



Loughborough  
University

# MSc Infrastructure Design and Management

## School of Architecture, Building and Civil Engineering

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MSc Infrastructure Design and  
Management Programme Director

# Accolades



**1ST IN THE UK  
FOR BUILDING**

THE TIMES AND SUNDAY TIMES  
GOOD UNIVERSITY GUIDE 2021



**1ST IN THE UK FOR BUILT  
ENVIRONMENT**

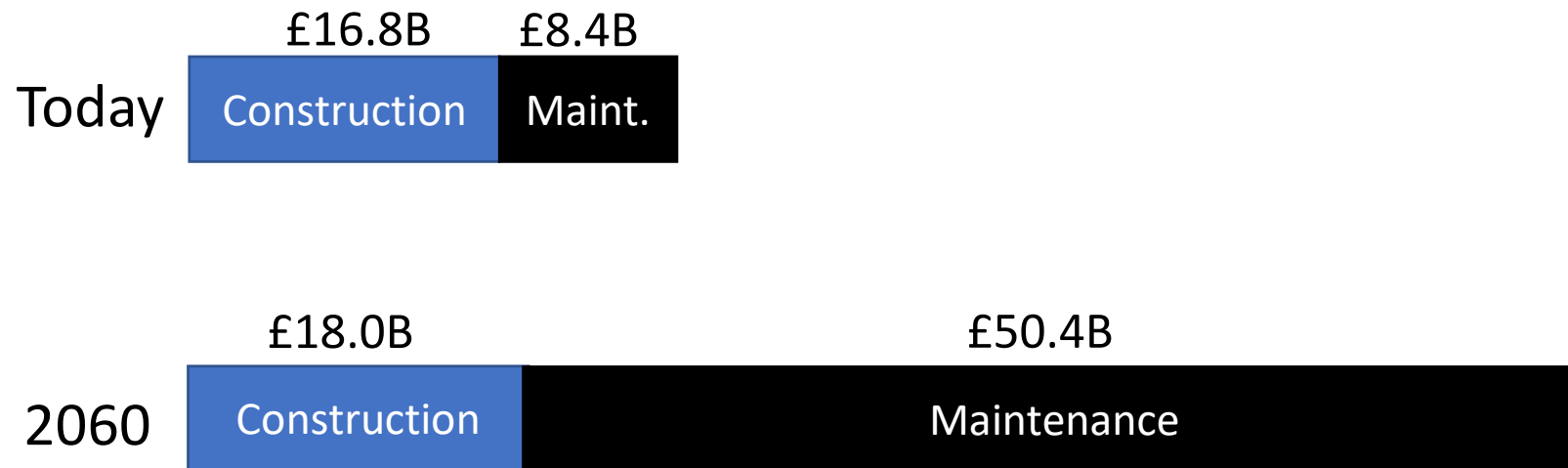
'FOR THE VITALITY AND SUSTAINABILITY OF  
THE RESEARCH ENVIRONMENT' (REF 2014)

# An exciting field

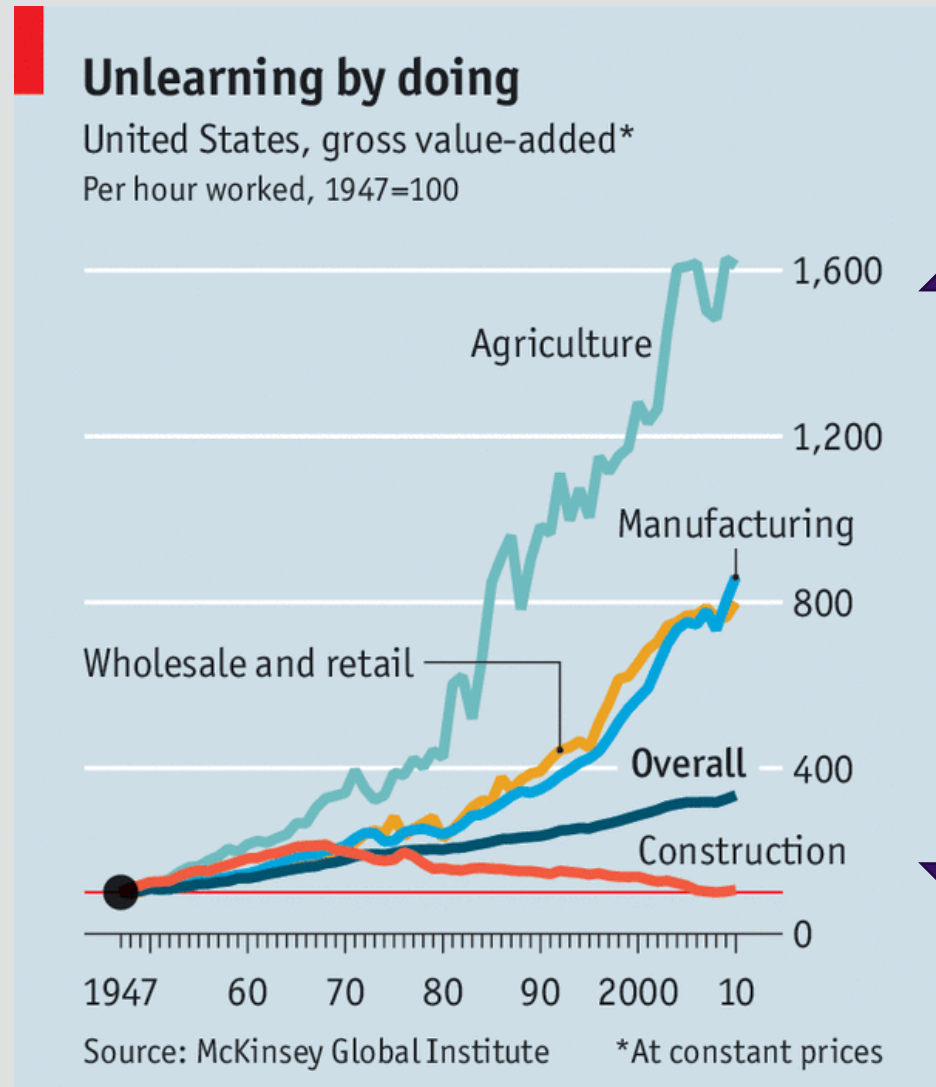


# What will the sector look like?

In the UK

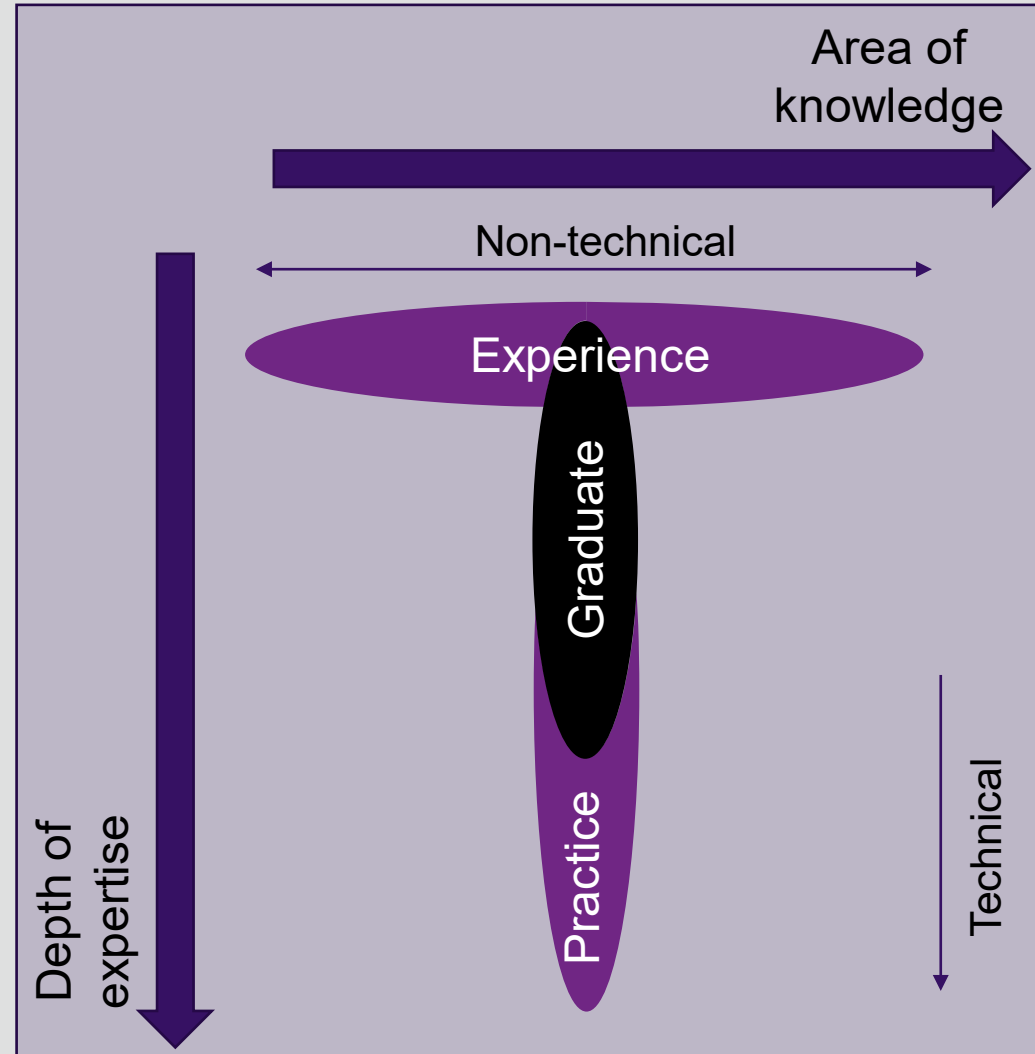


# What will the sector demand?



- Automation
- Digital technologies

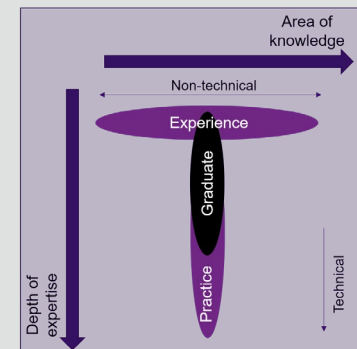
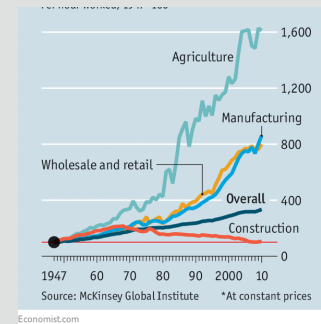
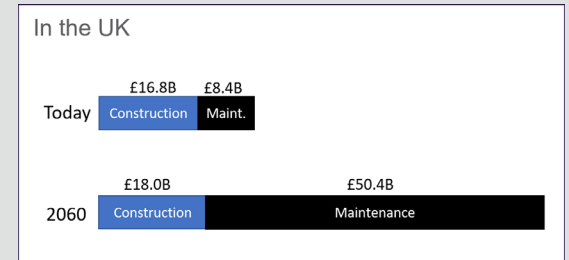
# What professional will the sector want?



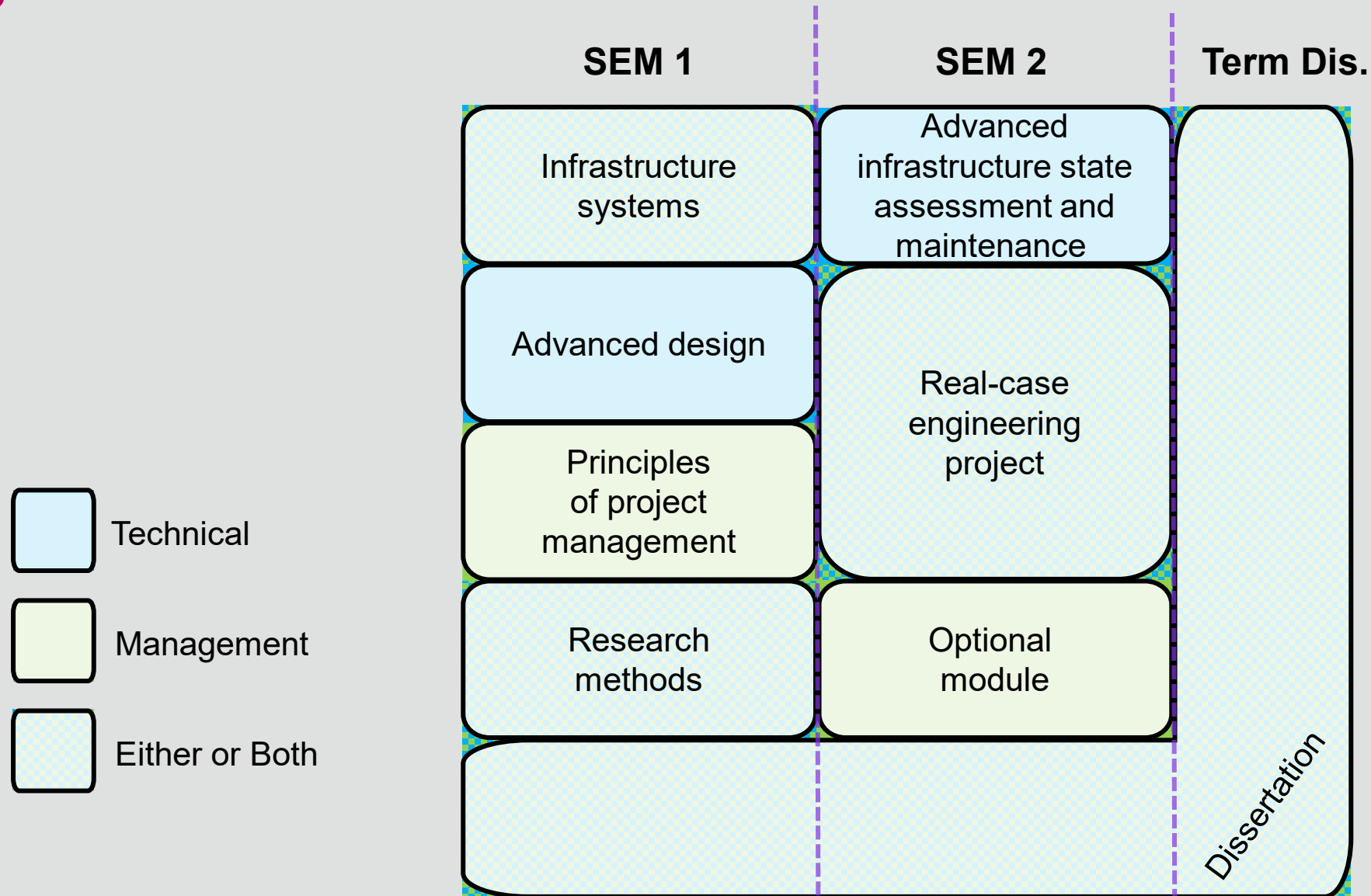
# Our 3 unique pillars

- Design and Maintenance
- Inclusion of new technologies
- Combine Technical and Management in the context of real projects

Only in the UK!!!!



# Programme structure





# Student projects and competitions

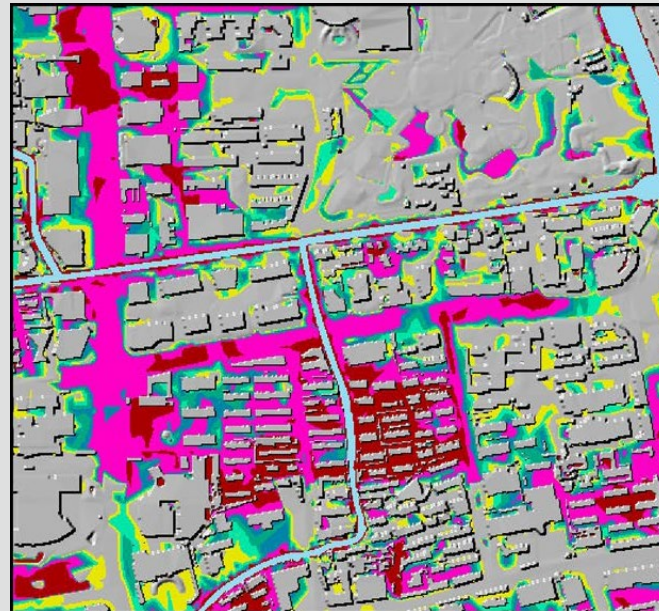
## Example of real case engineering project



- Inspection
- Assessment of state
- Definition of maintenance plan
- Integration of information in BIM environment

# Research areas

- Advanced methods for design, delivery and maintenance
- Novel strategies to assess the state of assets
- Infrastructure subjected to extreme events



# Dissertation projects

## Examples

- Automated state assessment of bridges using data from unmanned vehicle
- Topological structure optimisation of infrastructure components considering sustainability constraints
- Behaviour of repaired sections sprayed using robotic systems

# Facilities

- Reconfigurable research and teaching laboratory
- UKCRIC National Facility for Infrastructure Construction
  - Robotic arms
  - Automated flexible moulding system
  - Unmanned vehicles with array of sensor
  - Cutting edge metrology and visualisation suite
  - Conventional civil engineering kits



# Industry partnerships and collaborations



HS2



ATKINS



Balfour Beatty

ARUP

AECOM



M  
MOTT  
MACDONALD

JACOBS



# Career prospects

- Contractors  
Network Rail, Mott MacDonald, Arup, WSP, AECOM, Laing O'Rourke, Severn Trent, ABP, Interserve, Balfour Beatty, Lend Lease, Abacus, Jacobs, Atkins, Arcadis, The British Army, Tesco, Schofields, Fluor, Lidl, Walter Lilly, Connect Roads, AMEY, Bouygues, Costain, Eurovia, Kier, MACE, Morgan Syndall, Pick Everard, SISK, Skanska...
- Asset operators
- Consultants
- Public bodies

# Professional accreditation

The programme is seeking accreditation from the Joint Board of Moderators (JBM):





- Institution of Civil Engineers (ICE)
- Institution of Structural Engineers (IStructE)
- Chartered Institution of Highways and Transportation (CIHT)
- Institute of Highway Engineers (IHE)





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Thank you for listening

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