

2021 Awards for Excellence – Technological Innovation

The OneConsult 2021 Awards for Excellence Technological Innovation Award winner has been announced as Mace Australia for Digital Command Centre (DCC).

Mace Australia has been recognised as this year's Consult Australia 2021 Technological Innovation Award Winners for Digital Command Centre (DCC). This award recognises firms who have demonstrated outstanding leadership in the innovative application of new or existing technology.

Winner

Mace Australia

Digital Command Centre (DCC)

The Metro Tunnel is a major enhancement to Melbourne's rail network that will integrate with the existing system. The Rail Systems Alliance (RSA) is providing all conventional signalling, high-capacity signalling, train and power control systems, and operational control systems within the Melbourne Metro Tunnel project.

Leveraging Mace's global best practice from the delivery of a digital command centre for one of the world's leading blue-chip technology companies, Mace Australia's team led development of a Project Delivery Framework and Governance, including planning, cost, risk, and quality integration (as well as the physical fit out and software development) for the Melbourne Metro Tunnel project.

Mace brought together a multitude of datasets across the RSA project for Planning and Scheduling, HR, Safety Assurance, Systems Engineering and Project Controls and created a range of interactive dashboards. From early discussions with RSA, we worked towards the common goal of a single cloud database in which all stakeholders have instant access to project documentation and up-to-the-minute models from any device, anywhere, anytime, to help all team members make informed decisions with trusted data.

The RSA command centre comprises 8 LCD borderless screens, infrared touch screen overlay and cruiser interactive interface to connect a comprehensive database of over 80 datasets and thousands of data connectors. The Digital Command Centre feeds into a single touch-interactive command room with state-of-the-art hardware, software, and business intelligence capability. The system is

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scalable and allows seamless integration with other technology such as GIS spatial building information modelling and live site feeds. It enables project meetings to use real-time information and delve into source data during meetings, to enable issues to be rapidly corralled and resolved.

Mace was conscious in its approach to achieve this by integrating and enhancing various existing in-house data sources rather than creating new datasets to serve the system. The delivery of the DCC involved a discovery phase in which Mace liaised with key stakeholders to document the current state of project information storage and sharing. This initial phase reviewed the availability, quality, location, existing systems, and management responsibility for data required to define, manage, monitor and analyse projects, and to identify any potential interdependencies.

A comprehensive gap analysis of project performance, schedule, cost, risk, reporting and integration requirements was undertaken, and Mace resolved gaps by tailoring our standardised process templates to suit the RSA Quality Management Framework or Project Management Framework, saving time and cost. Works involved the development of Minimal Viable Product (MVP) specification for a digital system to sit across all RSA schedules and their supporting information, including cost, risk, and quality, to provide near-real-time analysis, information, and reporting.

The purpose of this system is to ensure all project issues, risks, scope interfaces, timeline interfaces, interface dependencies, inter-department change, impacts, and others are consolidated, integrated and summarised for relevant decision-makers. In short, Mace's DCC is a clear demonstration of the potential to reshape the industry operating norm. From project planning, design to delivery, the technology unlocks unforeseen opportunities, while enabling trust, streamlined data reconciliation, immutability, and transparency.

Consult Australia has also recognised Arup for Science Gallery Melbourne, Digital Bricks, and GHD and Sydney Water for Geospatial Water Planning Tool as Highly Commended 2021 Awards for Excellence in the category of Technological Innovation.

Highly Commended GHD Digital and Sydney Water Geospatial Water Planning Tool

The project team received Highly Commended in the Technological Innovation category in the Consult Australia 2021 Awards for Excellence. This award recognises

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firms who have demonstrated outstanding leadership in the innovative application of new or existing technology.

GHD Digital, the fast-growing digital transformation and technology engine of GHD, has been recognised as Highly Commended for developing an innovative Geospatial Water Planning Tool (GWPT) with Sydney Water to create a more sustainable future for its customers. The tool automates scenario planning, integrates product thinking, and overlays selected data onto maps.

GHD Digital's GWPT solution was developed in close collaboration with Sydney Water and partner organisations in response to Sydney Water's desire to automate its modelling for future growth scenarios, which would assist in the longer-term investment and planning of water usage in the Greater Sydney area. It also needed to implement a set of integrated GIS (geographic information system) platforms, that combined data with rules.

The GWPT tool was developed through a collaborative process combining the skillsets of water utility planners, FME (Feature Manipulation Engine) subject matter experts, GIS / spatial analysts, Information Technology specialists, business, and data analysts.

"The custom built GWPT provides Sydney Water with a 'one-stop shop' for spatial distribution of growth forecasts, system generation, infrastructure sizing and high-level cost estimation," said Andrew Foddy, Geographic Information System Consultant – GHD Digital. "The power of data and spatial transformations has revolutionised Sydney Water's modelling for growth scenarios across the Greater Sydney region."

Using a specialised form of ETL (Extract, Transform, Load) software, the tool extracts data from Sydney Water's wastewater, potable water, recycled water and stormwater utilities, converts the data into a usable format and loads it into a single 'data warehouse' for reporting and analysis. It provides the user with models of different growth scenarios within 10 minutes (accelerating a planning process that normally takes two weeks to do manually) through an intuitive, interactive interface.

Suhanti Thirunavukarasu, Senior Planner, System & Asset Planning at Sydney Water commented, "Congratulations to the GHD Digital team, they worked with a great deal of creativity and agility; [and] they were very open and able to respond to whatever challenge we put in front of them and find a way through. It was a joy to work closely with the team and I was often surprised at how quickly we'd see aspects of the tool taking form, going from inception to a working model in the FME."

Through the tool, Sydney Water has already achieved substantial time and cost savings and benefited from the power of a more collaborative approach to planning liveable and sustainable communities. “We have the capability to be innovative and build new ways of operating for our clients and being recognised in Consult Australia’s awards for the success of this tool is really exciting. It really comes down to a collaborative effort, congratulations to everyone who was involved in developing this innovation,” adds Andrew Foddy

Highly Commended

Arup

Science Gallery Melbourne, Digital Bricks

The Digital Bricks at Science Gallery Melbourne’s interactive digital wall, the world’s largest pixel display, has been recognised as Highly Commended in the Consult Australia Awards for Excellence Technological Innovation category.

The Gallery’s high-impact external façade revolutionises the expectations of a building exterior. The traditional brick wall is interspersed with 226 polished glass bricks – each in front of a small, high-brightness and high-resolution LED screen displaying a curated image. This mosaic of ‘digital bricks’ is placed strategically to ensure optimal visibility, capturing and engaging visitors and passers-by.

Developing the award-winning media façade took years of research and development by Arup’s lighting and audio-visual team, The University of Melbourne’s School of Computing and Information Systems, the Science Gallery and Melbourne Connect, as well as architects Woods Bagot.

“The Digital Bricks, a world-first and award-winning architecturally integrated media façade provides Science Gallery Melbourne and its partners with opportunities to strengthen their pioneering role in terms of architectural design, urban technology, human-computer interaction and public engagement” - Dr Niels Wouters, former Head of Research, Science Gallery Melbourne. With the world’s highest resolution interactive video screen at 208 physical megapixels, the Digital Bricks are without precedent.

Interdisciplinary collaboration between construction, electronics engineering, graphic design, and lighting design allowed this unique and innovative technology, designed specifically for the Gallery, to come alive. “The project shows that by using smart technologies, architects and clients now have an alternative design outcome than just a digital screen, and this will lead to better and more ambitious installations in the future. Bringing these specialists together to create something completely new

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was no small task, but the outcome speaks for itself, and will for years to come.” –
Tim Hunt, Associate, Lighting Designer, Arup

Congratulations to our Award Winner Mace Australia, and Highly Commended winners GHD Digital and Sydney Water, and Arup.

Consult Australia is the industry association representing consulting businesses in design, advisory and engineering, an industry comprised of over 58,600 businesses across Australia. This includes some of Australia’s top 500 companies and many small businesses (97%). Our members provide solutions for individual consumers through to major companies in the private sector and across all tiers of government. Our industry directly employs over 285,000 people in architectural, engineering, and technical services, and many more in advisory and business support. It is also a job creator for the Australian economy, the services we provide unlock many more jobs across the construction industry and the broader community.

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NOTES TO EDITOR

1. About Consult Australia

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2. About Nicola Grayson

Nicola Grayson is the Chief Executive of Consult Australia. Nicola is responsible for implementing the organisation's strategy, building ongoing external relationships, and for leading Consult Australia's advocacy and government relations agenda on behalf of members.

Nicola is a member of and former chair of the International Federation of Consulting Engineers (FIDIC) Risk, Liability, and Quality Committee. In Australia she chairs the Australian Sustainable Built Environment Council's Urban Resilience Task Group and sits on numerous government forums representing the Consult Australia membership. Nicola is the Convenor for Consult Australia's Champions of Change leadership group for gender diversity and inclusion, a member of the Champions of Change Coalition.

Nicola is a government relations specialist, and has represented industry associations in the United Kingdom, the European Union, and Australia. Nicola has worked across a range of sectors including general insurance, consumer finance, alcohol, and education, in addition to consulting engineering. She has an Honours Degree in Law from the United Kingdom and is a member of the Australia Institute of Company Directors.

3. For interview

For more information and to arrange an interview, please contact Nicola Grayson directly on +61499 878 839 or email nicola@consultaaustralia.com.au.