

## INDIGENOUS AUSTRALIAN ENGINEERING SCHOOL SYDNEY 2020

The University of Sydney has hosted the Indigenous Australian Engineering School (IAES) for the last 10 years. This year, 25 Aboriginal and Torres Strait Islander students from years 10, 11 and 12 attended the one-week program at the University's Faculty of Engineering. Here are the highlights of their week.

### MONDAY 13 JANUARY

Professor Lisa Jackson-Pulver AM, Associate Dean (Indigenous Strategy and Services) gave the Welcome to Country and Keiran Passmore, Executive Director of Engineering, welcomed the students to the University of Sydney. Following an Introduction to Engineering and a group Project Management challenge, the students travelled to the Rozelle Interchange of WestConnex.

#### Visiting WestConnex with ARCADIS, WSP AND JOHN HOLLAND

Arcadis/WSP JV Design Manager Lynette Curry briefed the students on the project's design. People, Environment and Stakeholder Director John Crane gave them an overview of the equipment and operations. Senior Technical Director Syd Gamble coordinated the site visit. EAA is grateful for the support of many of the partners involved in WestConnex, including Transport for NSW, Arcadis, WSP, John Holland and NDY.



Introduction to Civil Engineering at the WestConnex Rozelle Interchange.



Students gather to thank Lynette, John and Syd at the end of the site visit.

### TUESDAY 14 JANUARY

#### At the Sydney Opera House with HONEYWELL

Students learnt about Building Management Systems Engineering at the Sydney Opera House. Honeywell Engineers James Carrapetta and Andrew Bottomley explained the efficiency and cost-saving changes that Honeywell have made through the Sydney Opera House upgrade.



Students accompanied by the EAA Houseparents arrive at the Sydney Opera House.



Honeywell employees explain air temperature and humidity control systems.



Andrew Bottomley helps Team One with the quiz challenge at Honeywell.



# TUESDAY 14 JANUARY

## Cultural time with THE TRIBAL WARRIOR

Uncle Terry Olsen pointed out and named significant Indigenous Australian cultural sites on and around the Sydney Harbour. The students enjoyed using native grasses for weaving, seeing the rock fish trap and joining in the dancing on Clarke Island.



Students watched Uncle Terry Olsen and Lisa Lawrence dance before joining in.



Aunty Karleen Green teaching the students.

# WEDNESDAY 15 JANUARY

## MINERALS COUNCIL OF AUSTRALIA PRESENTATION

The students watched a video made by the Minerals Council of Australia. The video shows 30 essential items we use in modern life made possible by Australia's world-class mining industry.

## BRIDGECLIMB

BridgeClimb was a major highlight for the students. They learnt about the engineering aspects of the Sydney Harbour Bridge. They were also able to compare health and safety today with that of the 1930s when the bridge was built.



Fraser, Jayde, Nathaniel and Rhyley with Houseparent Jack Naylor on the BridgeClimb.

## Martin Place Station site visit with ARUP AND JOHN HOLLAND

Students had a detailed briefing on the Martin Place Station project from Senior Project Engineers including Liz Matthews (Senior Project Manager South Tower Metro Martin Place at Macquarie Group). Armed with new insight into the decisions that designers make in a high-density urban project, the students ventured onsite to see the construction. David Harding (Australasia Transport Developments Leader at Arup and secretary of EAA) and Will Frelander (Senior Project Engineer and Project Manager – Mined Tunnels, John Holland CPB Ghella JV – Sydney Metro City Project) and Jeremy Glasgow (Construction Manager - Mined Tunnels, John Holland CPB Ghella JV - Sydney Metro City Project) accompanied the students on the tour. Mark Fyson, Arup Associate Principal, and Structural Engineering Lead – Metro Martin Place Project, did a fascinating “how it stands up” presentation for the students.



Project Engineers gave the students an excellent overview of the project.



Project Engineers answer the students' questions during the tour of the Martin Place Station project.



# WEDNESDAY 15 JANUARY

## COMMUNITIES SESSION

The students listened to inspiring and informative talks from Engineers about projects that they have been involved in and that have benefitted communities.

Sabrina Kost, Senior Associate Engineer Tunnels at SMEC, spoke to the students about designing the tunnels and marine risers for the Adelaide Desalination plant. Sabrina began her career as a Structural Engineer in Switzerland and told the students how enjoyable and very rewarding it is to be both a busy Engineer and a parent to her children.

Michael Brand, Head of Technical at Veolia, also spoke to the students about desalination but from a different Engineering perspective. He explained to the students how desalination is the process of extracting clean water out of salty water and thus helps to drought-proof cities.

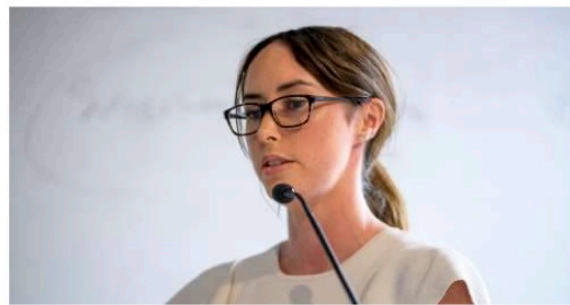


Michael Brand from Veolia.

Sophie Mireylees, Civil Designer at Lyndsay Dynan Consulting Engineers, spoke to the students about her technical design work with 2D and 3D CAD modelling using Civil 3D, Civil Site Design and 12D programs for earthworks, roads and drainage.

Janinda Perera is a Senior Project Officer for the Smart Innovation Centre at Transport for NSW. Janinda has a background in Electrical Engineering, IT Network Design and Cyber Security. He spoke to the students about the Tangible Trials, which are taking many incremental steps towards fully autonomous vehicles.

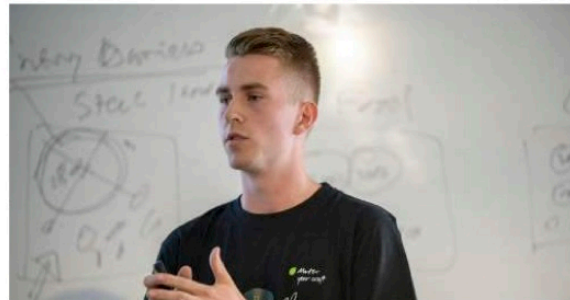
Jack Coppins, Aurecon Engineering Undergraduate, attended the IAES in 2015. Jack spoke about the amazing industry experience he has gained while studying and working with Aurecon. He has worked with the Tunnel Ventilation team, using Computational Fluid Dynamics to analyse the tunnel.



Sophie Mireylees from Lyndsay Dynan Consulting Engineers.



Janinda Perera from the Transport for NSW Smart Innovation Centre.



Jack Coppins (IAES 2015) Aurecon Intern.

## NETWORKING FUNCTION

The speakers from the Communities Session stayed on for the Networking Function and were joined by Engineers from many of EAA's Sponsors. Set up in a careers-fair style, this event allowed students to network with industry representatives, learn about work experience opportunities, receive valuable advice as well as gather Sponsors' contact details.



Ben Lowe and Janinda Perera from Transport for NSW with IAES students.



Nial O'Brien and Jack Coppins, both from Aurecon, meet with students Trenyce Pearce and Chloe Montague.



# WEDNESDAY 15 JANUARY

## NETWORKING FUNCTION (CONT)



Sabrina Kost from SMEC meeting with students Eden Strickland and Sibelle Altiparmak.



Will Berkeley and Lindsay Collier, both from Laing O'Rourke meet with student Brody Mitchell.



Tara Al-Hilali and Alex Males from BOC meet with students Jayde French and Nathaniel Keeler.



Michael Brand and Jack O'Dwyer, both from Veolia, chat with students Bella Newell, Sophie O'Mealey and Caleb Rennie.



Arup Engineers meet with students Raegan Kelly and Michaela Oslizlok.



Peter Kalis and Jim Galanos, both from Corrosion Control Engineers chat with student Haydon Munroe.



The Lyndsay Dynan team networking with students Nathaniel Keeler and James Whalan.



The Arcadis team with students Trenyce Pearce and Chloe Montague.



# WEDNESDAY 15 JANUARY

## NETWORKING FUNCTION (CONT)



Sofia McLeod and Sam Schneider, both from Google, meeting with students Noah Matthews and Jayde French.



Riley Toi from Honeywell chats with students Trenyce Pearce and Chloe Montague.



WSP Engineer Jacob Hyland (IAES 2008, second from left) introduces his colleagues to students Sibelle and Eden.



Networking in the Abercrombie Business School at The University of Sydney.

# THURSDAY 16 JANUARY

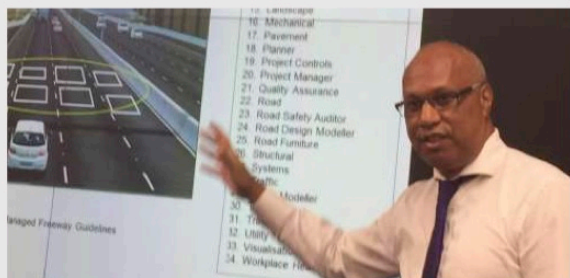
## TRANSPORT FOR NSW TRAFFIC MANAGEMENT CENTRE

Students watched how lanes are opened and closed in real-time. Manager Motorways Alan Cohen explained that roadworks require occupancy licenses and that TfNSW issues approximately 60,000 each year. Festival events like Vivid and natural disasters such as the bushfires present extra challenges to the Traffic Managers.

Mark Henaway, ITS and Traffic Control Systems at Aurecon, spoke to the students about working on the M4 Smart Motorway System. He also gave the students a list of many different roles for Engineers.



Director Real Time Communications Marco Spadaccini introduces the students to the planning and coordination of Traffic Management.



Mark Henaway talking about the Intelligent Transport System trial on the M4 Sydney.



VISIT TO CRASHLAB: Students had fun while learning valuable lessons about the testing of cars, helmets and all aspects of safety carried out by experts at Crashlab.



# THURSDAY 16 JANUARY

## VICE-REGAL RECEPTION

Our new EAA Patron, His Excellency General the Honourable David Hurley AC DSC (Retd), Governor-General of the Commonwealth of Australia and Mrs Hurley gave the students, University academics and EAA Sponsor representatives a very warm welcome to Admiralty House.

His Excellency presented Major Partners Aurecon, Honeywell and SMEC with a work of art from Wiradjuri Artist Michael Lyons as a Gift of Appreciation from EAA. For a number of years, EAA has acknowledged and thanked its long-term Partners this way.

EAA Chairman Greg Steele joined the EAA Patron to present the artworks.

The speakers at the Reception included Professor Willy Zwaenepoel, Dean of Engineering and IT at the University of Sydney, and Mr Greg Steele, EAA Chairman, and student Eden Strickland.



Gift of Appreciation presented to Adrian Surija and Andrew Bottomley from Honeywell.



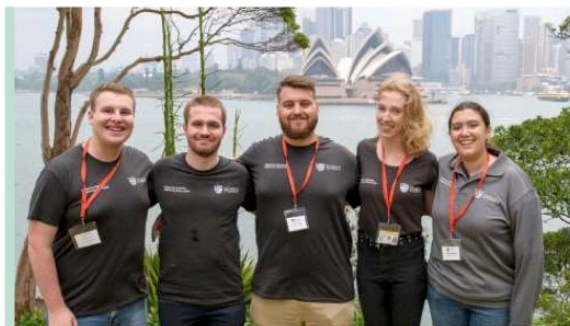
Gift of Appreciation presented to Nial O'Brien and Mark Henaway from Aurecon.



Gift of Appreciation presented to Nancy Oneyeka and Grace Hyne from SMEC.



The Governor-General and Mrs Hurley with students and guests at Admiralty House.



Houseparents who mentored and shepherded the students during the IAES week.

*Left to right*

Jack Naylor, Mechanical (Space) Engineering/Physics student at Sydney University

Aiden Train (IAES Alumnus) Graduate Civil Engineer

Joshua McLeod (IAES Alumnus) Electrical Engineering student at Wollongong University

Esher Tyson Bachelor of Engineering Honours (Biomedical) and a Bachelor of Medical Science

Allison Monaghan, Graduate Civil Engineer.



Ben Lowe from Transport for NSW and students at the Vice-Regal reception.



# FRIDAY 17 JANUARY

## 'Think Like a Designer' Workshop at ARUP

After checking the status of students' family situations amid the bushfire crisis, Arup conducted a 'Think Like a Designer' workshop. They explained the design process by brainstorming ideas for a Bushfire Resilient Community Centre. Students worked with the Arup Engineers to consider design goals including safety, social and cultural, environmental sustainability, future-proofing and cost. Students also had to consider design elements that would support the community to rebuild after a disaster.



Students Noah, Nathaniel and Sibelle present their team's design at Arup's 'Think Like a Designer' workshop.



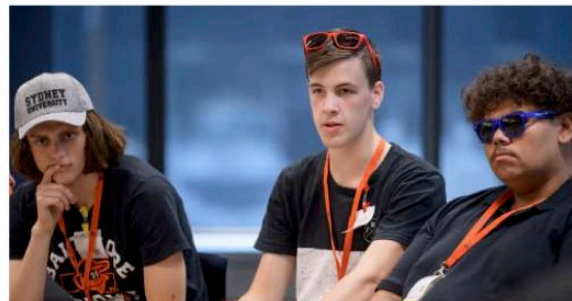
Student Connor Hughes Ticknell's group working with Arup Engineers.

## Software Engineering at GOOGLE

Google team members Dion Loetscher and Renee Kwang introduced the students to Software Engineering and the process of writing and reviewing code. This team has worked on Google maps, Google Drive, Google Blogger and Google Photos.



Google Program Manager Marie Efstathiou and Google Engineers spoke to the students about programming resources they can use to get started with coding.



The students enjoyed the sample Google sunglasses and asked many questions about Software Engineering.

## GRADUATION DINNER

The speakers at this year's Graduation Dinner included Professor Petr Matous, EAA Chairman Greg Steele and Laura Berry, Supply Nation CEO and Former EAA Director, who gave the Keynote address. After receiving their Graduation Certificates, the students danced to a Playlist of their favourite music.



EAA Chairman Greg Steele congratulated the students and thanked EAA's Partners. He welcomed new Partner BOC Limited, a Member of the Linde Group and NDY to our Network.



Laura Berry CEO Supply Nation and Former EAA Director inspired the graduating students to nurture the network they have created this week as well as their thirst for further learning.



# FRIDAY 17 JANUARY

## GRADUATION DINNER (CONT)



Professor Petr Matous, former Associate Dean (Indigenous Strategy and Services) at Sydney University addresses the students and guests.



Students celebrated new friendships as they looked forward to new incentives and career dreams.

## PARTNER 'THANK YOU' RECEPTION IN NOVEMBER 2019

EAA acknowledges and thanks Veolia for hosting our Partner 'Thank You' Reception in November 2019. We also welcomed a new Partner, Corrosion Control Engineering (CCE) at this event.



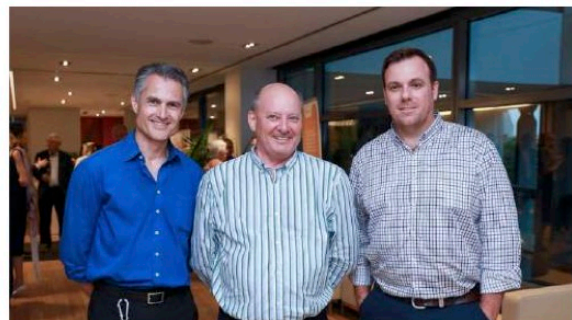
Richard Mueller, Technical and Performance Director at Veolia Australia and New Zealand, welcomed guests to the reception.



Grant Maher attended the first IAES in 1998. He spoke of his journey from IAES to Façade Lead Engineer with Aecom and his role as Chairman of the Indigenous Engineers Group.



Jim Galanos (CCE), Natasha Winter (CCE) Valeria Mendez and Giwangallani Mendez (IAES 2019) with John Khalis (CCE).



Ron Johann (My Business Hosting), Kevin Hopkins EAA Director (WA) and Peter Hyndman (Arcadis) meet at the Thank You reception.

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