ENERGY AUDITING AND DECARBONISATION OF THE BUILT ENVIRONMENT

A two day professional development course in energy auditing and decarbonisation by the Sustainable Buildings Research Centre at the University of Wollongong.
COURSE OBJECTIVES

This course will provide companies and individuals with an in-depth understanding of and capabilities in energy auditing and the measurement and evaluation of actual energy performance in commercial buildings.

This course will greatly benefit those wishing to reduce energy consumption in individual buildings or over property portfolios, and engineers who wish to develop their knowledge and skills in the field of energy efficiency enhancement.

A key objective is to empower attendees with the understanding and skills to be able to commission and/or carry out effective energy audits in order to realise optimal economic and environmental benefits.

COURSE BENEFITS

On successful completion of the course you will gain knowledge and skills to assist you in the following:

- Understanding of energy audit issues for commercial buildings
- Appreciation of the complexity of energy audits for buildings and HVAC systems, and the need for clear communication skills
- Knowledge of current legislative frameworks and requirements
- Knowledge of energy audit standards, levels and methods, and NABERS benchmarks for different types of buildings
- Knowledge of measurement and verification (M&V) of energy savings in commercial buildings
- Understanding of life cycle energy assessment including embodied energy and operational energy
- Understanding of impact of human factors on building energy use and the importance of promoting human behaviour change
- Knowledge of international and national rating schemes such as NABERS, Green Star and LEED

WHO SHOULD ATTEND

Building services engineers and professionals, building designers, aspiring energy auditors, building commissioning professionals and other engineers and environmental specialists who wish to work in the area of energy auditing and de-carbonization of the built environment, or who wish to understand aspects of energy consumption, energy audits, building retrofit options, and measurement and verification (M&V) of energy savings in commercial buildings.
The course is conducted over two days commencing at 8.45am, (Date TBC) September 2015 and comprises lectures and case studies. Present course outline is provided below.

### Day 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
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<tbody>
<tr>
<td>8:45am</td>
<td>Registration</td>
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<td></td>
<td>• Overview of legislative frameworks and requirements governing energy auditing and efficiency in Australia</td>
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<tr>
<td></td>
<td>• Introduction to international and national rating schemes such as NABERS, Green Star and LEED</td>
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<td><strong>Morning Tea</strong></td>
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<td></td>
<td>• Energy Audits and Benchmarks</td>
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<td>• Energy audit standards, levels and methods</td>
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<td>• Energy audit process and key performance indicators</td>
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<td>• Energy data collection and data analysis</td>
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<td>• Common energy conservation opportunities</td>
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<td>• Benchmarks and recommendation options for energy saving actions</td>
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<td>• Case studies</td>
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<td><strong>Lunch</strong></td>
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<td>• Introduction to life cycle energy assessment</td>
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<td>• Impact of human factors on building energy consumption</td>
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<td><strong>Afternoon Tea</strong></td>
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<td></td>
<td>• Case studies of energy audits for commercial buildings</td>
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<td>5:00 pm</td>
<td><strong>Conclusion Day 1</strong></td>
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### Day 2

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<tr>
<th>Time</th>
<th>Topic</th>
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<tr>
<td>9:00am</td>
<td><strong>Start Day 2</strong></td>
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<tr>
<td></td>
<td>• Introduction to Measurement and Verification (M&amp;V) of energy savings for commercial buildings</td>
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<td></td>
<td><strong>Morning Tea</strong></td>
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<td></td>
<td>• Case studies of measurement and verification of energy savings for commercial office buildings</td>
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<td></td>
<td><strong>Lunch</strong></td>
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<td>• Case studies of energy savings for existing and new-build commercial buildings</td>
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<td><strong>Afternoon Tea</strong></td>
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<td>• Energy Management System Auditing</td>
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<td>• Introduction to ISO 50001</td>
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<td>• Interactive discussions and problem solving</td>
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<td>4:30 pm</td>
<td><strong>Conclusion Day 2</strong></td>
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### TRAINING INVESTMENT

The course investment provides for an inclusive industry related training package with course notes, lunches and morning and afternoon tea. Course fee per person is AUD$980 including GST. Participants may count course hours towards their CPD requirements.

### ABOUT THE SPEAKERS

**Professor Paul Cooper** is the Director of the Sustainable Buildings Research Centre and a Professor in the Faculty of Engineering and Information Sciences at the University of Wollongong.

**Dr Zhenjun Ma** is a Lecturer in the Sustainable Buildings Research Centre at the University of Wollongong. His areas of research interests are building energy efficiency, performance assessment and low energy technologies.

**Industry Speakers** will be invited to provide case studies and practical experience of energy efficiency improvement projects. Details of speakers to be announced in due course.

### THE VENUE

The course will be held at the Sustainable Buildings Research Centre, Building 237, University of Wollongong Innovation Campus, Squires Way, North Wollongong.

### ACCOMMODATION

Arrangements for accommodation are the responsibility of participants and costs are not included in the course fee. A list of hotels and motels in the Wollongong area will be supplied to participants upon registration. Daily travel from Sydney is convenient by road or train.

### ENQUIRIES

Registration enquiries:
Please contact **Mrs Robyn Dawson** at the Sustainable Buildings Research Centre, University of Wollongong.
Phone: (02) 4239 2198
Email: rdawson@uow.edu.au

Course enquiries:
Please contact **Prof Paul Cooper** at the Sustainable Buildings Research Centre, University of Wollongong.
Phone: (02) 4221 3355
Email: pcooper@uow.edu.au
Please enrol me in the two-day course “Energy Auditing and Decarbonisation of the Built Environment”, to be held in Wollongong from (Date TBC) September 2015.

Cost per person: AUD$980 inclusive of GST. Please register before … August 2015 (see note below).

Surname: ..............................................................................................................
Given Name: ...........................................................................................................
Organisation: ...........................................................................................................
Job title/position: ...................................................................................................
Postal Address: ......................................................................................................
State: .............................................................. Postcode: ........................................ Country:
Telephone: ...........................................................................................................
Fax: .........................................................................................................................
Mobile: ....................................................................................................................
Email: .....................................................................................................................
Special dietary requirements: ..................................................................................

PRE-COURSE QUESTIONNAIRE
To assist us to tailor the course to your experience, please answer the following (circle the appropriate weighting).

My knowledge in the field of energy efficiency in commercial buildings is: 1 2 3 4 5

My project experience in the field of energy efficiency in commercial buildings is: 1 2 3 4 5

My organisation’s objectives in the field of energy efficiency in commercial buildings are: 1 2 3 4 5

My organisation’s project experience in the field of energy efficiency in commercial buildings is: 1 2 3 4 5

My engineering or other professional discipline is: ..........................................................................................................................

METHODS OF PAYMENT

☐ If paying by credit card, please complete the details below, scan and email to robyn_fumini@uow.edu.au

Please debit (circle): Bankcard Visa Mastercard

Card number: □ □ □ □ - □ □ □ □ - □ □ □ □ - □ □ □ □

Expires: □ □ / □ □ in the amount of

AUD$: ........................................................................................................................

Name on card: ........................................................................................................

Signature: ............................................................................................................... EMAIL FOR RECEIPT:

☐ Cheque payable to “The University of Wollongong”

Mail to: Attention: Mrs Robyn Dawson
SBRC Administration Officer
Sustainable Buildings Research Centre
University of Wollongong, NSW, 2522, Australia

Payment Enquiries: Mrs Robyn Dawson
Ph: (02) 4239 2198
Email: rdawson@uow.edu.au

Note: There is no guarantee that economic participation levels for this course can be achieved. Registrants will be notified on the … August 2015 if the course cannot proceed due to insufficient numbers. The program may be changed at any time due to unforeseen circumstances. If the course cannot proceed for any reason, UOW will not accept liability of whatsoever kind for expenses incurred by any person or corporation with the sole exception of the course investment, which will be refunded in full.

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