VSMN15, Integrated design, structures and architecture
AAHN10, Integrated design, architecture and structures

TASK A

Instructions

Your group will be given one of the three tasks A1, A2 or A3, described on the following pages, where each task involves three subtasks.

The group has *until 15:30* to work with the task assigned.

1. Prepare a presentation on 3 sheets of paper (one sheet for each of the subtasks, each sheet approximately the size of an A1). Use sketches and/or photos and text (50-200 words). Note that each group member should be prepared to give a 1-2 minutes presentation of any part of the group's work. Include in your presentation also any ideas that you abandoned during your work, if any.
2. Each group will be given ca *5 minutes* time slot for presentation+discussion.

A1: HONESTY – LOAD BEARING OR NOT?

Background

In everyday life we sometimes find objects (on any scale) that are easily understood in terms of their load bearing performance. Other objects are perceived as being designed to primarily fulfill other tasks, such as providing shelter, light or rest. Whatever the perception people might have, the intended design might in turn be that of leading or misleading people (to a conclusion about the load bearing performance of the object).

Task description

Your task is to choose an existing object (furniture, building) and analyze it based on the following perspectives.

1. Explain, in general terms, how you perceive the object. What is its context (i.e. time and place), who designed it (architect, engineer, contractor), what kind of experience is the user likely to have when using it?
2. Explain how you regard the architectural ambitions. Discuss these including references and relations to other objects and to your perception as given in subtask 1. Discuss e.g. if the structure is perceived as an important or maybe an integral part of the architecture and if the construction technology has influenced the design.
3. Sketch on the structural performance of the object, i.e. sketch and discuss how loads are transferred through the object by illustrative drawings indicating deformation and tension/compression/bending -diagrams. What is the main structural action (beam, arch, cable, truss, etc)? Do the structural sketches in any way correlate to the form of the object? Does the detailing say anything about the boundary conditions?

Peter Jakubik

Marcel Wanders

A2: A DETOUR – GET OVER IT!

Background

The shortest distance traveled while getting from one point to another, is by following a straight line. Consequently, any other choice of travel path would imply an “unnecessary” detour…but what if the detour gives additional values for the traveler, values that are connected to the chosen path of travel.

Task description

Your task is to sketch and discuss a crossing for a person or vehicle that needs to travel from A to B, and where the path involves one or several obstacles (e.g. water, height differences). The length of the path is in the order of 10-100 m. The path chosen should not be a straight line, and should also give the traveler a clear motivation of the detour itself.

1. Explain, in general terms, what your aim is in terms of what kind of experience you want the user to have when using it.
2. Explain your architectural ambitions. Discuss these including references and relations to other objects and to your aim as given in subtask 1. Discuss if the structure is perceived as an important or maybe an integral part of the architecture and if the construction technology has influenced the design.
3. Make some sketches on the structural performance of the crossing and discuss how loads are transferred through the object by e.g. illustrative drawings indicating deformation and tension/compression/bending-diagrams. What is the main structural action (beam, arch, cable, truss, etc)? Do the structural sketches in any way correlate to the form of the object? Does the detailing say anything about the boundary conditions?

Gateshead Millenium bridge, Keith Brownlie

A3: SHAPE AND MATERIAL

Background

Depending on the shapes used in architecture, material choices are often a consequence of the shape. Also several materials can be combined to obtain the necessary performance for a given shape. At the same time, the material chosen can be in synch with the shape, or in contrast (honesty!).

Task description

Your task is to select an object where the materials involved are clear consequences of the object's shape. State the connection between the shape and the materials involved. Analyze the object from the following perspectives.

1. Explain, in general terms, how you perceive the object. What is its context (i.e. time and place), who designed it (architect, engineer, contractor), what kind of experience is the user likely to have when using it?
2. Explain how you regard the architectural ambitions. Discuss these including references and relations to other objects and to your perception as given in subtask 1. Discuss if the structure is perceived as an important or maybe an integral part of the architecture and if the construction technology has influenced the design.
3. Make some sketches on the structural performance of the object and discuss how loads are transferred through the object by e.g. illustrative drawings indicating deformation and tension/compression/bending-diagrams. What is the main structural action (beam, arch, cable, truss, etc)? Do the structural sketches in any way correlate to the form of the object? Does the detailing say anything about the boundary conditions?