An aerial photograph of a city, likely Chongqing, China, showing a dense urban landscape with numerous high-rise buildings and a wide river. A large bridge is visible in the background. The foreground shows a mix of residential buildings and greenery.

AN INTRODUCTION TO BUILDING ENERGY SIMULATION AT THE URBAN SCALE

University College London

CEPT University

December 2019

Programme

Why do we model cities

Mon am

Urban data sets

Mon pm, Tues am

Data collection exercise

Tues pm

Combining data sets

Wed am

Dynamic thermal simulation

Wed pm

Upgrading existing buildings

Thurs am

Working directly with IDF files

Thurs pm

Building an urban model

Fri am

Practical exercise

Fri pm, Sat am & pm

Assessment



Participation in group discussions and exercises (20%)



Group presentation (60%)

Understanding of question and appropriate selection of methods
Quality of analysis and accuracy of results
Assessment of limitations of insights
Quality of presentation



Individual poster (20%)

Strength of individual contribution

Course Objectives



Understand the complexities of analysing dynamic urban environments including historic approaches



Awareness of the range of tools available for modeling urban energy demand, the pros and cons of different types of tool



Familiarity with different forms and sources of data needed to predict urban energy demand

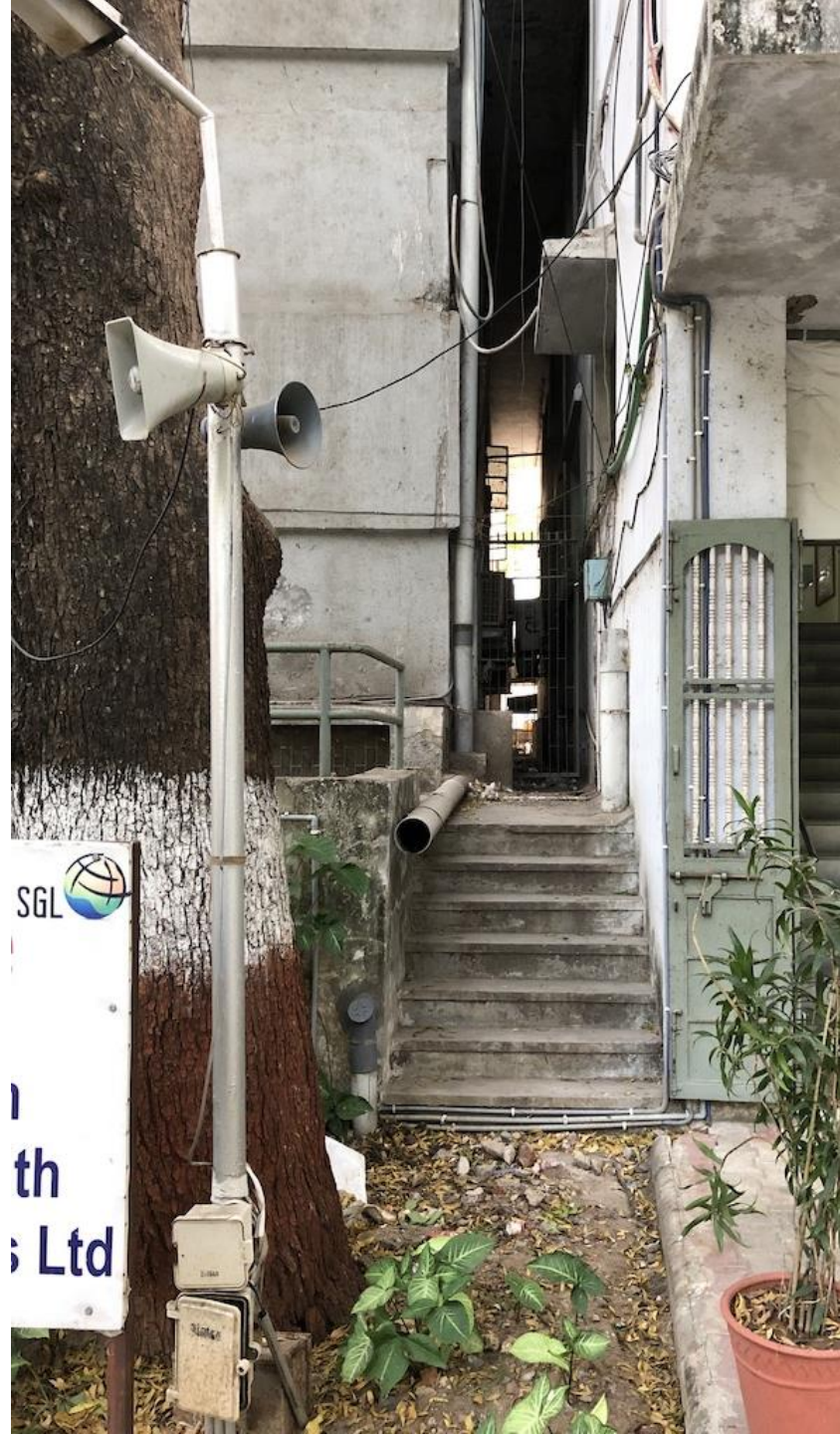


Understand the place of geographic information systems (GIS) in energy modelling



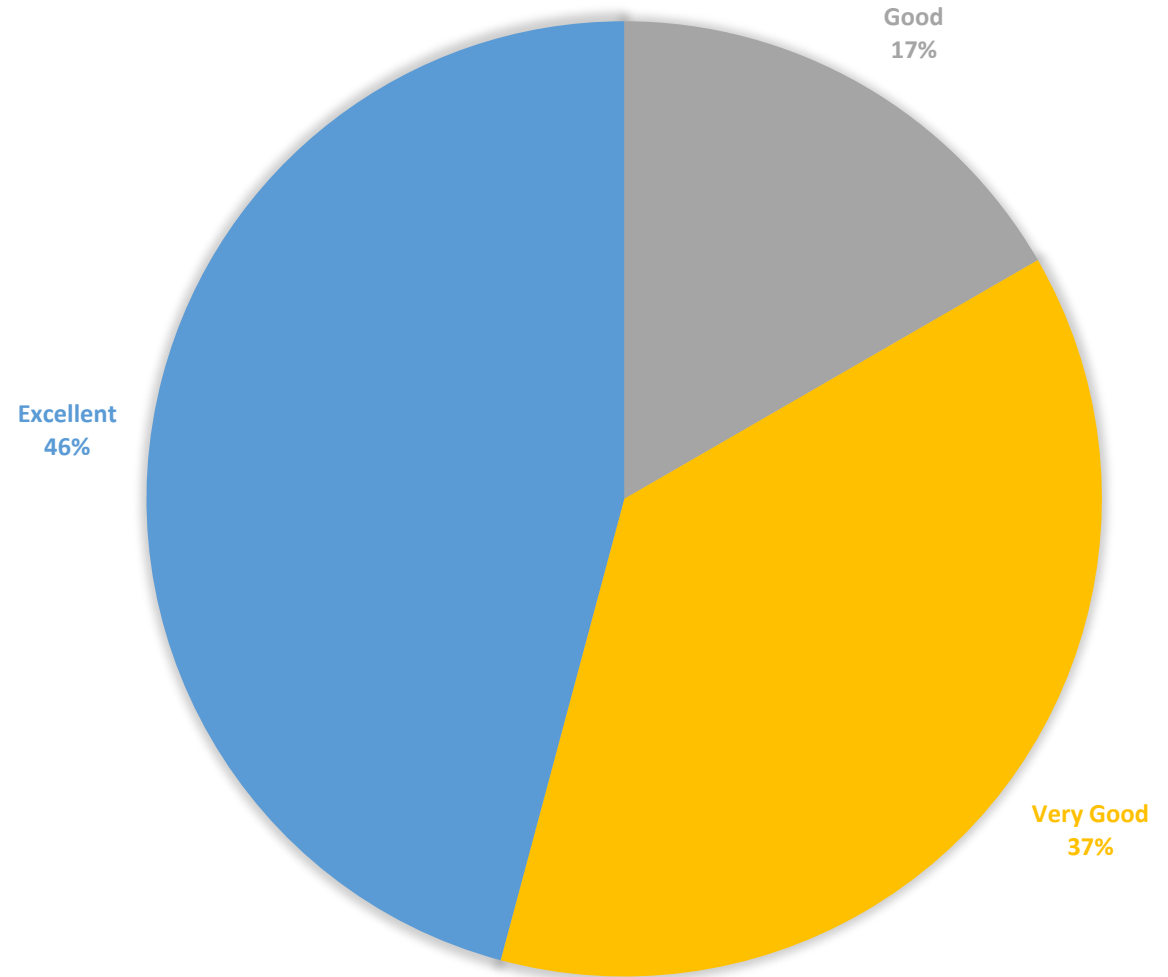
Hands-on experience of:

dynamic thermal simulation
using python tools for large
scale models



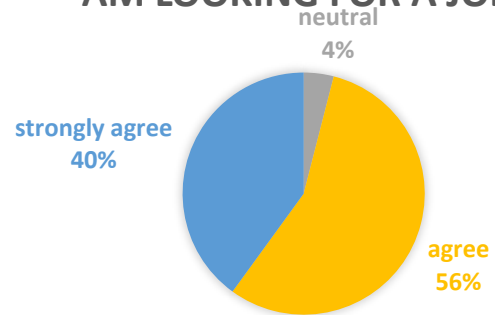
Feedback

WHAT IS YOUR OVERALL RATING OF THIS COURSE?

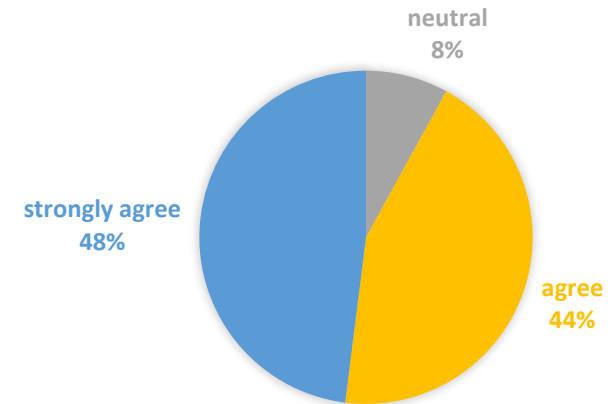


Feedback

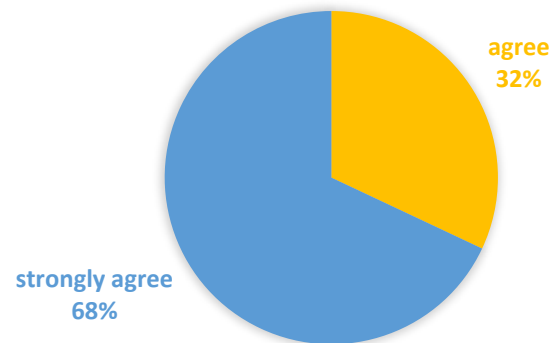
I FEEL THAT THE INFORMATION AND SKILLS DISCUSSED IN THE COURSE WILL BE VALUABLE AFTER GRADUATING WHEN I AM LOOKING FOR A JOB.



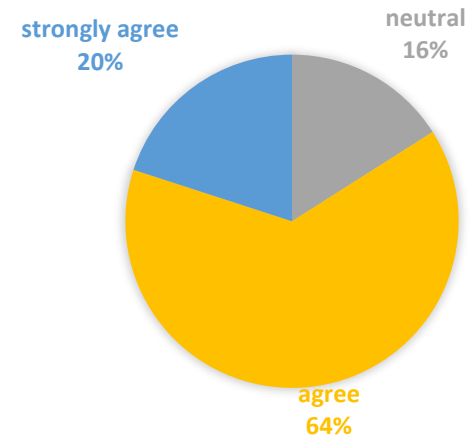
THE AIMS OF THE COURSE WERE CLEAR.



THE LECTURES WERE WELL PREPARED AND PRESENTED IN A LOGICAL ORDER

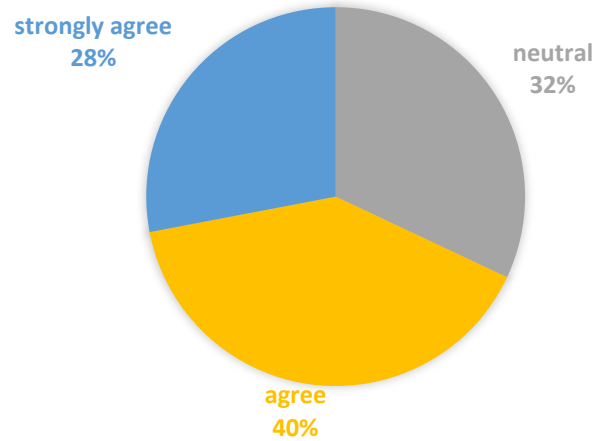


THE COURSE WORKLOAD WAS MANAGEABLE

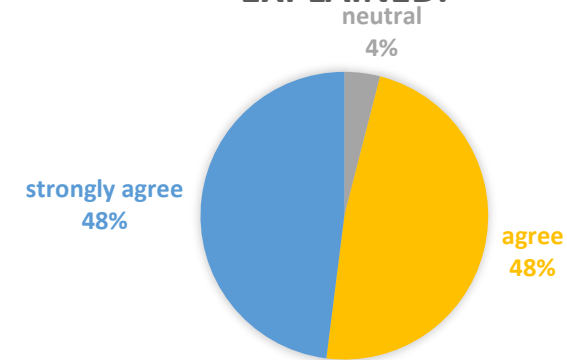


Feedback

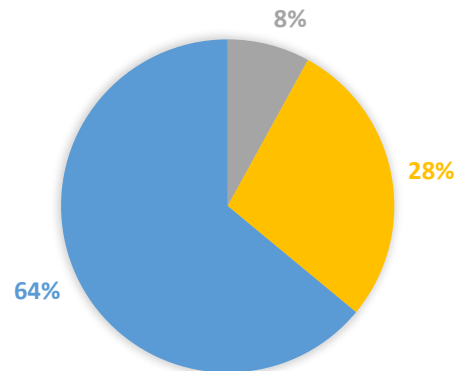
THE PRE-READINGS WERE HELPFUL



THE LECTURERS WERE AUDIBLE AND THE SUBJECT MATTER WAS CLEARLY EXPLAINED.



THE TEACHING WAS STIMULATING AND HELPED MAKE THE SUBJECT INTERESTING



I FEEL THAT THE INFORMATION AND THE PACE OF TEACHING WAS AT THE RIGHT SPEED.

