

# Final Year Projects Competition 2017

## AGS (HK) Technical Competition

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### I. Acknowledgement

I attended the Final Year Projects Competition on 24th May 2017, organised by the Association of Geotechnical and Geoenvironmental Specialists (Hong Kong). As one of the 8 contestants nominated by PolyU, HKUST and HKU, I was honoured to win the first prize of this competition, titled as Winner with a \$5000 cheque award.

I appreciated a lot for the supervision and assistance of Dr. Andy YF Leung. Without his sincere and patient help, my FYP cannot be completed with a high-quality results - an optimisation tool for tunnel design. Besides, I would also like to express my sincere gratitude to AGS for providing me with a platform to showcase my research product. I sincerely hope that this design tool can be further investigate and applied to engineer design in the near future.

### II. Project Review

Totally 8 nominated contestants from three universities gave presentation about their final year geotechnical related project. There are some points of their projects should be addressed.

- The innovation method of project using 3D printer for Crib-block retaining walls design.
- The large sample size of project for landslide in Zhenxiang.
- Experiment method using high-pressure to investigate the artificial rock in laboratory.

### III. Award Reflection

As for my own FYP, the main lightspot is the optimisation tool for tunnel design along multiple buildings.

- Rational design of tunnel alignment considering **building response**: building structure stiffness is incorporate into the analysis.
- Introduction of **weight factor** that facilitate improved risk management: distinguish different building sensitivity.
- Balanced **multi-criteria** tunnel construction evaluation: using Pareto frontier concept and Differential Evolution algorithm to find all optimal tunnel alignment.
- **Fast evaluation** incorporating multiple buildings: efficient compare to commercial finite element modelling software. (Analysing interaction of tunnel and 15 buildings would takes even several weeks, however our programme only take hours.)

Thursday, 25 May 2017

The competition does not only focus on quality of presentation skills, but also a good presentation skills. Apart from the above mentioned high quality project content, I also paid attention several details in order to enhance the presentation effect, and to create a closer speaker-audience. 1. Each judges received one copy of my report abstract with printed presentation notes bound together. It would improve the audience understanding of the project a lot, as speaker may speak too fast or eliminate some items due to limited time. With this method, audience can easily refer to previous slides no matter for following presentation or Q&A session. 2. Some additional information, graphs and notes were added after the end of PPT, which can help you explain you point in detail when answering questions raised by judges. 3. A close interaction with audience: using a presenter; trying not stand just in front of the computer; using body language and increasing eye contact with audience.

All in all, thank every judges and audience.