

Assessment group presentation 1: instructions

This is a group presentation, in which we assess your understanding of key sustainability strategies at the cement / concrete / structural scale; and, how they can be applied to a specific concrete product and construction application. You are expected to search in the literature to present information that goes beyond what is included in the lectures.

The concrete product, construction application and location assigned to each group are:

- **Group #1** – Concrete blocks in a house (Accra, Ghana)
- **Group #2** – Precast concrete in a tunnel lining (Istanbul, Turkey)
- **Group #3** – UHPFRC concrete in a bridge deck (Montreux, Switzerland)
- **Group #4** – In-situ reinforced concrete in a multi-story building (Bangkok, Thailand)

Objectives

- Explain the performance requirements for your concrete product and construction application.
- Describe the typical / 'business as usual' concrete products used for this application
- Suggest which sustainability strategies (at the cement / concrete / structural scale) are most relevant to your application (and explain how/why)

Competencies to be assessed

- Search for technical information specific for different concrete products and construction applications.
- Understand and explain the principles of key sustainability strategies at the cement / concrete / structural scale.
- Apply knowledge of key sustainability strategies to a specific concrete product and construction applications.

Presentation outline

- The general **outline/format** for your presentation should be:

1. Description of concrete product, application and performance requirements

- a. Describe the construction application
- b. Describe the concrete product and its function within the construction application
- c. Describe the (likely) performance requirements (i.e. mechanical, durability) of the concrete product within the construction application (considering exposure environments, climactic conditions)
- d. Describe the typical composition and characteristics of the concrete product used for this construction application

2. Application of key sustainability strategies

- a. Explain/summarise the principles of key sustainability strategies at the cement scale
- b. Suggest which cement scale strategy is most relevant to your scenario's concrete product and construction application. Explain how/why, and give an example.
- c. Explain/summarise the principles of key sustainability strategies at the concrete scale
- d. Suggest which concrete scale strategy is most relevant to your scenario's concrete product and construction application. Explain how/why, and give an example.
- e. Explain/summarise the principles of key sustainability strategies at the structural scale
- f. Suggest which structural scale strategy is most relevant to your scenario's concrete product and construction application. Explain how/why, and give an example.

Instructions

- **Time limit** = 15 minutes maximum. There will then be 5 minutes for questions.
- The presentation time should be shared approximately equally between the group members. (This should not include the general introduction and thank you for listening slides)

- We expect some **basic 'good habits'** in your presentation – these are:
 - Include a title slide that states all the members of your group
 - Use animations/transitions sparingly
 - Include slide numbers
 - Ensure that any text on your slides is visible from the back of the lecture theatre (a general rule is minimum font size of 12)
 - We encourage you to use figures and diagrams to help explain your points. These can be from articles in literature, or you can make your own diagrams too.
 - Include appropriate references for any content included in the presentation that is not your own. This includes figures, images and quotes.
 - Only cite research articles, or textbooks (unless there is a special reason).
 - Do not cite the lecture slides (or slides from previous lectures/courses) – find your own sources of information to cite.

- We recommend you use the EPFL PowerPoint template, however this is not mandatory.
- Before the presentation, please gather all the presentations on a single laptop (with either a USB-C or HDMI connection) – this really helps to save time, to avoid switching between laptops.