

Form B-2  
(FY2022)  
Must be typed

Date (日付)  
2022/11/14 (Date/Month/Year: 日/月/年)

**Activity Report -Science Dialogue Program-**  
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): YEOW, Trevor Zhiqing (ID No. P21785)

- Name and title of the lecture assistant (講義補助者の職・氏名)  
N/A

- Participating school (学校名): Senior High School at Komaba, University of Tsukuba

- Date (実施日時): 2022/11/12 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):  
Is Your Building Safe After An Earthquake?

- Lecture format (講義形式):  
◆  Onsite ・  Online (Please choose one.) ( 対面 ・  オンライン (どちらか選択ください。))  
◆ Lecture time (講義時間) 90min (分), Q&A time (質疑応答時間) 20min (分)  
◆ Lecture style (ex.: used projector, conducted experiments)  
(講義方法 (例: プロジェクター使用による講義、実験・実習の有無など))  
Projector, small-scale demonstrations (using blu-tack and straws)

- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.  
As my research topic is quite advanced, I decided to focus more on emphasizing the importance of earthquake engineering and my research and introducing some basic concepts, rather than on specific scientific/mathematical details. I had split my lecture into five parts:

1. "About myself and New Zealand": I introduced my background, interesting facts about New Zealand, and the 2010-11 Canterbury Earthquakes. I then linked the latter to my motivation to do research into earthquake engineering [~15 mins].
2. "Earthquakes and its effect": I explained the mechanism of earthquakes, and showed examples of its effects. I discussed the important role that structural engineers play to help reduce such effects [~20 mins].
3. "Basics of building design": I summarized key considerations used by structural engineers to design buildings, performed small-scale demonstrations of fundamental concepts, and showed videos of experimental tests performed by myself or at the E-Defense facility in Hyogo, Japan (with permission from National Research Institute for Earth Science and Disaster Resilience). I introduced some new building technologies, and explained basic

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concepts on designing buildings [~25 mins].

4. "Structural health monitoring": I discussed limitations with the current state of practice for inspecting buildings, and the concept and importance behind structural health monitoring. I briefly discussed methods to validate such concepts, examples of application in practice, and how it links to my research [~15 mins].
5. "Earthquake preparedness": I showed experimental and recorded video footage showing potential threats to human life during earthquakes (e.g., movement of furniture, failure of non-structural elements, external threats). I then discussed methods to reduce the risk of such injuries in the future, and provided links to government sources on preparing for earthquakes. [~15 mins].
6. Questions and answers [~20 mins].

◆Other noteworthy information (その他特筆すべき事項):

I had prepared a worksheet for students to work through during the lecture and to keep. I had also prepared a small demonstration using straws and blu-tack (clay is a viable alternative) to show how building properties affect the dynamic properties of the building.

- Impressions and comments from the lecture assistant (講義補助者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。):