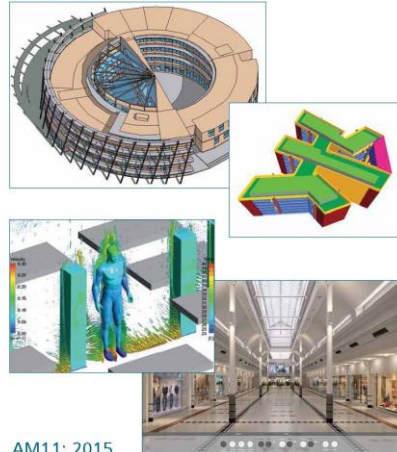


CIBSE Application Manual AM11 'Building Performance Modelling'

INTRODUCTION TO AM11

Building performance
modelling



AM11: 2015

Hazim Awbi

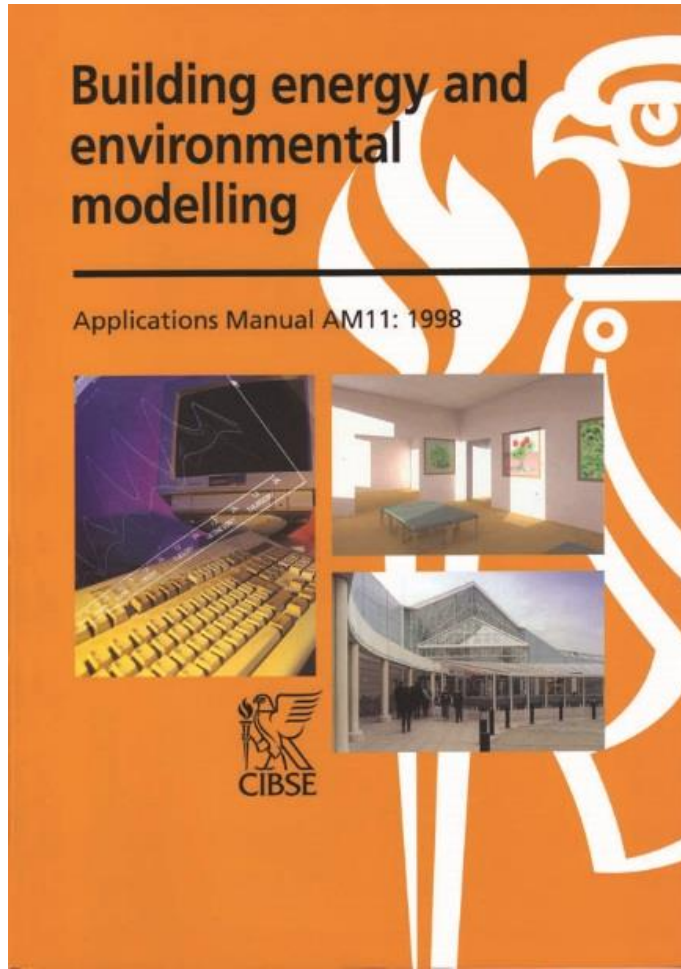
**AM11 Steering Committee Chair
University of Reading**



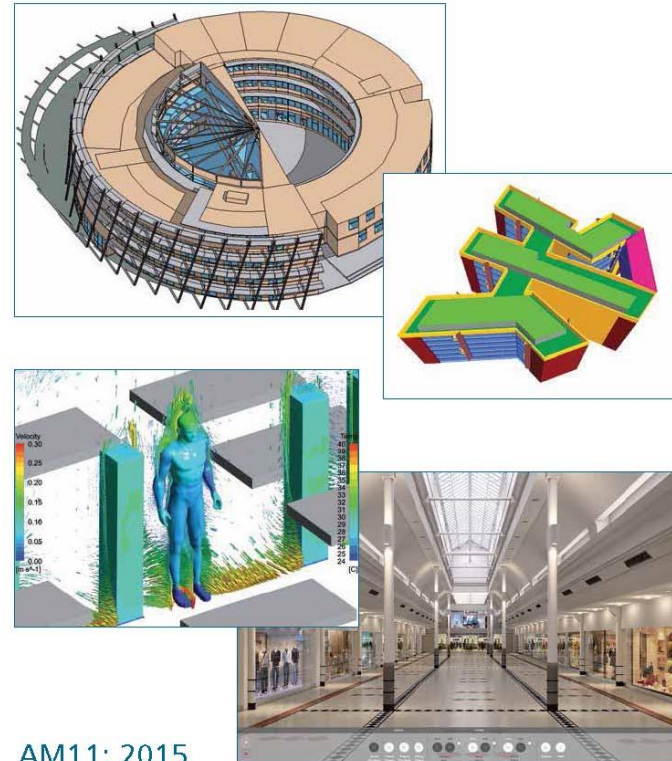
CIBSE
Building Simulation

AM11 Overview Seminar

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Building performance modelling

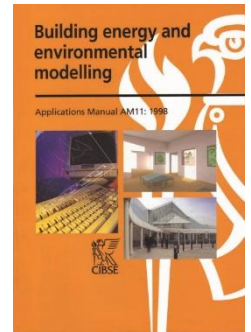


AM11: 2015

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Building Energy and Environmental Modelling (BEEM)

- Although BEEM mentions different aspects of building and energy modelling it only skims through most of these (such as CFD, lighting and plants) and focuses on thermal modelling.
- BEEM focuses on applications and does not cover the theory and concepts of building simulation in any depth.
- BEEM was written at the time when building simulation was only used by the experts. Now this is inseparable part of design and is used extensively by both modelling experts and the regular buildings and systems designer.



Background to the New AM11 (BPM)

- AM11 has been completely re-written to reflect the vast development in building modelling and simulation over the past 17 years since the first version was published.
- The new Manual attempts to address the challenges facing building design in general and their modellers in particular.
- It has been written by many experts in most aspects of building and system modelling, many of whom are Steering Committee members of the CIBSE Building Simulation Group.



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The new Manual covers the general concepts of and developments in energy and environmental modelling and in particular focuses on:

- Quality assurance procedures
- Compliance with UK and some international building energy efficiency codes
- Thermal environment and energy
- Ventilation
- Lighting
- Plant modelling

CIBSE Application Manual AM11 'Building Performance Modelling'

The new AM11 chapters are:

Chapter 1: Introduction

Chapter 2: Quality assurance

Chapter 3: Modelling for building energy performance regulations

Chapter 4: Energy modelling

Chapter 5: Thermal environment modelling

Chapter 6: Ventilation modelling

Chapter 7: Lighting modelling

Chapter 8: Modelling of plant and renewable energy systems

Chapter 9: Case studies

Using this Manual

- Users of this Manual are expected to have developed basic skills in one or more models to enable them explore more fully the information, tasks and procedures explored in this Manual under different categories.
- Ideally, users of the manual should have developed understanding of at least basic scientific principles of the software package of interest.
- For more complex codes, a thorough understanding of the modelling procedures involved would be required for achieving the desired aims from conducting the simulation exercise. In the case of CFD modelling for example, skills are needed for developing geometry data input, computational meshing, boundary conditions, turbulence models, solution techniques, quality assurance and presentation of the output results in suitable formats



CIBSE Application Manual AM11 'Building Performance Modelling'

Presenters:

Chapter 2: Fouroutan Parand (AECOM)

Chapter 3: Rokia Raslan (University College London)

Chapter 4: David Williams (WSP-Parsons Brinckerhoff)

Chapter 5: Malcolm Orme (AECOM)

Chapter 6: Darren Woolf (Hoare Lea)

Chapter 7: John Mardaljevic (Loughborough University)

Chapter 8: Chris Underwood (University of Northumbria)

Chapter 9: Darren Coppins (Build Physics/Chapman BDSP) and Ioannis Rizos (Altelier Ten)