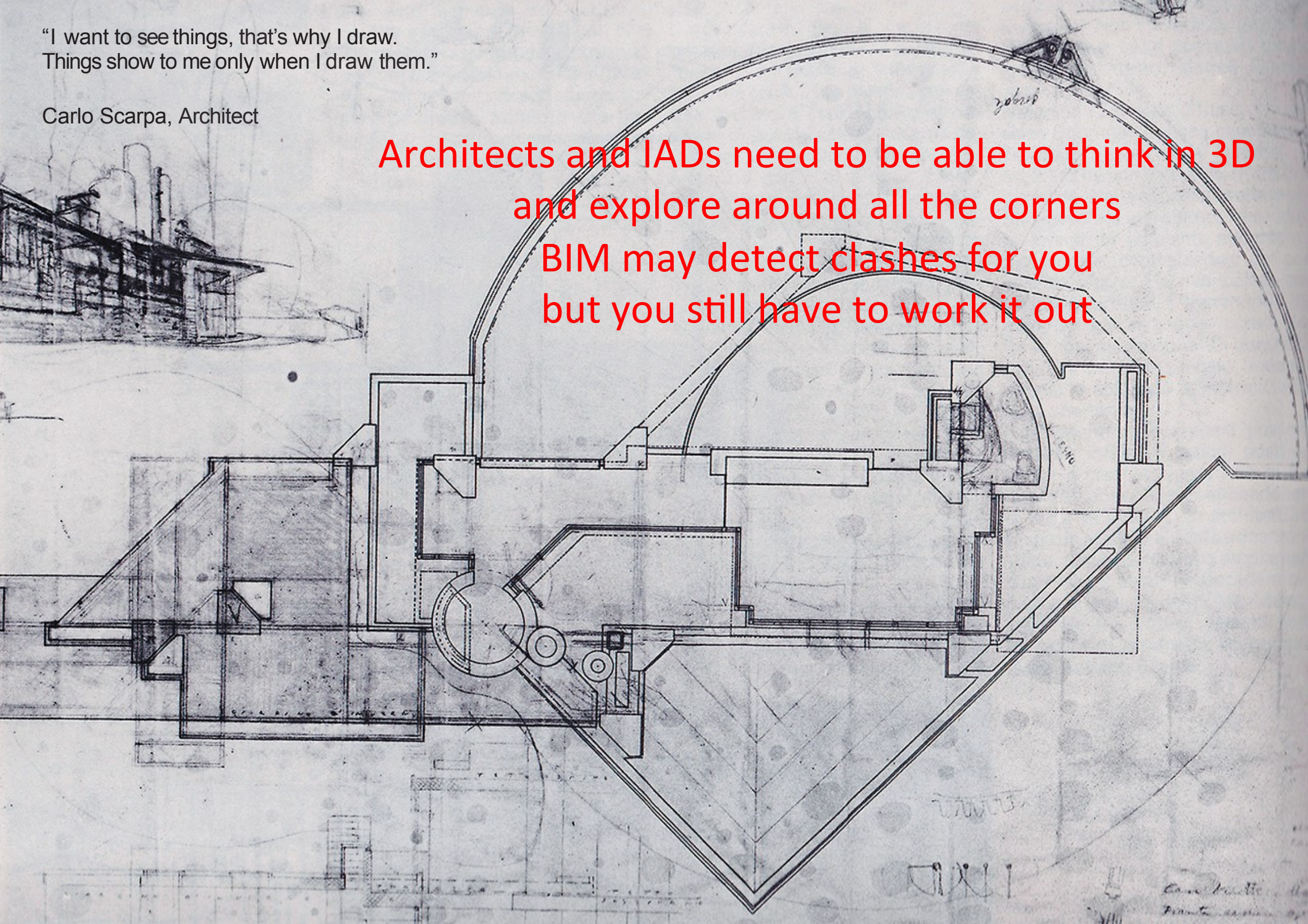
Tech Lecture 1
Introduction to Materials

Advanced Technology Module Code: 5CTA1140
Semester A: Weeks 10 -24
Credits: 15
Module Coordinator: Brian Murphy
Course Leader: Ilona Hay
Lecturer: Sonia Tong
Lecture 1: Week 10 3:30-4:30pm
15th October 2019

University of Hertfordshire


"I want to see things, that's why I draw.
Things show to me only when I draw them."
Carlo Scarpa, Architect
Architects and IADs need to be able to think in 3D
and explore around all the corners
BIM may detect clashes for you
but you still have to work it out

Introduction to Materials

In line with your first Studio Project, we will briefly examine a few material types;

1. Timber Materials
2. Fired Materials
3. Formed Materials
4. Textile Materials

David Chipperfield, Killesberg

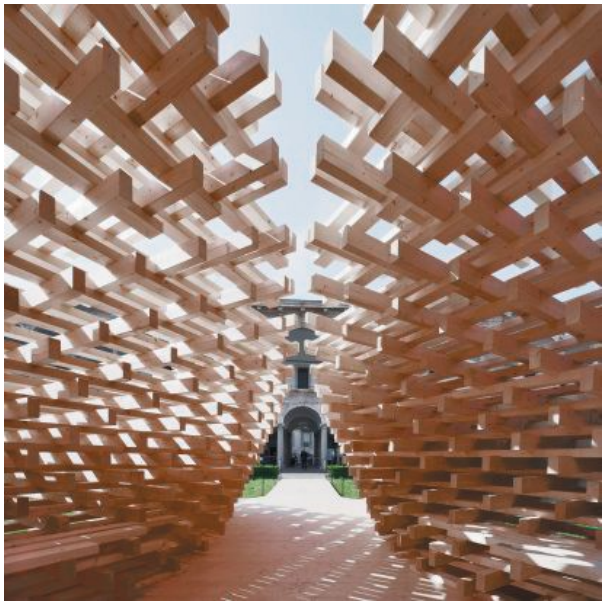
1 Timber Materials

- Hardwood
- Softwood
- Plywood
- Particleboard (Chipboard)
- Oriented Strand Board (OSB)
- Medium Density Fibreboard (MDF)
- Cross Laminated Timber Panels (CLTP)
- Laminated Veneer Lumber (LVL)

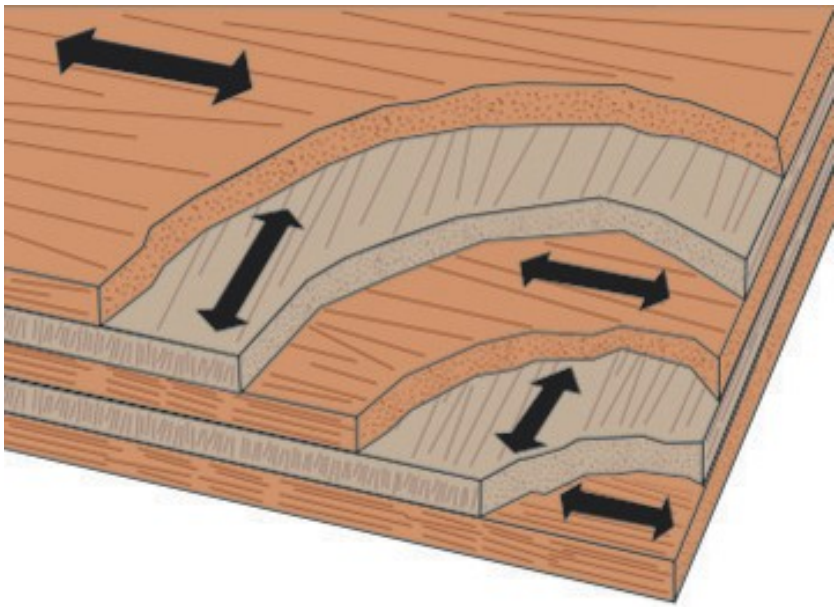
Miller & Maranta, Market Hall in Aarau

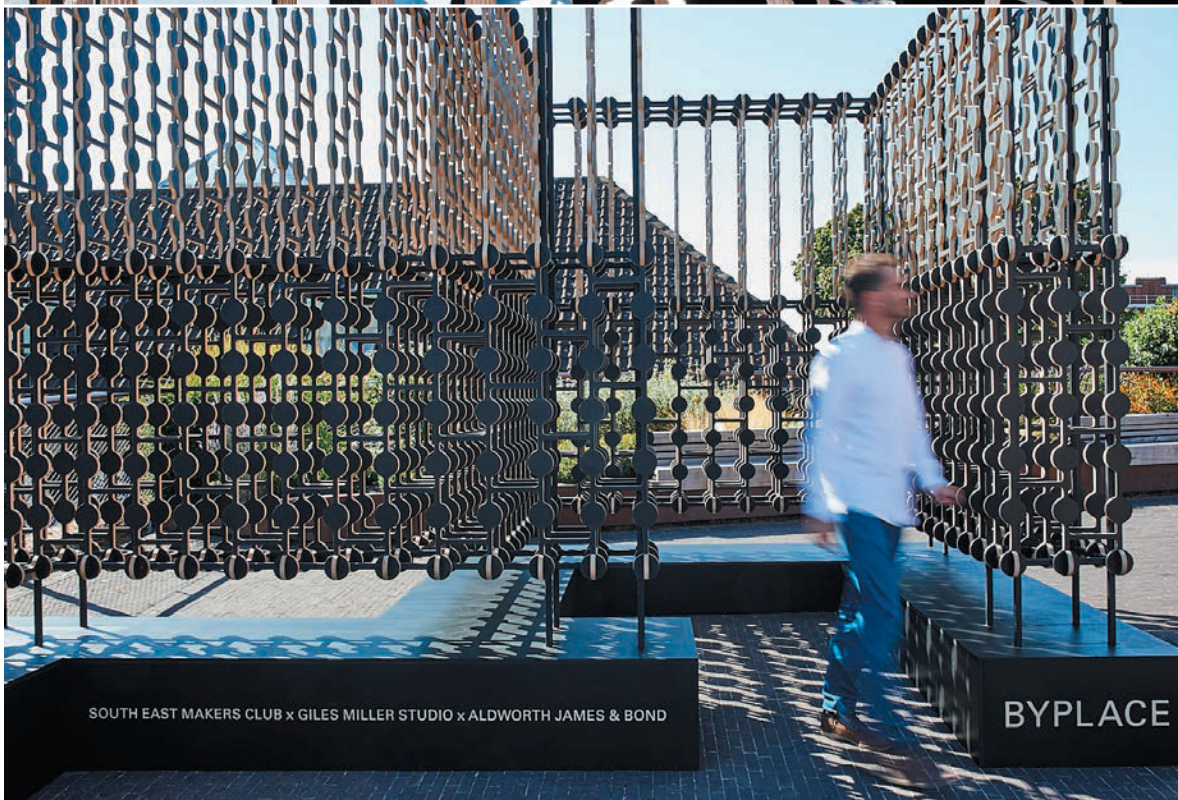
Hardwood

Softwood



Plywood

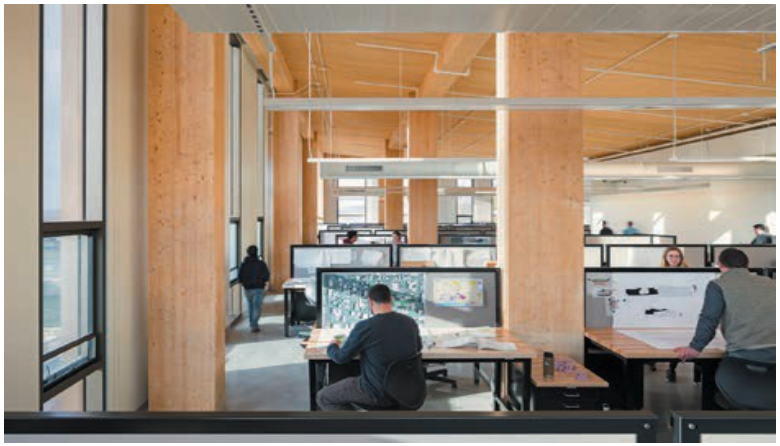



SOUTH EAST MAKERS CLUB x GILES MILLER STUDIO x ALDWORTH JAMES & BOND
BYPLACE

Particleboard (Chipboard)

Oriented Strand Board (OSB)

Cross Laminated Timber Panels (CLTP)



2 Fired Materials

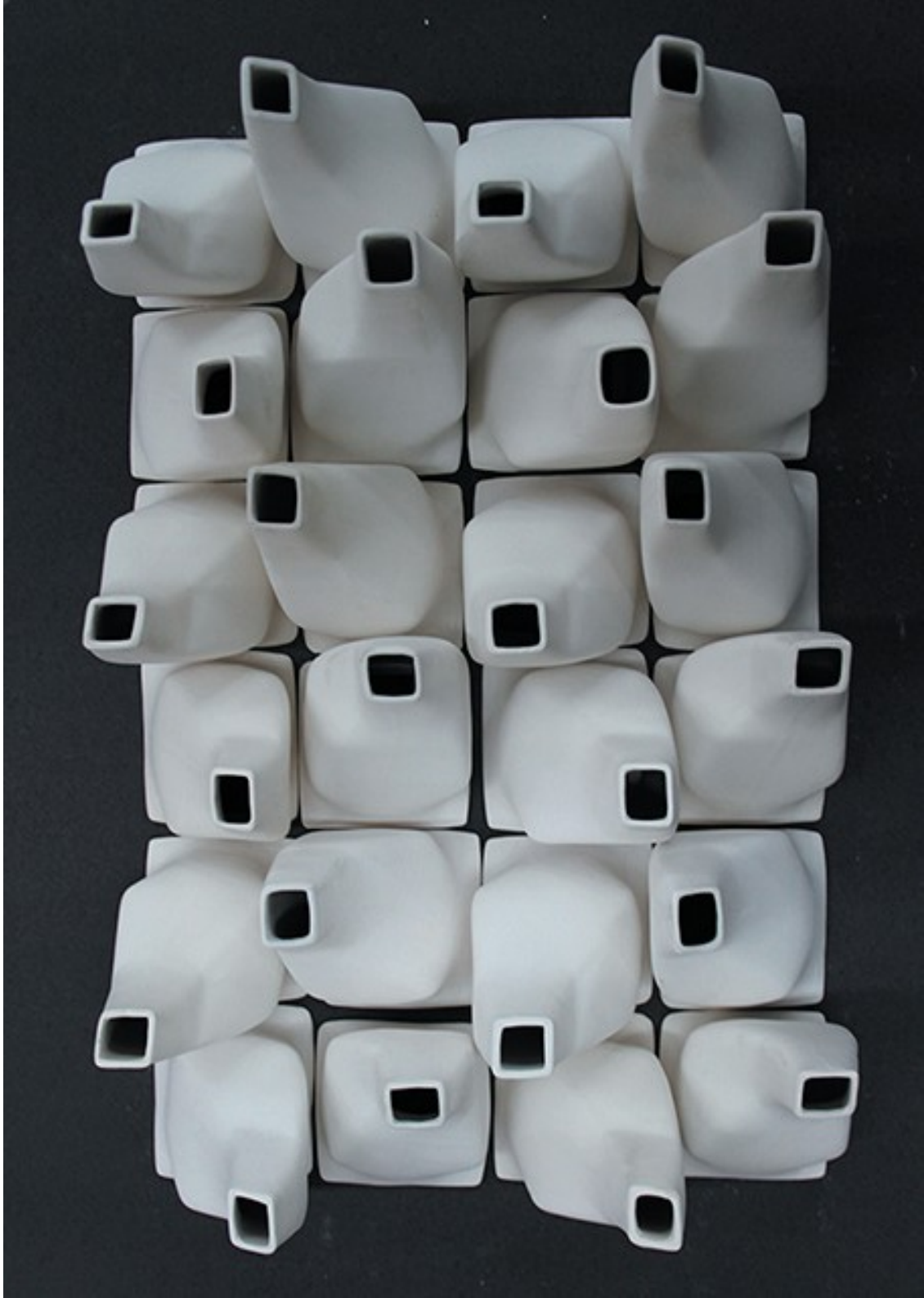
Clay

Ceramics

Porcelain

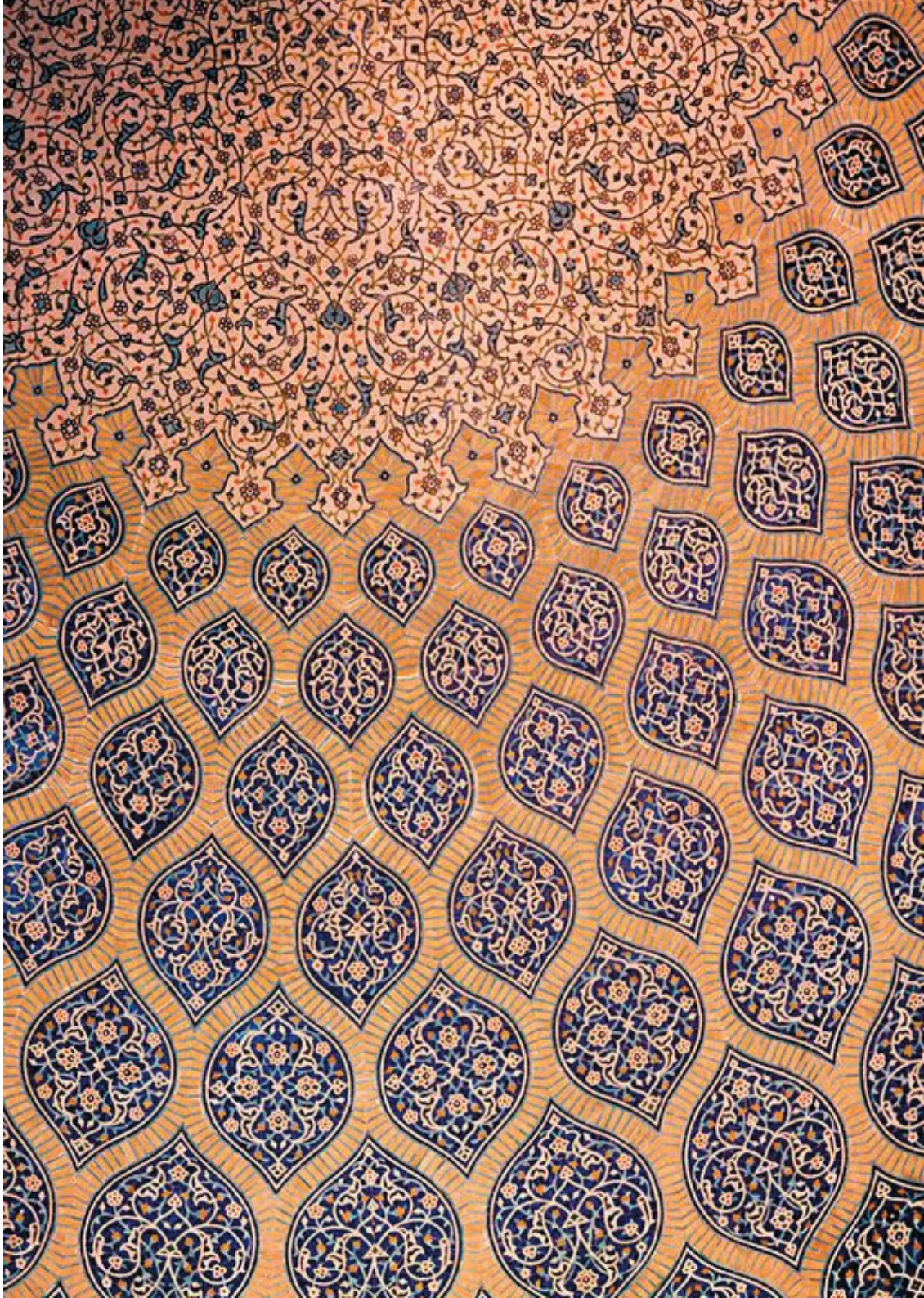
Terracotta

Bricks

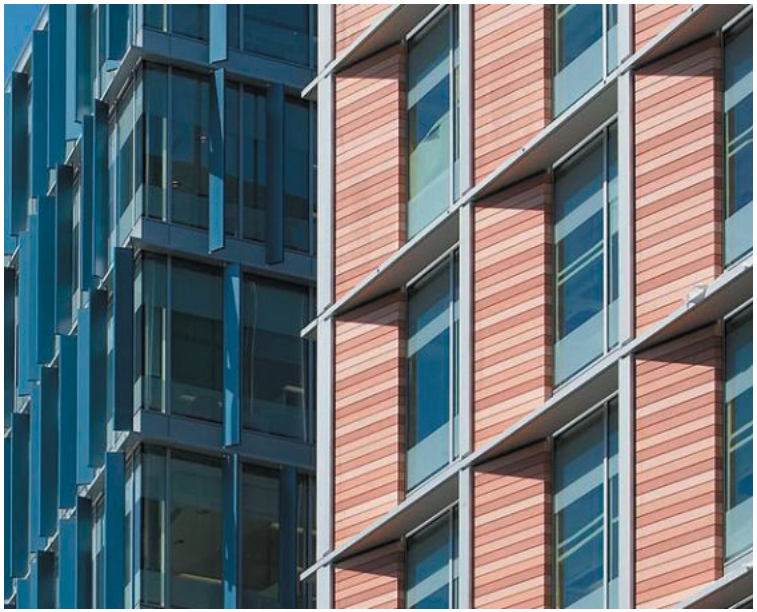


ECALab, prototype
ceiling

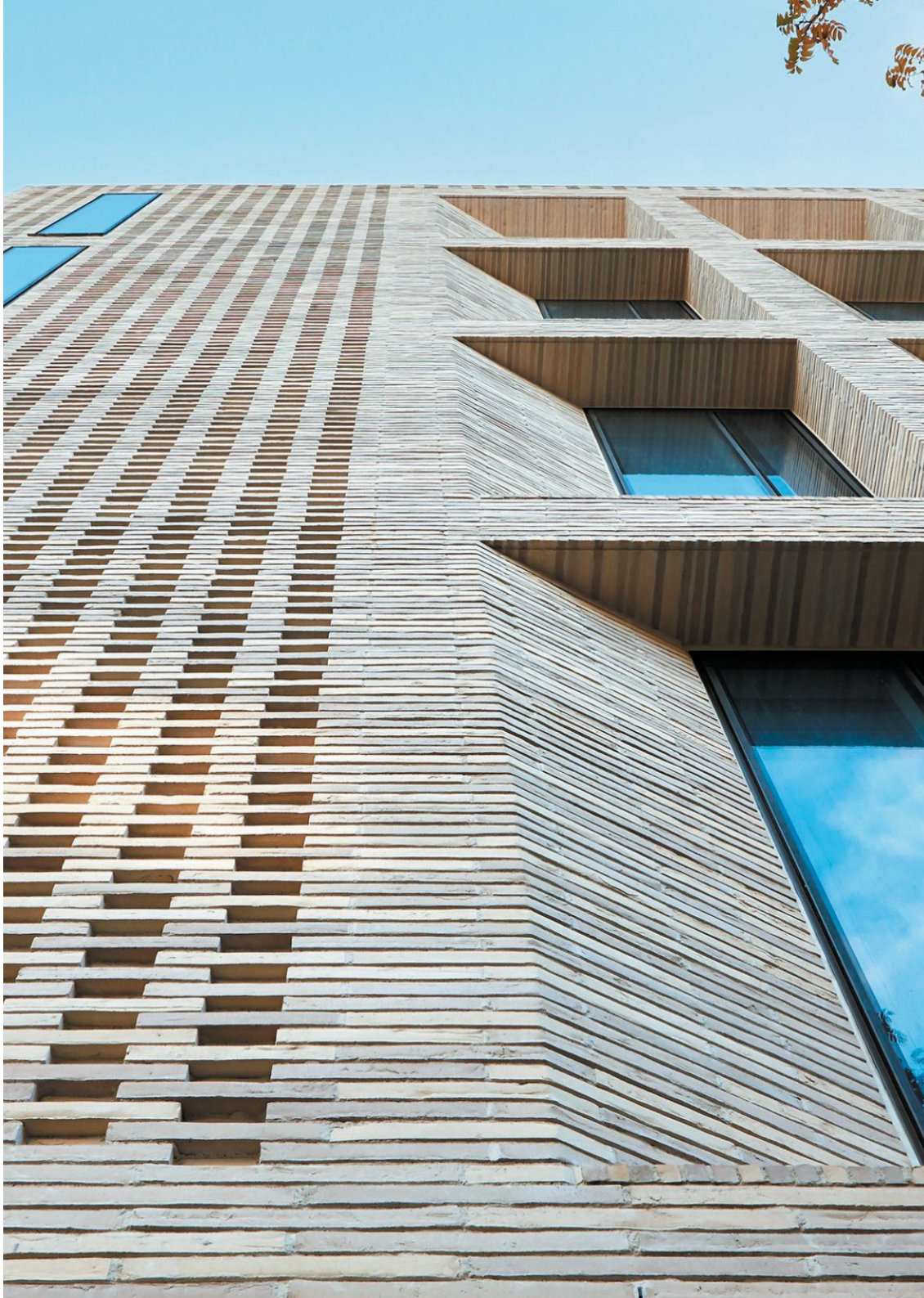
Ceramics & Porcelain



Terracotta



Bricks



3 Formed Materials

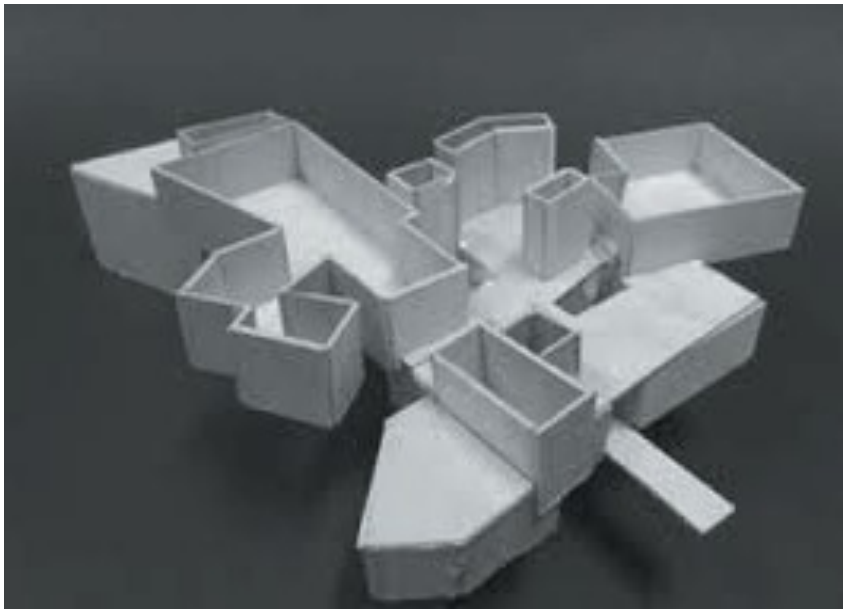
- Concrete
- Plaster
- Cast Glass
- Cast Iron

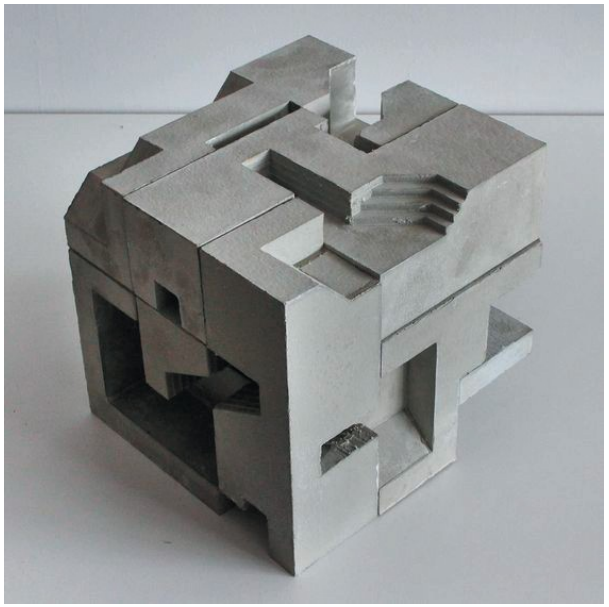
Eduardo Souto de Moura, Braga Municipal Stadium

Concrete - In-situ

Concrete - Pre-cast

Plaster





Cast Glass

Cast Iron

4 Textile Materials

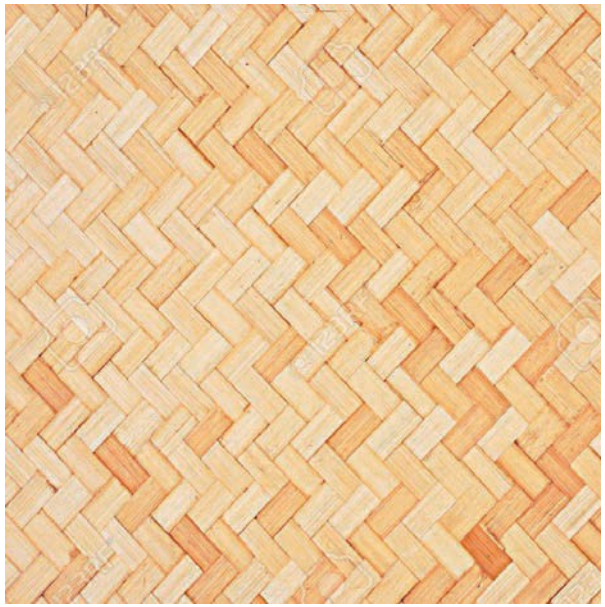
- Tensile
- Fabric
- Carpet
- Cloth
- Woven

Amin Taha Architects,Barrett's Grove

Tensile Fabric

Fabric/Cloth + Carpet

Woven



Technology Task 01: Adopt a Material

Based on your Studio Design Project 1,

‘Adopt' a material to study in more detail.

Learning Outcomes:

- Integrate technology into your Studio project through an exploration of design ideas and materials
- Understand impact of chosen material on design proposal
- Place sustainability and green issues at the centre of your design process
- Develop modelling and prototyping skills

MUMA Architects, Storey’s Field Centre, Cambridge

Design Task 01: Adopt a Material

Use following headings:

- **How It Is Made**
  - (raw materials groewing /extraction, preparation, process, end product, etc.)
- **Inherent Properties**
  - (strengths, weaknesses, construction considerations, etc. ideally tabulated)
- **Sustainability**
  - (sourcing, production process, pollution caused, energy and carbon footprint, recycling, labelling, etc)
- **Relevant Precedent Studies**
  - (minimum 5 No. exploring construction principles, typologies, details, etc)
- **Comparative Qualities**
  - (compare to material from different category; Timber, Fired, Formed, Textile; ideally tabulated for comparisons)
- **Design Process**
  - Studio Design Project 1: record design process, tectonics, fabrication, etc.)

Link to Brief:

https://herts.instructure.com/courses/29445/assignemnts Page not found

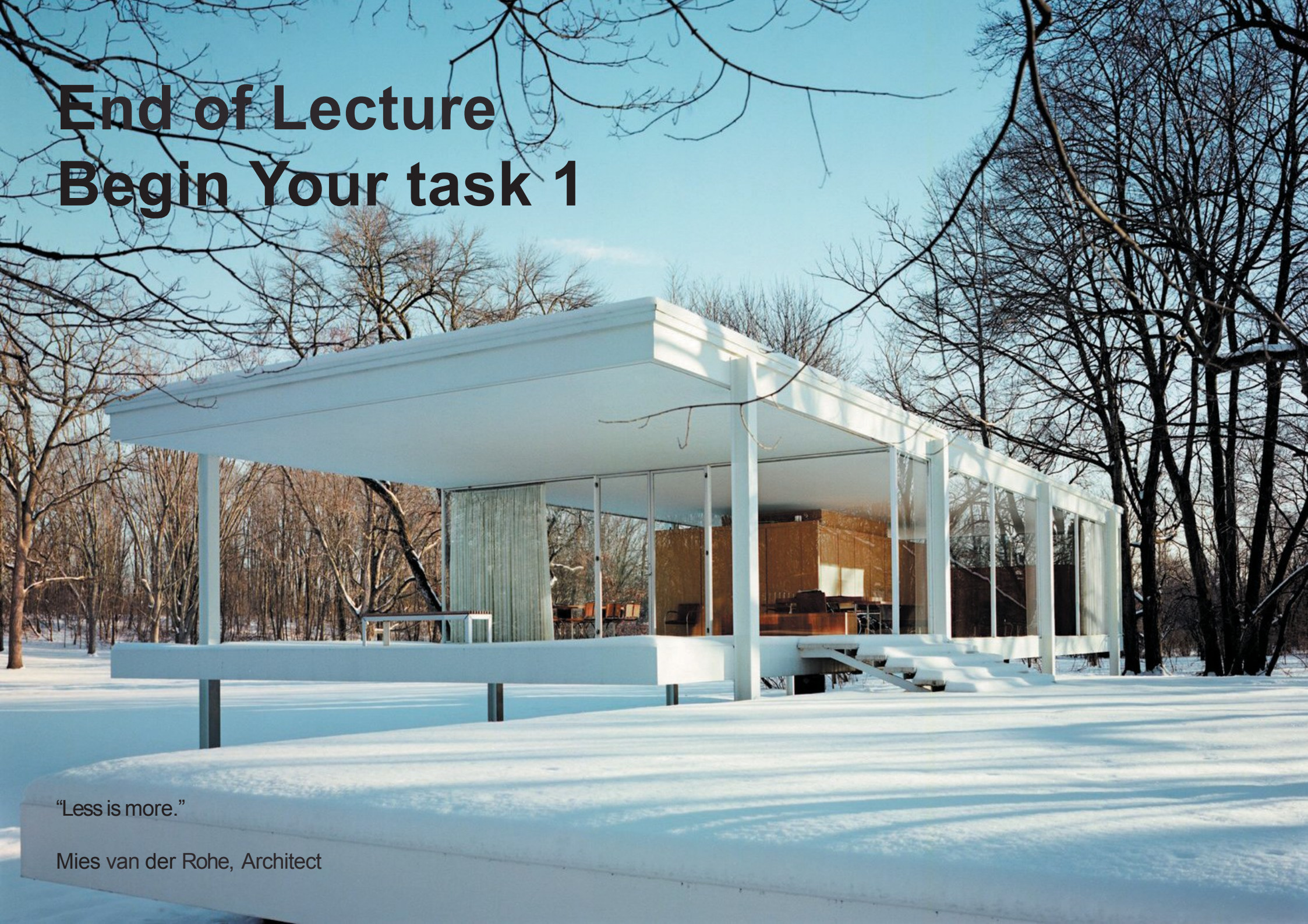
Format:

Report, A4 landscape, bound as a single PDF

Submission:

04/11/2019 before 12 o'clock midnight to Folder

End of Lecture
Begin Your task 1



"Less is more."

Mies van der Rohe, Architect