



# International Association of Hydrogeologists

New Zealand National Chapter

Auckland Branch

*IAH Auckland: October 2022 Technical Meeting*

## Central Interceptor-How does groundwater modelling and instrumentation stack up in the real world

Wednesday, 12<sup>th</sup> October 2022, 5:30 pm for 6:00 pm start  
Training Room 1, Beca, 21 Pitt St, Auckland. Enter through the main entrance, at the ground floor.  
Parking: please email Hangjian at [Hangjian.Zhao@beca.com](mailto:Hangjian.Zhao@beca.com) to book parking  
Online option: MS Teams Meeting ID: 431 643 698 877 Passcode: nzBakX  
Call in (audio only) option: tel:+6442802674,,835963696#, Conference ID: 835 963 696#

The Central Interceptor team will be presenting on the excavation of the Māngere Pumping Station (MPS) shaft and launch of the TBM within a confinement box at the same location, but in a hydrogeologically controlled environment, as part of constructing Watercare's Central Interceptor. MPS consists of two adjacent and intersecting circular shafts with an approximate depth of 40m. Our presentation will focus on groundwater modelling in a challenging coastal environment where excavation and tunnelling in the highly permeable Kaawa Formation (and underlying Parnell Grit) increased the potential for large groundwater inflows and drawdown, and the associated risk of environmental effects.



This presentation will also highlight the benefit of having a well-established instrumentation and monitoring network in preparation for the TBM launch to verify the effectiveness of using diaphragm walls and pumping wells as groundwater control measures. Our talk will cover the local geology, groundwater modelling and monitoring and, how they are complementary to each other to better understand the local conditions and therefore to better respond to the construction risks.

### **Hangjian Zhao - Senior Hydrogeologist, Beca Limited**



After completing graduate study in hydrogeology at University of Wisconsin-Madison, Hangjian started his career as a hydrogeologist in NZ in 2016. With a background in groundwater modelling and water resources management, Hangjian has undertaken a range of groundwater modelling and assessment to provide technical inputs to inform the management of groundwater resources. His current technical focus is on providing hydrogeological support to infrastructure construction projects across NZ.



### **Peter Yee - Geotechnical and Instrumentation Manager, Ghella Abergeldie Joint Venture**

Peter started his career in 2010, as a Geologist in the underground Coal mines of Central Queensland and completed a Master of Mining Engineering in Mine Geomechanics in 2013 at the University of New South Wales. Peter has worked as a Geotechnical Engineer for a number of underground mines, specialising in underground support systems, pillar design and gained significant experience becoming a Registered Professional Engineer of Queensland (RPEQ) in 2019. He briefly worked in New Zealand on the detailed design for the Huntly Bypass in 2015 and returned to Australia where he worked for Anglo American until 2020. Peter is currently the Geotechnical and Instrumentation and Monitoring Manager for the Central Interceptor.