

Tools for Engineering Design 2
New Build Project
DTU Simplified Edition

The University of Edinburgh
School of Engineering

Your design team has been engaged by the Kwahu South District Assembly in Ghana, Africa. The District Assembly intends applying for government funding and international grant aid to develop education in this underdeveloped area. They have asked you to develop a range of **three strategies for education infrastructure** that might be followed in the area, the timescales over which they would be developed, and their relative costs.

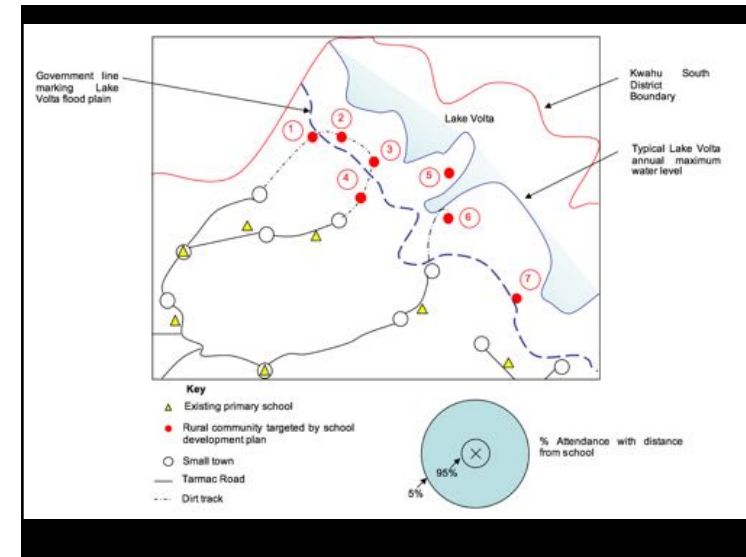
You will present the three education strategies on three sheets of paper. These drawings will be used as the basis of discussion with the local community (which is mostly illiterate).

Deadline for the three design concepts = **10.45**

Kwahu South District
Figure 1 shows the targeted communities (1 - 7), which are situated on the Western arm of Lake Volta. The figure was provided by the Client and it includes an indication of how attendance at a school is affected by distance from the school, based upon their experience of similar communities in Ghana. Table 1 gives information about the current demographic of the target communities 1 - 7.

Assessment
This project will be assessed upon:

- The quality of the education masterplan solutions.
- The clarity of communication.



Now: Swap your designs with another group

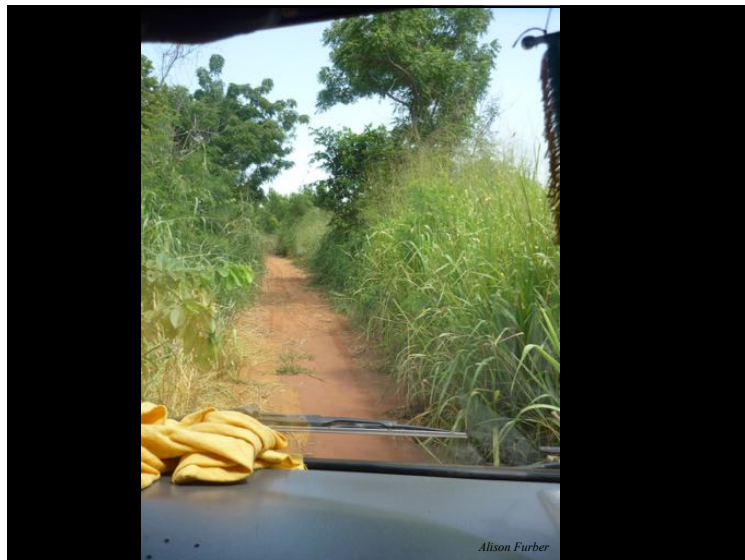
In a moment: We will have a little discussions about the design problem.

You will assess their designs.

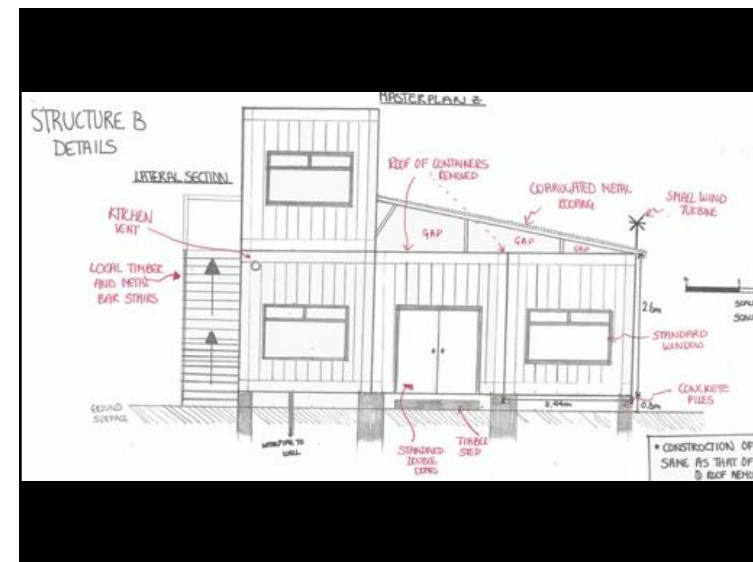
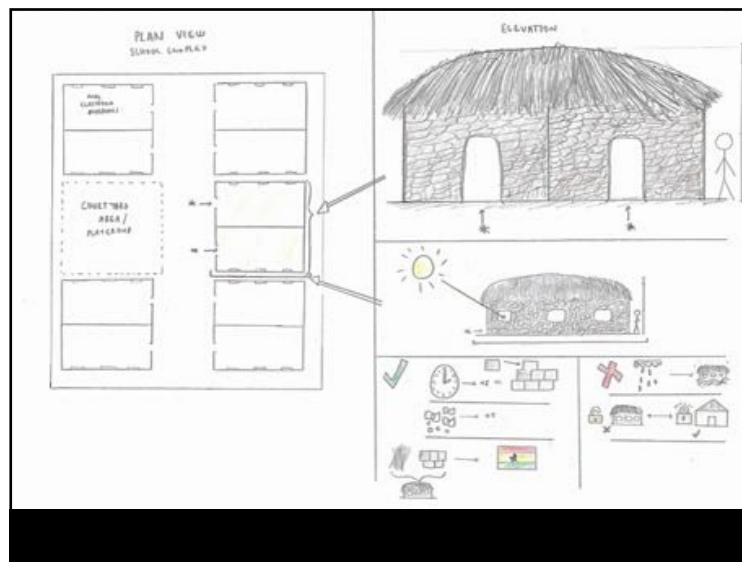
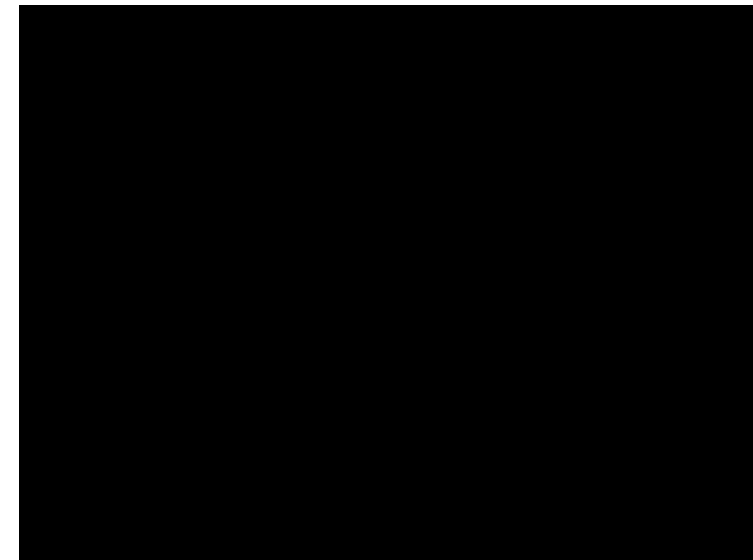
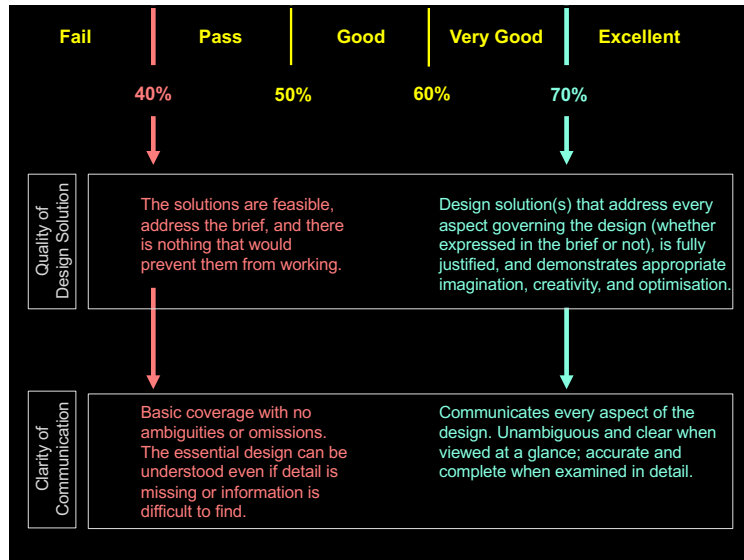
Then: You will have 15 minutes to revise one of the designs that you have been given.

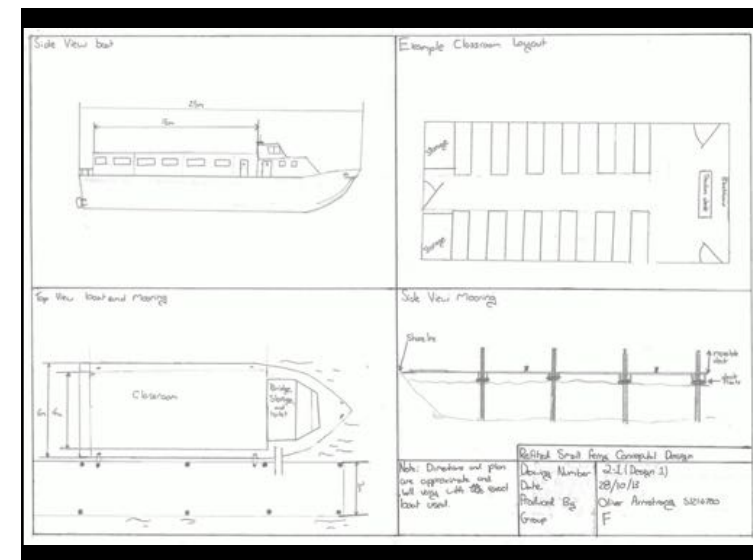
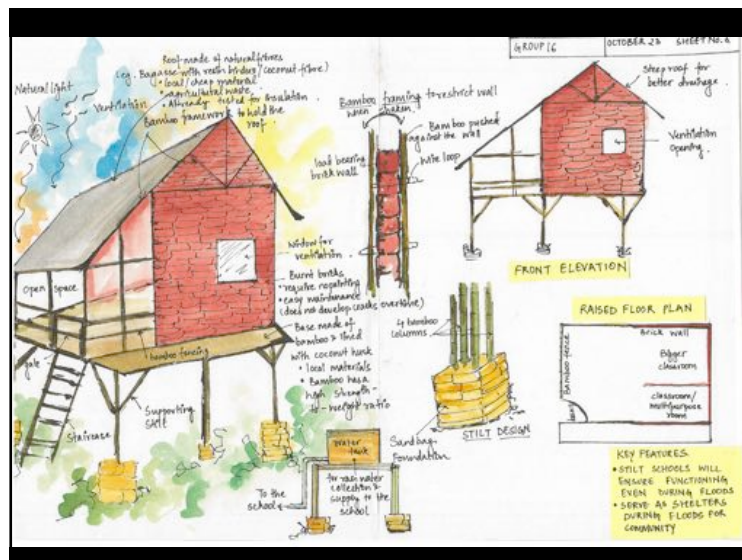
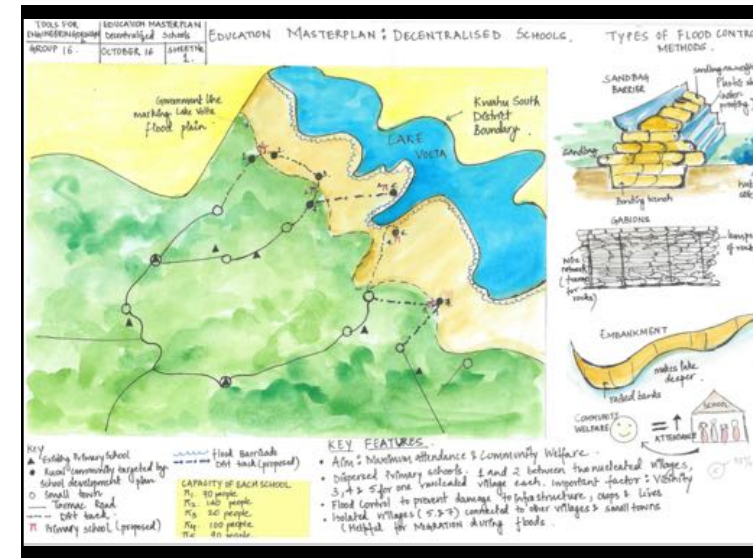
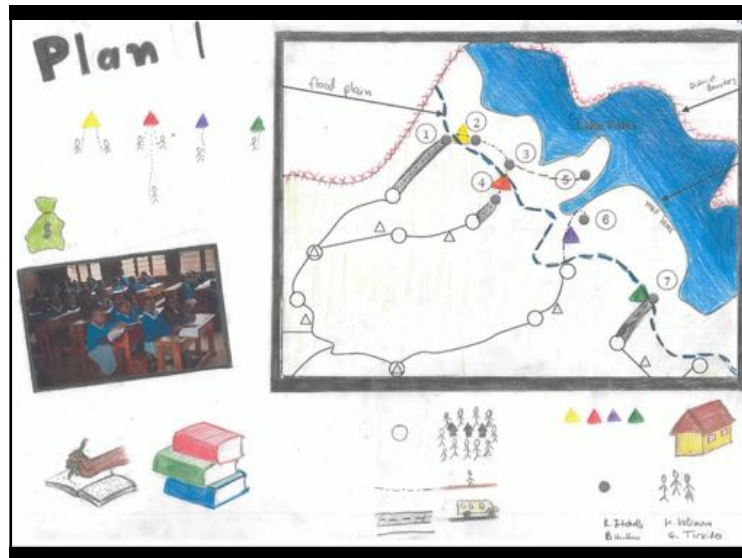
You will be assessed upon how much you improve the design. (The difference in the grade before and after you revisions).

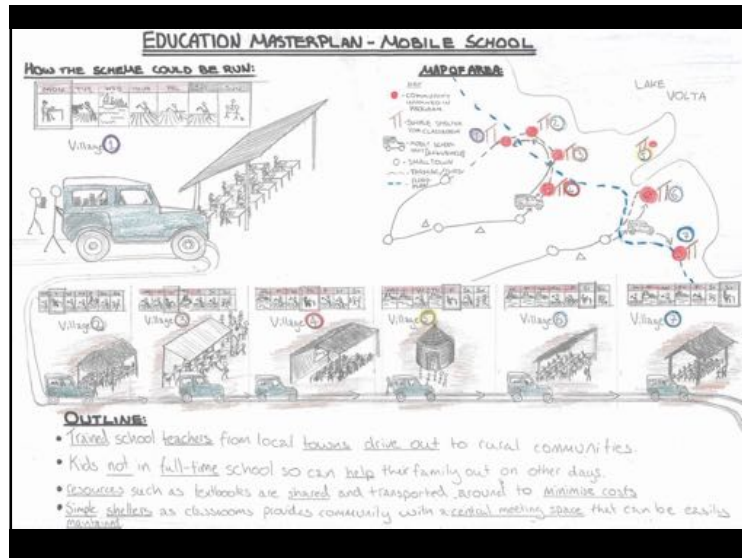




- Now:** Swap your designs with another group
- In a moment:** We will have a little discussions about the design problem.
You will assess their designs.
- Then:** You will have 15 minutes to revise one of the designs that you have been given.
You will be assessed upon how much you improve the design. (The difference in the grade before and after you revisions).

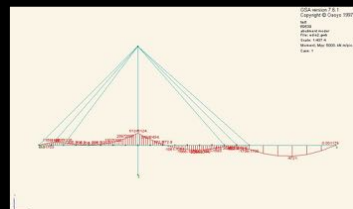
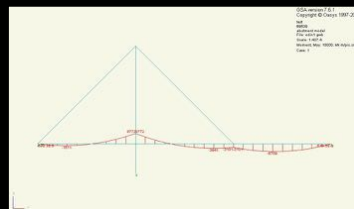






What have we
learned in Edinburgh?

Digital Engineering in Learning Creative Design?



Oliver Riches, Arup



What do students think ?

2nd yr course is very different to traditional learning styles that students are used to

Fee-paying students don't like being sent to the internet to learn

They want to be taught more method-based design, like their friend at University X

Industrial placement hosts say that they are surprised we haven't taught CAD / codes...

Vital to explain the course, aims, philosophy and context.

Barriers ?

Ability to teach

" Academics are not recruited for their design experience "

Sacred courses

" There isn't enough space in the curriculum "

Administrative hurdles

" Open-ended design does not fit our course structure "

Time and resource

" We don't have the resources to this "

Excuses

Ability to teach

" Academics are not recruited for their design experience "

Sacred courses

" There isn't enough space in the curriculum "

Administrative hurdles

" Open-ended design does not fit our course structure "

Time and resource

" We don't have the resources to this "