



4th Training Module

Urban Scale Physical Modelling

University of Nottingham

Nottingham, UK

01st – 09th October 2015

AGENDA

Project Coordinator:	Dr. Ursula Eicker HFT University of Applied Sciences - Stuttgart
Training Module Responsible Parties:	Dr. Darren Robinson University of Nottingham
Partners (full and associated):	HFT Stuttgart (GER), EDF/EIFER (GER), EPFL (CH), IES (UK), NOTT (UK), Canton of Geneva (CH), SIEMENS (GER), POLITO (IT), UCD (IRE), AIT (AUS), WIENE (AUS), TUW (AUS), City of Vienna (AUS)

Supported by European Commission, Seventh Framework Programme of the European Community for Research, Technological Development and demonstration Activities, Marie Curie Actions- Initial Training Networks (ITN).

Contract no: 606851



Thursday, 01st October 2015

Location: B2 The Helmsley

Management Meeting & Research Presentation

Leaders: All fellows

Time	Responsible	Topic
08:30 – 09:00	HFT	24-month Management review and Midterm Prep
09:00 – 09:40	Giorgio Agugiaro	ER 3 (AIT) Vienna Case Study: Status Report (20 minutes) <ul style="list-style-type: none">• Mid-term Progress Report, results and timeline Question/ Answer session (20 minutes)
09:40 – 10:20	Mario Potente Prieto	ESR 06 (TUW) District Heating Simulation and Heat Pumps (20 minutes) <ul style="list-style-type: none">• Mid-term Progress Report, results and timeline Question/ Answer session (20 minutes)
10:20 – 10:30		Coffee Break
10:30 – 11:10	Giovanni Tardioli	ESR 05 (IES) Prediction of building energy use in urban case studies using data driven approaches (20 minutes) <ul style="list-style-type: none">• Mid-term Progress Report, results and timeline Question/ Answer session (20 minutes)
11:10 – 11:50	Solène Goy	ESR 10 (UCD) Estimating Demand Response Potential in Building Clusters (20 minutes) <ul style="list-style-type: none">• Mid-term Progress Report, results and timeline Question/ Answer session (20 minutes)
12:00 – 13:00		Lunch
13:00 – 13:40	Georgios Kazas	ESR 09 (POLITO) A methodology for hourly energy demand profiles generation at district scale (20 minutes) <ul style="list-style-type: none">• Mid-term Progress Report, results and timeline Question/ Answer session (20 minutes)
13:40 – 14:20	Pilar Monsalvete Álvarez-Uribarri	ESR 07 (HFT) Physical modelling of energy systems at urban scale(20 minutes) <ul style="list-style-type: none">• Mid-term Progress Report, results and timeline Question/ Answer session (20 minutes)
14:20- 14:40		Coffee Break
14:40 – 15:20	Ana Sancho Tomás	ESR 11 (UNOTT) On the electrical autonomy of urban districts – modelling the use of appliances in homes (20 minutes) <ul style="list-style-type: none">• Mid-term Progress Report, results and timeline Question/ Answer session (20 minutes)

15:20 – 16:00	Parag Wate	ESR 03 (HFT) 3D GIS for Urban Energy Demand Modelling (20 minutes) <ul style="list-style-type: none"> • Mid-term Progress Report, results and timeline Question/ Answer session (20 minutes)
16:00 – 16:40	Jean-Loup Robineau	ER 2 (EPFL) Geneva Case Study Database and Urban Optimisation (20 minutes) <ul style="list-style-type: none"> • Mid-term Progress Report, results and timeline Question/ Answer session (20 minutes)
16:40- 17:20	Preston Rodrigues	ER 1 (HFT) Dynamic Building Simulation: A Webservice Approach (20 minutes) <ul style="list-style-type: none"> • Mid-term Progress Report, results and timeline Question/ Answer session (25 minutes)
17:20- 17:30		<i>Comments, Cclosing remarks. Close of Day I</i>
19:00 –		Welcome Dinner Candidates: Hand in Heart – Derby Road, Nottingham http://www.thehandandheart.co.uk/food/main-menu/



Friday, 02nd October 2015

Location: B2 The Helmsley

MidTerm Review & Research Presentation

Leaders: Uof N, HFT, all fellows

Time	Responsible	Opic
08:30 – 09:15	Scientific Officer/ HFT	<ul style="list-style-type: none"> • Midterm Review • European Commission Scientific Officer Introduction • Overview of CINERGY Project Scientific and Management progress
09:15	ESR 1	All fellows present 5-6 Minute Project Snapshot to Scientific Officer, followed by short feedback (10 mins total)
09:25	ESR 2	
09:35	ESR 3	
09:45	ESR 4	
09:55	ESR 5	
10:05	ESR 6	
10:15	ESR 7	
10:25		Coffee Break
10:40	ESR 8	
10:50	ESR 9	
11:00	ESR 10	
11:10	ESR 11	
11:20	ER 1	
11:30	ER 2	
11:40	ER 3	
11:40-12:00		Scientific Officer general comments
12:00-13:00		Lunch
13:00-14:00		Scientific Officer Discussion with all Fellows (closed door)
14:00-14:15		Scientific Officer final remarks.
14:15-14:30		Coffee Break
14:30-15:10	Nils Schüler	<p>ESR 04 (EPFL) Optimization of Urban Energy Systems bridging spatial scales (20 minutes)</p> <ul style="list-style-type: none"> • Mid-term Progress Report, results and timeline <p>Question/ Answer session (20 minutes)</p>

15:10-15:50	Kunpeng Wang	<p>ESR 02 (AIT) Integration Platform For Urban Energy (20 minutes)</p> <ul style="list-style-type: none"> • Mid-term Progress Report, results and timeline <p>Question/ Answer session (20 minutes)</p>
15:50 – 16:10		Coffee Break
16:10 – 16:50	Sebastien Cajot	<p>ESR 01 (EDF/EIFER) Urban energy system planning: a decision support methodology (20 minutes)</p> <ul style="list-style-type: none"> • Mid-term Progress Report, results and timeline <p>Question/ Answer session (20 minutes)</p>
16:50–17:30	Nina Solomakhina	<p>ESR 08 (SIEMENS) Modeling and Analysis of Multimodal utility networks (20 minutes)</p> <ul style="list-style-type: none"> • Mid-term Progress Report, results and timeline <p>Question/ Answer session (20 minutes)</p>
17:30 - 17:45		Close of Day 2
19:00 –		<p>Ghost Tour</p> <p>Details to be provided by Darren R.</p>

Saturday, 03rd October 2015

Starting Point: University Park (ABE (Architecture and Built Environment) Car Park)

Leader: Darren Robinson

- Bus to pick up around 8:30am from UP, arriving back at 8:30pm.
- 5 hour hike in the Peak District National Park
- Packed lunch in grounds of Chatsworth House
- Pub for early evening meal.

08:30 - Pick up from Lenton Hall Drive, Car Park for Architecture and Built Environment, University Park

Drop off – Grindleford (by Saint Helen's Church) - 1 Main Road, Hope Valley.

19:00 – Pick up from Grouse and Clarlet Pub (Station Road, Rowsley, Derbyshire, DE4 2EB)

Drop off - Lenton Hall Drive, Car Park for Architecture and Built Environment, University Park

Monday, 05th October 2015
Co-simulation + energy economics

Location: B37 Portland Building
Theory and Foundations
Leaders: HFT, AIT, UNOTT

Time	Responsible	Topic
09:00 – 09:45	Romain Nouvel (HFT)	How to Validate / Calibrate Energy Use Simulations at the Urban Scale
09:45 – 10:45	Kunpeng Wang	Introduction of FMI co-simulation standards and FMI-compliant wrappers development
10:45 – 11:00		<i>Coffee Break</i>
11:00 – 12:15	Edmund Widl (AIT)	Co-Simulation, Electrical Networks and Building Interfaces
12:15 – 13:30		<i>Lunch</i>
13:30 – 14:00	Ruben Pastor-Vicedo	Nottingham's ESCO (Robin Hood Energy) and it's business model
14:00 – 15:45	Liz Hooper	Energy Economics
15:45 – 16:00		<i>Coffee Break</i>
16:00 – 17:30	Liz Hooper	Energy Economics
17:30 – 17:45		<i>Summary, Close of Day 3</i>
18:00		Inaugural Lecture: <i>Sustaining Complex City Systems</i> , by D. Robinson Keighton Auditorium, University Park

Tuesday, 06th October 2015
Data analytics + ABM

Location: B37 Portland Building
Theory and Foundations
Leaders: UNOTT

Time	Responsible	Topic
09:00 – 10:30	Ian Dryden (UNOTT)	Introduction to Time Series analysis and introduction to R
10:30-10:45		<i>Coffee break</i>
10:45-12:00	Ian Dryden	Time series analysis tutorial (hands-on session) – using R
12:00 – 13:30		<i>Lunch</i>
13:30 – 15:00	Peer-Olaf Siebers	Agent Based Modelling principles
15:00–15:15		<i>Coffee break</i>
15:15 – 17:00	Peer-Olaf Siebers	Anylogic PLE: ABM tutorial
17:00 – 17:15		<i>Conclusions, Close of Day 4</i>

Wednesday, 07th October 2015

Clustering + Optimisation

Location: B37 Portland Building

Theory and Foundations

Leaders: UNOTT

Time	Responsible	Topic
09:00 – 10:30	Daniele Soria	Clustering algorithms and classification techniques
10:30-10:45		<i>Coffee Break</i>
10:45 – 12:00	Daniele Soria	Clustering and classification tutorial – using R
12:00-13:30		<i>Lunch</i>
13:30-15:00	Dario Landasilva	Optimisation: MI(N)LP algorithms
15:00 – 15:30		<i>Coffee break</i>
15:30 – 17:00	Jason Atkin	Evolutionary algorithms
17:00–17:15		<i>Conclusions, Close of Day 5</i>

Thursday, 08th October 2015

Optimisation

Location: B37 Portland Building (am) / B27Energy Technologies Building (pm)

Theory and Foundations

Leaders: EPFL, UNOTT

Time	Responsible	Topic
09:00 – 10:30	Jean-Loup Robineau Nils Schüler	Osmose Workshop (EPFL)
10:30 – 11:00		<i>Coffee break</i>
11:00 – 12:30	Jean-Loup Robineau Nils Schüler	Osmose Workshop (EPFL)
12:30 – 14:00		<i>Lunch – move to Jubilee Campus</i>
14:00 – 15:00	Mark Sumner / RF	Optimisation algorithms for Demand Side Management – case study in UK
15:00 – 15:30		<i>Coffee break</i>
15:30 – 17.15	Mark Sumner	FlexElec Lab (Energy Technology Building) Tour (UofNott)
17:15 – 17:30		<i>Conclusions, Close of Day 6</i>

Friday, 09th October 2015
Training review and planning for Module 5

Location: B37 Portland Building

Leaders: ERs, UCD

Time	Responsible	Topic
09:00 – 10:45	ERs	EPIGEUM: ERs lead discussion of Modules XX Research Integrity (Engineering & Technology), 004 Getting published in the sciences, 002 Intellectual property in the research context. Planning: Organization of a Summer School
10:45 – 11:00		<i>Coffee Break</i>
11:00 – 12:30	Donal Finn /Skype HFT	Training Module 5: University College Dublin Suggested Dates: 12 – 20 May, 2016 Conclusions, next outreach activities, action items list, next meeting ideas, pictures
12:30		<i>Close of Meeting/ Lunch/ Departures</i>
12:45	2 fellows + URN	<i>Radio (urn) interview to 2 fellows</i>

Training Location: Nottingham, UK

Room planning	Date	Time	Location (Building/Room)
	Thursday 01. October 2015	08h30 - 18h00	B2 The Helmsley
	Friday 02. October 2015	08h00 - 18h00	B2 The Helmsley
	Monday 05. October 2015	08h00 - 18h00	B37 Portland Building
	Tuesday 06. October 2015	08h00 - 18h00	B37 Portland Building
	Wednesday 07. October 2015	08h00 - 18h00	B37 Portland Building
	Thursday 08. October 2015	09h00 - 12h30	B37 Portland Building
	Thursday 08. October 2015	14h00 - 18h00	B27 Energy Technology Building (Jubilee Campus)
	Friday 09. October 2015	08h00 - 14h30	B37 Portland Building

Wifi access:

- Eduroam connection
- UoN Guest connection

Contacts:

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Academic schools and departments (A-Z)

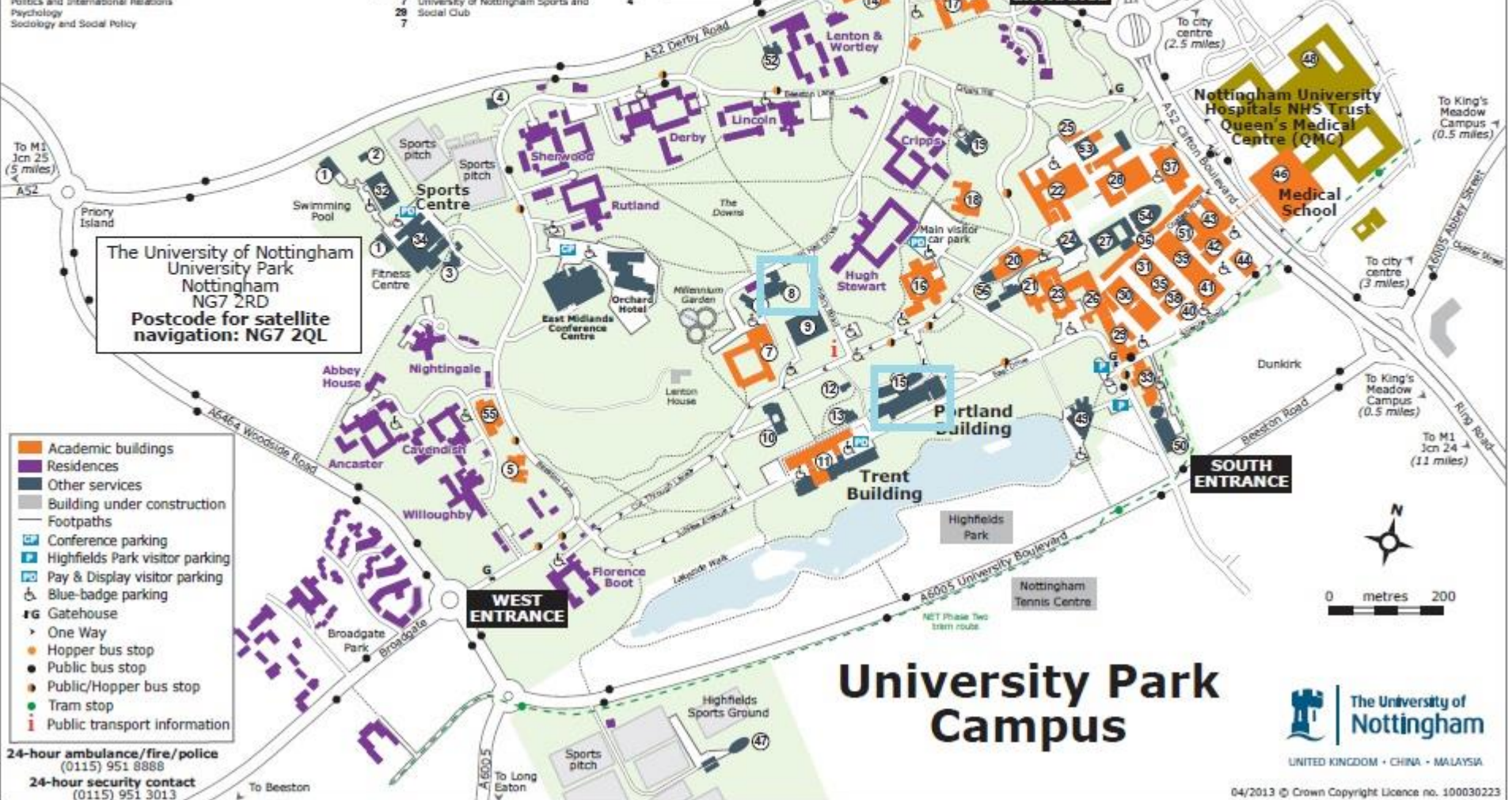
- Architecture and Built Environment
- Chemical and Environmental Engineering
- Chemistry
- Civil Engineering
- Cultures, Languages and Area Studies
- Economics
- Electrical and Electronic Engineering
- English Studies
- Geography
- Health Sciences
- Humanities
- Law
- Life Sciences
- Mathematical Sciences
- Mechanical, Materials and Manufacturing Engineering
- Medicine
- MRC Institute of Hearing Research
- Music
- Pharmacy
- Physics and Astronomy
- Politics and International Relations
- Psychology
- Sociology and Social Policy

Other services (A-Z)

- 14/17 Careers and Employability Service
- 28/30/31/38 Childcare Services
- 28 Coates Road Auditorium
- 31/35/38/38/41 Computing Services
- 11 Cripps Health Centre/Chemist/Dentist
- 18 Estates Office
- 37 Faith/Prayer Rooms
- 11 George Green Library
- 16 Graduate School
- 48/48 Greenfield Medical Library
- 6/32/55 Halward Library
- 7 Keston Auditorium
- 23/48 Language Centre
- 20 Museum
- 31/38/38/38/41/42 Nottingham New Theatre
- 37/48/48 Redtail Hall
- 40 Security Control
- 33 Sports
- 28/44 Student Services Centre
- 18/22/26 Students' Union/Retail/Food Court
- 7 University of Nottingham Sports and Social Club
- 28 Social Club
- 7

Named buildings (A-Z)

- 15/27 Boots Science Building
- 1/3 Centre for Biomolecular Sciences
- 61 Coates Building
- 53 Engineering Science Learning Centre
- 19 Highfield House
- 21 Innovative Technology Research Centre
- 16 Lakeside Arts Centre
- 24 Lenton Elvas
- 10 Lenton Fields
- 48 Lenton Grove
- 9 Lenton Hurst
- 58
- 60
- 11
- 12
- 33
- 11
- 33
- 16
- 16
- 4
- 44 Lenton Lodge
- 43 Pavement Research Building
- 36 Pope Building
- 54 Sir Clive Granger Building
- 10 Sir Peter Mansfield Building
- 18
- 8
- 8
- 37 Tower Building
- 4 Vaughan Parry Williams Pavilion
- 6 Wilson Building
- 62
- 2
- 36
- 27
- 18
- 18
- 10
- 8
- 8
- 37
- 47
- 41



The University of Nottingham
University Park
Nottingham
NG7 2RD
Postcode for satellite
navigation: NG7 2QL

University Park Campus



UNITED KINGDOM • CHINA • MALAYSIA

24-hour ambulance/fire/police
(0115) 951 8888
24-hour security contact
(0115) 951 3013

Important information

Directions to and from University Park Campus

From Nottingham (approximately 3 miles)

By public bus services:

There are a number of public services that run close to or through our campuses.

[Further details on public bus services to The University of Nottingham.](#)

By taxi:

There are taxi ranks throughout the City Centre and immediately adjacent to the main railway and bus stations. The journey to the campus takes about 15 minutes.

From Beeston (approximately 1.5 mile)

For University Park campus, the bus stop closest to the train station is 'Beeston Rylands, adj Laburnum Grove' (on Meadow Road) for Trent Barton's [route 18 service](#).

Alternatively, the more frequent [Indigo](#) service operated by Trent Barton goes from 'Beeston (Notts), opp Queens Road' (on Station Road) – a 5 minute walk from the train station.

From East Midlands Airport (approximately 10 miles)

From East Midlands Airport you can take the [Skylink](#) service, run by Trent Barton, towards the City Centre. Buses leave from outside the Airport Arrivals hall. <https://www.trentbarton.co.uk/services/skylinknottingham>

You can also walk to the taxi rank on the terminal forecourt and take a direct taxi to the University. The cost of a single/one way journey is approximately £20. Taxis are normally available 24 hours.

From M1 motorway:

By car:

Leave the M1 motorway at Junction 25 to join the A52 to Nottingham. Turn right at The Priory roundabout (about 4 miles from M1), then left at next roundabout to enter the University's West Entrance.

Car parking on campus:

Visitors to the University will be required to use the pay and display facilities.

Parking charges for 2014/15 are:

- Up to 30 minutes (free)
- 2 hours (£3.00)
- 4 hours (£5.00)
- All day (£7.00)

Restrictions will apply in some locations.

[Using satellite navigation?](#)

When driving to University Park Campus via satellite navigation, please use **NG7 2QL** as the postcode.

[Accommodation and travel](#)

Hotels we can recommend in the local area:

[Holiday Inn](#)

[Address](#)

Castle Marina Park
Castle Bridge Rd
Nottingham
NG7 1GX

t: 0115 993 5000

[Holiday Inn Express Nottingham City Centre](#)

[Address](#)

7, Chaper Quarter
Chapel Bar
Nottingham
NG1 6JS

t: 0115 941 9931

[Orchard Hotel*](#)

[Address](#)

University Park
University of Nottingham
Beeston Lane
NG7 2RD

t: 0115 876 0851