delivering holistic sustainability outcomes through all phases of the infrastructure life cycle, from planning and business case development, through to concept design, delivery, handover, and operation.

### STATUTORY AND REGULATORY

- EIS/EES sustainability impact assessment and technical reports

### BEST PRACTICE CERTIFICATION

- Infrastructure Sustainability (IS) Rating management
- Data collection, reporting and assurance

### TECHNICAL ANALYSIS

- Climate Change Resilience
- Whole of Life Cost (WoLC) analysis
- Life Cycle Assessment (LCA)
- Resource efficiency and modelling; energy, Greenhouse Gas (GHG), water and waste assessment
- Renewable energy and battery storage feasibility
- Green Infrastructure and Water Sensitive Urban Design (WSUD)
- Computational Fluid Dynamic modelling (passenger comfort and wind assessment)

### ADVISORY SERVICES

- Tender phase sustainability support
- Business case sustainability assessment
- Sustainable procurement
- Sustainable mobility strategy
- Sustainable infrastructure masterplanning



## PLACES

We collaborate and advise on urban renewal, masterplanning, rezoning and planning applications to embed principles of sustainability and resilience in buildings, infrastructure and the public domain.

We integrate engineering services between vertical and horizontal infrastructure where property development and transport infrastructure intersect.

We provide detailed design and advisory services for resource efficiency in the urban environment; amenity and liveability; biodiversity and habitat connectivity; materials and waste; non-vehicular transport; climate resilience and green buildings.

Leveraging our WSP Reconciliation Action Plan, we work with clients to embed meaningful participatory engagement with Aboriginal and Torres Strait Islander Australians in the placemaking of urban projects that enable more liveable, resource-efficient and competitive cities.

### STATUTORY AND REGULATORY

- Planning and rezoning sustainability strategy

### BEST PRACTICE CERTIFICATION

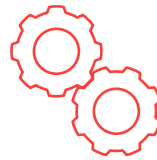
- Climate change risk and adaptation
- Precinct analysis of energy, GHG emissions, water, waste materials and sustainable transport
- Life cycle analysis
- Renewable and onsite generation feasibility and feasibility analysis

### TECHNICAL ANALYSIS

- Green star communities
- Enviro-Development
- WELL precincts and living community challenge

### ADVISORY SERVICES

- Precinct planning sustainability policy
- Smart cities and digital strategy
- Sustainable mobility strategy
- Precinct utilities strategy (generation, transmission, water, water recycling, smart grids, district thermal)
- Feasibility and procurement
- Place-based reconciliation and urban biodiversity planning



## ORGANISATIONS

We support our clients' sustainability goals from development through to reporting, prioritising and proactively addressing sustainability issues that impact their business.

Our multidisciplinary expertise covers all aspects of organisational sustainability performance - from development strategy to identifying opportunities, providing best practice tools, supporting implementation and communicating outcomes.

Organisations we have worked with include:

- QIC National Portfolio NABERS, GRESB Reporting and ARENA funding
- ISPT National Portfolio NABERS
- Vicinity Centres National Portfolio Sustainability Framework
- University of Newcastle Sustainability Guidelines
- City of Sydney Sustainability Guidelines

### STATUTORY AND REGULATORY

- Energy and carbon disclosure (BEEC)
- National Greenhouse and Energy Reporting

### BEST PRACTICE CERTIFICATION

- GRESB
- Carbon Disclosure Project
- Global Reporting Initiatives (GRI<sub>4</sub>)
- Green Star Operations
- NABERS (portfolio)

### TECHNICAL ANALYSIS

- Energy efficiency and investment analysis
- Carbon accounting
- Climate change strategy for portfolios and assets
- Climate change risk assessment for portfolios and assets
- Renewable energy feasibility and procurement

### ADVISORY SERVICES

- Corporate strategy
- Planning and target setting
- Climate change strategy



# Sustainability: *Buildings*







**MEDIBANK**  
**720 BOURKE STREET**



An integrated  
fitout design



6 Star Green Star -  
Communities rating



Awarded WELL  
Gold Certification

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**Location:** Melbourne, VIC

**Client:** Cbus Property

**Project Value:** AUD220m

**Image Credit:** Bert Kun

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Bourke Street is the focal point of entry to Melbourne's Docklands; it is a prestigious 16 storey commercial tower, including an integrated fitout for the anchor tenant, Medibank.

The main tower sits atop a four-level podium which incorporates retail spaces and a park, providing activation at multiple levels along the stadium concourse and at Bourke Street level.

The building also features one of the city's fastest vertical transport systems, including a Destination Control System that adds exceptional efficiencies to tenant movement and reduces waiting times.

In October 2017, 720 Bourke Street was the first existing building in Australia to be awarded WELL Gold certification for both shell and core. The WELL rating recognises building attributes and operational practices that influence health and lifestyle choices that occupants make.





## 1 PARRAMATTA SQUARE

**Location:** Parramatta, NSW

**Client:** Charter Hall/John Holland Group

**Project Value:** AUD220m

**Image Credit:** Bryan Siebel

The project involved the construction of a new multistorey commercial building known as 1PSQ, located at 169 Macquarie Street, Parramatta.

The building consists of two split basement levels which include plant, loading dock and car parking. A ground floor retail space and lobby area, with a further 14 storeys of commercial floor space.

The building is leased to the tenant Western Sydney University. As an educational tenant the certifier designated the building classification as 9b and 5 as defined by the BCA.

The project was designed to achieve a 5 Star Green Star Education design and as-built rating.



## 664 COLLINS AND 699 BOURKE STREET

**Location:** Melbourne, VIC

**Client:** Mirvac

**Project Value:** Undisclosed

**Image Credit:** John Gollings

The two tower development utilises valuable airspace directly above the western platforms of Southern Cross Station. The development is built over a "service deck" above the stations with one level of car parking. As part of the development, a public realm comprising of a pedestrian access way interconnects Bourke and Collins Street at the service deck level.

Our building and specialist services team also provided the base build and fitout design for AGL's tenancy for the 699 Bourke Street tower. Covering some 20,000m<sup>2</sup> the tower sits on top of an elevated platform that rises from the iconic curves of the Southern Cross Station rooftop. AGL's building needed to adapt to the needs of the organisation to reflect its 'Energy in Action' branding and focus on sustainability. In line with its own corporate sustainability agenda, WSP's sustainability team worked with AGL to achieve a 5 Star Green Star Office rating.





## MELBOURNE CONVENTION & EXHIBITION CENTRE PRECINCT

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**Location:** Melbourne, VIC

**Client:** Brookfield Multiplex, Plenary Group, Victoria Government consortium Project

**Value:** AUD1b

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Melbourne's new Convention and Exhibition Centre Precinct includes the largest convention centre in the southern hemisphere, and was awarded a 6 Star Green Star Pilot rating.

The project was delivered as a Partnerships Victoria project with the State Government contributing AUD370 million to the project. The centre was awarded a 6 Star Green Star Convention Centre PILOT (World Leader) rating in January 2008.



# Sustainability: *Infrastructure*







## **SYDNEY METRO NORTHWEST**



**Leading IS Design**



**Awarded Gold  
Sustainable Design**

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**Location:** Sydney, NSW

**Client:** Transport for NSW

**Project Value:** AUD8.3b

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Delivered from our Sydney office, WSP lead the sustainability deliverables for the OTS Design Joint Venture providing coordination of 300 professionals across 212 engineering detailed design packages to meet the highest sustainability benchmarks for a rail infrastructure project, to date.

The project achieved a Gold Sustainable Design Guideline rating and a Leading IS Design rating from the Infrastructure Sustainability Council Australia setting new benchmark for infrastructure sustainability.

Other WSP sustainability services included Computational Fluid Dynamics and bulk air movement modelling to support platform spot cooling; energy consumption software model development for operations.

For the Surface and Viaduct Civil works (SVC) package WSP led the sustainable design strategy for the SVC package on behalf of the Impregilo Salini Joint Venture. This includes the delivery of sustainable design initiatives covering the Infrastructure Sustainability rating tool, Transport for NSW Sustainable Design Guidelines and project specific performance targets relating to design, procurement, construction and workforce and skills development.



## NEWCASTLE LIGHT RAIL

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**Location:** Sydney

**Client:** Transport for NSW

**Project Value:** AUD460m

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WSP delivered the sustainability plan, climate risk assessment, energy and carbon report, whole of life costing, sustainable design guideline rating and the IS rating to AFC for the Newcastle Light Rail project running 2.7 kilometres in length from the Newcastle Interchange at Wickham to Pacific Park in Newcastle East.

Delivered from our Sydney office, WSP coordinated all design disciplines, contractor and operator's integration of sustainability initiatives into detailed design and procurement. We surpassed the TfNSW Gold rating requirement and achieved a Platinum level Sustainable Design Guidelines (SDG) rating at no additional cost, the first for a light rail project.

## ARTC INLAND RAIL

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**Location:** NSW/QLD

**Client:** Australian Rail Truck Corporation (ARTC)

**Project Value:** AUD10.2b

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ARTC Inland Rail Project is a 1,730 km freight link to meet future demand for inter-capital domestic containerised freight between Melbourne and Brisbane. It is a large and complex programme that divides rail line into 13 separate projects to be delivered over 10 years.

Delivered from our Brisbane office, WSP led the Infrastructure Sustainability Council Australia IS Design Rating sustainability deliverables for the detailed design of Parkes to Narromine (P2N) spanning 106 km, and detailed design of Narrabri to North Star (N2NS) - an upgrade to 188 km of track.

Delivered from our Newcastle office, WSP led sustainability services for phase 1 and 2 Environmental Assessment and Feasibility I2S package, for Sustainability Management Plan, Climate Risk Assessment, Greenhouse Gas Inventory Report, IS Rating and Pathway.





## LOWER SOUTH CREEK TREATMENT UPGRADE

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**Location:** Sydney, NSW

**Client:** Sydney Water

**Project Value:** AUD300m

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The Lower South Creek Treatment Program (LSCTP) will provide new and upgraded wastewater infrastructure to support population growth in Sydney's north-west.

The program is adopting several innovative process technologies which will be a first for Australia; delivering significant sustainability outcomes for the asset owner (Sydney Water) and paving the way to a more sustainable water services industry.

The LSCTP is managed by a joint venture between WSP and UGL Limited on behalf of Sydney Water, using a collaborative Delivery Partner model. The program is one of the largest water utility capital projects to benchmark sustainability with the Infrastructure Sustainability framework.

## OUTER SUBURBAN ARTERIAL ROADS (OSAR) TECHNICAL ADVISOR

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**Location:** Melbourne, VIC

**Client:** VicRoads

**Project Value:** AUD1.8b

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The OSAR program involves the delivery of new build and maintenance road packages as part of a PPP delivery models with 25 year operation phases. The program is to be delivered as 3 packages – Western, South Eastern and Northern. At this time – the Western Package (\$1.3 billion) is in a tender evaluation phase.

Each package of the OSAR program is targeting an IS rating. As part of our technical advisor role, WSP has worked with VicRoads to develop a sustainability strategy for these packages and to include this as part of a tender requirement for competitive bidding. The first of these packages in design is the Mordialloc bypass.

Delivered from our Melbourne office, WSP has been working with various stakeholders from VicRoads including Environmental, Sustainability, Program Delivery and Procurement to integrate sustainability into the tender documentation, including the project technical requirements and as part of a weighted evaluation mechanism to drive higher and more competitive tender outcomes.



# Sustainability: *Places*







## CENTRAL PARK PRECINCT



A community connected  
through collaboration



6 Star Green Star -  
Communities rating



A place for ideas  
to become reality

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**Location:** Broadway, NSW

**Client:** Fraser Property Australia and Sekisui House Australia

**Project Value:** AUD2b

**Image Credit:** Fraser Property Australia and Sekisui House Australia

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With environmental sustainability at its core, this AUD2b, 5.8 hectare, urban regeneration project is the largest of its kind in Sydney.

Central Park displays a market-first precinct utility system to deliver world class sustainability outcomes; including central thermal plant with tri-generation, precinct electricity network and precinct water recycling facility to support irrigation for the extensive green walls, heat rejection for the central plant and toilet flushing and clothes washing throughout the precinct.

WSP has worked extensively across the whole precinct from concept. We provided masterplanning, detailed design and construction administration duties for all infrastructure amplifications and relocations.





## EDMONDSON PARK TOWN CENTRE

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**Location:** Edmondson Park, NSW

**Client:** Frasers Property Australia

**Project Value:** AUD237m

**Image Courtesy:** Frasers Property Australia

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This long-awaited development will provide Sydney's South West with a new civic heart. Drawing together an ever-expanding community, the mixed use precinct will contain a new residential neighbourhood of medium and high density dwellings, a town centre, recreational space and a range of education and community facilities, which will all be connected to a new railway station.

With a clear focus on sustainability, all dwellings will have access to on-site solar PV to facilitate electric vehicles and provide for a minimum of 100 dwellings that will have battery storage.

In addition, extensive water-sensitive urban design and a recycled water loop will provide for a unique water-efficient and amenable development.

## PARKLANDS

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**Location:** Gold Coast, QLD

**Client:** Grocon

**Project Value:** AUD550m

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This urban renewal project located on Queensland's Gold Coast is one of the most significant of its kind to have ever been undertaken in the region. The development contains seven hectares of residential and retail development that comprise of 1,252 apartments and townhouses and a shopping precinct as well as an additional seven hectares of parklands and open space.

WSP supported the strategy and delivery of a 6 Star Green Star Communities rating that included initiatives such as the planting of 136,420 new trees across the site as well as delivering green building design, reestablishing a natural creek and floodplain, creating large green spaces across the site and adopting a smart metering systems to improve energy and water consumption.





## IVANHOE PARK

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**Location:** Sydney, NSW

**Client:** Aspire Consortium

**Project Value:** AUD2.2b

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As part of the Ivanhoe Civic Precinct Masterplan, the rejuvenation of the civic precinct and development will provide new community facilities. A key part of the NSW Government's Communities Plus program, Ivanhoe Park will involve growth in the social housing portfolio.

An innovative development, the precinct will see the creation of over 3,000 new dwellings in this key Sydney node which will provide an influx of social, and affordable and market housing to the market.

To support the local community, the development also includes a new vertical school, innovative smart grid, public domain for community and biodiversity benefit, efficient buildings and extensive social infrastructure for intergenerational living.

As part of the Aspire Consortium, WSP has worked collaborative with Frasers Property, Citta Property Group and Mission Australia to develop a sustainability strategy and future-proof the infrastructure for the area.

Targeting a 6 Star Green Star Communities rating, the smart grid operator is on track to make the Ivanhoe community carbon neutral in operation.

## TONSLEY PARK INNOVATION DISTRICT

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**Location:** Adelaide, SA

**Client:** Grocon

**Project Value:** AUD550m

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**Image Courtesy:** Photography - Dan Schultz | Public Realm Design - Oxigen

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Tonsley is one of Australia's first innovation precincts, providing an environment for industries to innovate and grow through collaboration and connection to research and education.

Tonsley is Australia's first mixed-use redevelopment to be awarded the prestigious 6 Star Green Star – Communities rating, an achievement the GBCA's Chief Executive Officer says reflects Tonsley's outstanding commitment to sustainability.

WSP has supported the 6 Star Green Star Communities rating for the precinct, notably the procurement of a smart-grid utility operator for extensive on-site renewable energy and micro-grid design.

## CONTACTS



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