

ARUP

Annual Report 2016



Putting sustainability at the heart of every project, we've used materials, resources and technology to provide maximum return with minimal negative impact.

Throughout our history, we've used design and engineering to improve people's environments. Today, climate change and population growth make it more important than ever that we go on leading by providing our clients with sustainable solutions. The *COP21* agreement was a watershed moment to fight climate change and opens up new opportunities for forward-thinking businesses. Our Chairman signed the Paris Pledge, along with hundreds of cities, businesses and other organisations. In doing so, he reaffirmed our focus on acting sustainably in all we do.

Improving urban environments

Our *Living Wall Façade System* is designed as a cost-effective way to enhance urban well-being and biodiversity, and to mitigate pollution. After installing a number of demonstration walls, we're engaging with partners to bring the concept to market.

Cutting energy consumption

Supermarkets use more energy than any other commercial building sector but we helped our client create an industry benchmark. The *H-E-B Austin Mueller* store in Texas is 64% more energy efficient than the US grocery store median by using advanced refrigeration/cooling systems, glare-free indirect daylight and all LED lighting. The Dutch Green Building Council awarded an Outstanding BREEAM sustainability award to the new *Energy Academy Europe* building in Groningen. An expanded atrium maximises daylight and natural ventilation will be used for almost half the year. A thermal labyrinth will cool air in summer and warm it in winter.

In Sydney, *50 Martin Place* shows that historic buildings can be retrofitted and still deliver world-class working environments. Viewed from the street, the building retains its essential character. Inside, its modernity



“Managing our Venturing Initiative gives me the opportunity to work with colleagues to bring their innovative concepts to life. By developing technologies that have sustainability at their core, and that are built on viable business models, we can create real, lasting impact in the built environment.”

Ralph Wilson
Ventures Manager

Ralph joined Arup in 2010. He manages Arup's Ventures Portfolio in our London office.

is apparent throughout: interconnected spaces enhance interaction, cooling units are integrated into desks, and an onsite treatment facility captures and processes storm water. The air conditioning system utilises the expanded atrium to draw fresh air across the floors and up through the void.

Creating more resilient cities

As utilities become more customer-focused, our survey with the *Australian Water Association* provided insights into consumers' views. Most Australians are worried about future water supplies, but 90% see water recycling as a sustainable non-drinking source and 82% support desalinated drinking water. In China, our knowledge of water-sensitive urban design is helping us plan for seasonal water scarcity and flooding in the *Baotou* shanty area. New parks and gardens will help manage rainfall and mitigate flood risks, while also providing areas for public recreation.

Caracas lacks safe housing, has poor energy access, and is at high risk of flooding and earth tremors. *La Rinconada Masterplan* aims to act as a catalyst for change and social inclusion in Venezuela's capital by developing new housing, parks and sports stadiums. We have also collaborated to create *CRAFT (Climate Risk and Adaptation Framework and Taxonomy)*, a diagnostic tool for cities to compare their own processes and actions with best practice principles. CRAFT can enhance and accelerate action at local level and more than 500 cities currently use it.

Project
50 Martin Place

Location
Sydney, Australia

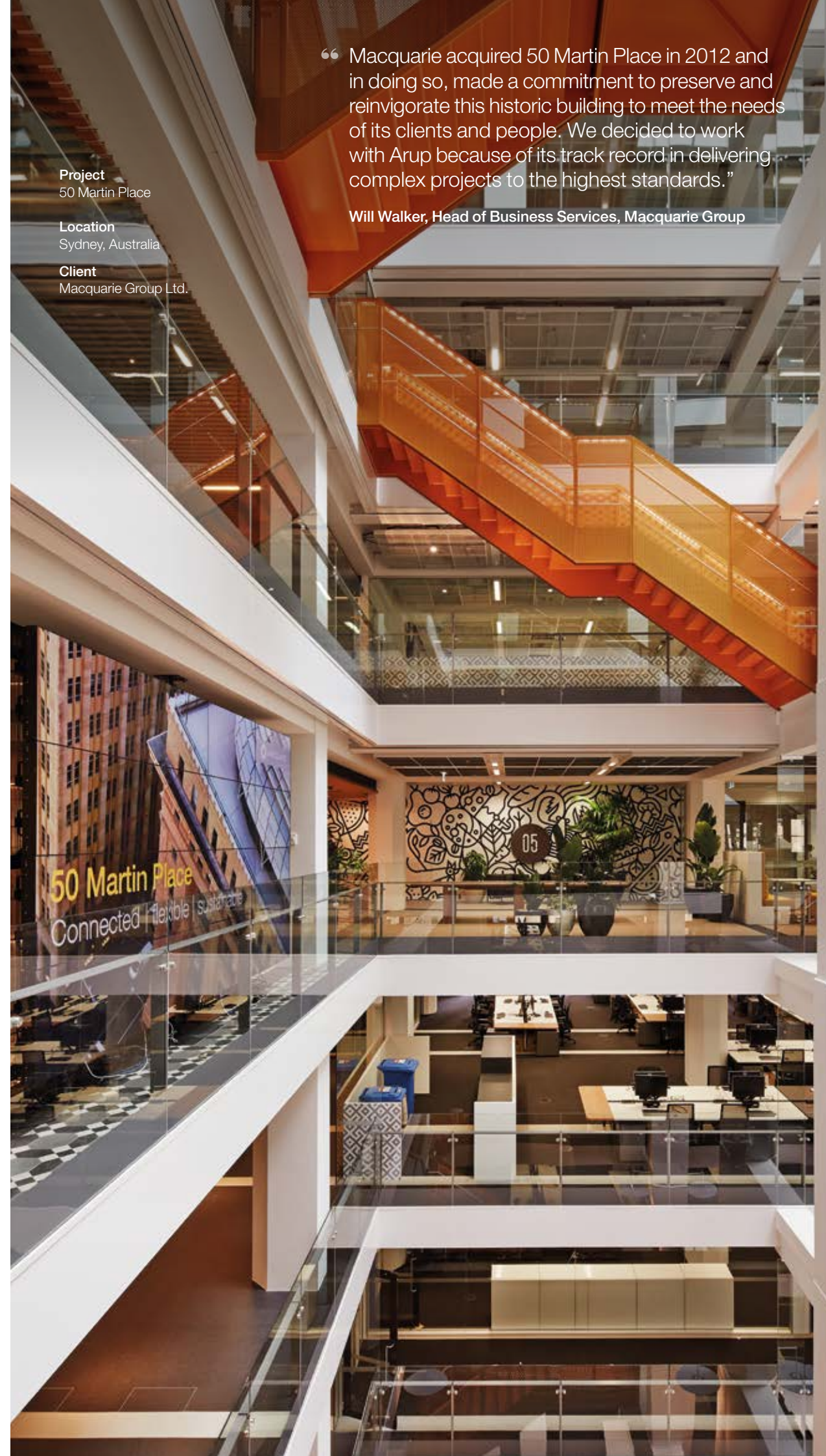
Client
Macquarie Group Ltd.

“ Macquarie acquired 50 Martin Place in 2012 and in doing so, made a commitment to preserve and reinvigorate this historic building to meet the needs of its clients and people. We decided to work with Arup because of its track record in delivering complex projects to the highest standards.”

Will Walker, Head of Business Services, Macquarie Group

38.7%

Percentage of projects over £150k reporting specific sustainability objectives – a 15% increase from the previous year



We're used to making a difference for our clients. Making a real difference for the communities in which we work is equally important. We bring our practical, strategic and inventive skills to whatever challenge we're set, locally or globally.



“Through community participation we developed an appropriate housing solution for local people that's earthquake-resilient, sustainable, durable, and which uses local materials.”

Sebastian Kaminski
Project Manager

Sebastian joined Arup in 2007. He is a structural engineer in our London office.

Our humanitarian values underpin our work for clients and our diverse Community Engagement (CE) activities. By volunteering our time and skills we change communities for the better and show people how our expertise and enthusiasm can affect change in a direct way.

We donate some money directly to charity, but believe we can achieve the greatest impact by donating our time and skills. Engineering solutions can have long-lasting benefits, so we actively encourage and support our people to volunteer. Our founder Sir Ove Arup spoke about “a wish to do socially useful work, and to join hands with others fighting for the same values”. Through Arup's CE programme, our people continue to honour his legacy by fulfilling both these ambitions.

We engage with charitable causes that deliver positive impacts across four principal strands of activity: local engagement in areas where we have offices; projects that support economic, environmental and social development; disaster response; and education. We support these across the world through the Ove Arup Foundation.

A positive impact

This year we've celebrated ten years of the Arup Development Fund, which was introduced in our 60th anniversary year. The fund has helped us in our mission to 'shape a better world' by supporting projects that are inclusive and have a positive impact. In the past 12 months alone, we've worked on 153 community engagement projects and many smaller ones across 39 countries. One in ten of our staff globally contributed, volunteering more than 6,500 hours of their time.

Empowering young people and helping children

Our Brisbane office has developed a work experience programme with *The Smith Family*, a children's charity helping disadvantaged Australian children to get the most out of their education. Called *Work Inspirations*, the programme is aimed at students from local Smith Family schools who have an interest in STEM studies (Science, Technology, Engineering, Maths). This programme has been very successful in the region and has been extended to Perth, Sydney and Melbourne.

In London, we're empowering disabled young people by supporting *Elfrida Rathbone Camden's Young People for Inclusion* project. This involves young people helping organisations and businesses improve their provision for disabled people and our team is equipping members with the skills to become a self-sustaining social enterprise.

Volunteers from our Shanghai office visited *Shuifu Sowers Children's Home* in Yunnan province to provide fun summer activities and explore possibilities for expanding the home. We've done extensive fundraising and helped with Christmas decorating at Ireland's only children's hospice, *Laura Lynn*. We also advised on building an extension to allow parents to sleep close to their children in the hospice.

Engineering a better future

Two Arup engineers travelled to Nepal to help improve seismic resilience following the devastating 7.8-magnitude earthquake of April 2015. Hayley Gryc, from London, and Timurhan Timur, from Turkey, worked with *NSET*, a local NGO, to enhance its structural engineering team's capabilities.

They focused on retrofitting options for reinforced concrete buildings appropriate to the local context.

In Australia, we've provided engineering assistance for a new water intake structure in Queensland's Stewart River as part of *Engineering Without Borders' EWB Connect* scheme. Around 50 Lama Lama people will benefit from improved supply as a result of the project, which involved working in conjunction with Yintjingga Aboriginal Corporation. In Germany, we've supported housing provider *Berlinovo* in developing a prototype modular housing unit to help provide accommodation for the high number of refugees coming into the country.

Promoting hygiene and health

We're embedding environmental sustainability considerations in the planning of Water, Sanitation and Hygiene (WASH) programmes run by *FRANK Water* in India. Over 300,000 people in marginalised communities have already benefited from WASH projects and the charity asked us to help ensure their solutions are sustainable and resilient to future changes. Our team is developing a methodology with potential to also be used in different geographies or developmental sectors. We've also designed a bridge for *Atiofi Hospital* in the Solomon Islands, which will run across a gully between the main hospital building and a new Tuberculosis Isolation Ward. The next stage is constructing the bridge with local materials.



Working with communities
WaterAid in Nicaragua

Villagers in remote Truhlaya used to hike two hours uphill for potable water but now they can access it whenever they want from a village tank supplied by gravity-based piping. This is one example of the work *WaterAid* does in Nicaragua, with support from our New York office. Working with communities is crucial to *WaterAid's* approach, ensuring local people are trained to use and maintain new systems.

153

Last year we worked on 153 CE projects, valued at over £1,000, in 39 countries

£1.6m

Arup's contribution to CE in 2015/16 (includes over 12,000 hours of pro bono work, expenses and cash donations)

6,500

Staff have contributed over 6,500 hours of unpaid time, and have fundraised over £168,000 for Arup's and their own chosen charities

We were challenged by Sir Ove Arup to do everything “as well as it can be done”. Constantly improving our own environmental performance is an important part of this ethos.



Melbourne office refresh

Melbourne, Australia

Our Melbourne office refresh incorporated a move to Activity Based Working (AWB). Traditional workstation numbers were reduced to allow for additional and alternative workplace settings. This included small secluded one person bays, dual screen quiet zones with no phones or conversations allowed, meeting tables, large drawing tables, and five person collaboration tables with a large screen shared during meetings. Our spaces are now flexible, with different settings and uses for both staff and clients, and we can accommodate more than 320 staff members compared to 270 before the refresh. Additionally, furniture from the previous Spring Street office was recycled and incorporated into the refreshed office setting.

Stand up and be counted

Our 15 key performance indicators (KPIs) allow us to measure our annual progress against targets for everything from paper use to diversity and inclusion training. We review the results firm-wide and across our five regions to understand where we can seek further improvement.

We've achieved a 13% annual reduction in carbon emissions per employee for the second year running. We also reduced yearly paper consumption to 28.5kg for each of our people, well below our target of 34kg.

Sustainable suppliers

Our sustainable procurement plan ensures we select only responsible suppliers. Examples include working with our catering supplier to source and purchase Fairtrade and Rainforest Alliance Certified coffee, tea, sugar and bananas, and ensuring all disposable packaging is biodegradable and/or recyclable.

Responsible to our core

We will always have the greatest beneficial impact by ensuring that sustainability is integral to all the work that we do for our clients. Almost four in ten Arup projects with fees above £150,000 reported specific sustainability objectives this year – a 15% annual increase. We're also taking action globally to advance the seventeen Sustainable Development Goals adopted by all 193 member states of the United Nations in September 2015. These goals, which resonate well with our own enduring values, promote the health, wellbeing and uplifting of all of humanity while maintaining the stability of the natural environment.

Carbon mitigation and reduction

In support of the landmark agreement on carbon reduction made at COP21 in Paris in December 2015 we have reinvigorated our efforts to address carbon emissions arising from our own operations to build a more sustainable business. To this end, we are developing a carbon mitigation and reduction programme to drive improvements in emissions caused by:

1. Employee commuting
2. Office and facility energy use
3. Business travel for internal purposes
4. Business travel for client projects

We recognise that we have varying degrees of influence in each of these areas. We are, for example, developing operational plans to ensure our offices are easily reached by public or other low-carbon transport. New offices are required to meet strict global energy efficiency standards like LEED or BREEAM, and all offices are required to purchase 'green' electricity either through their supplier or via renewable energy certificates. In order to maximise our impact through our projects all staff will have access to sustainability resources, guidance and learning opportunities. We will also provide direct investment for projects that have a measurable impact in reducing carbon emissions.

We aim to lead the way in meeting the global challenge of climate change by setting a good example through our own business practices and by providing the best possible advice to our clients to help them reduce their environmental impact.