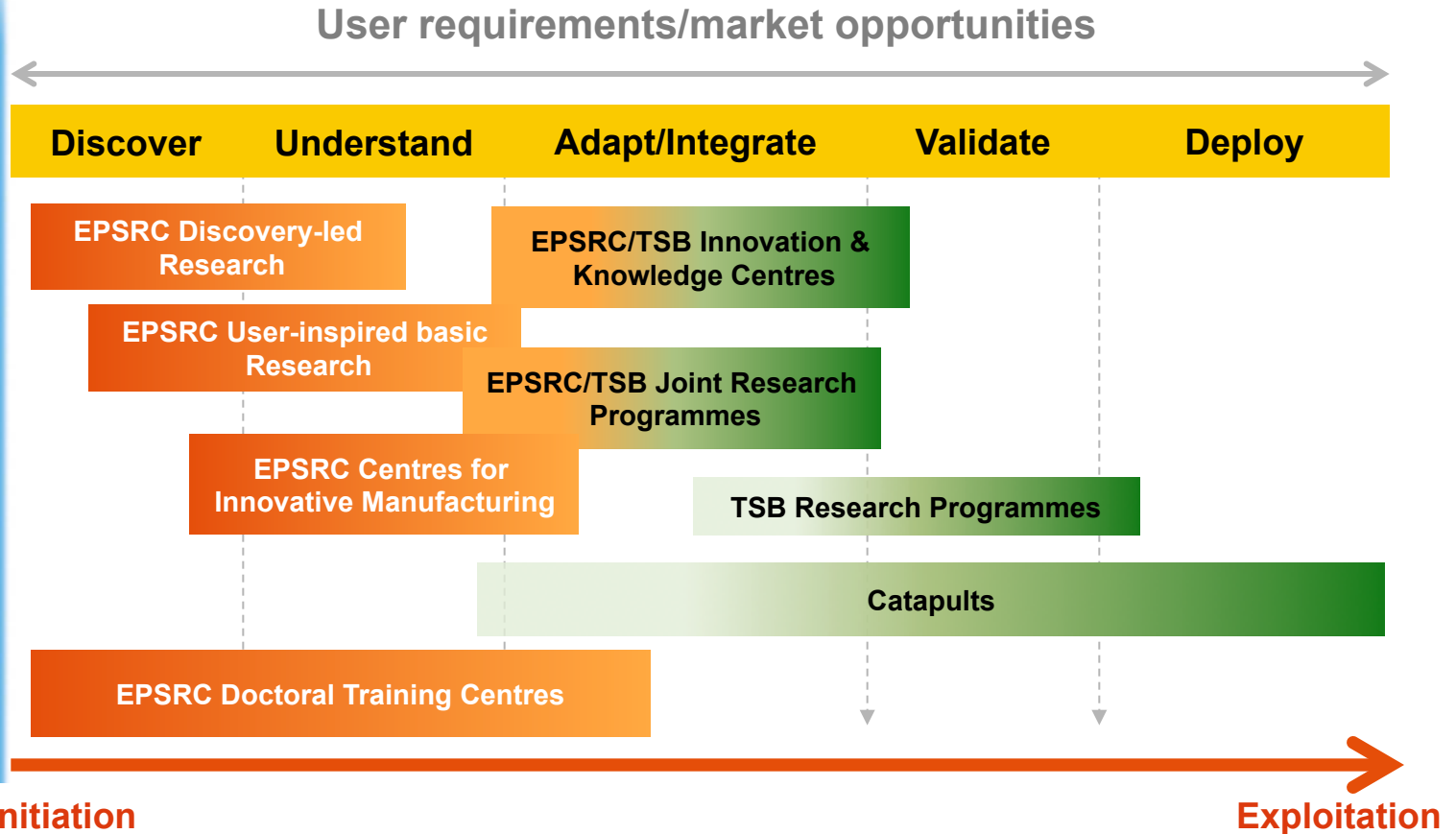


EPSRC Landscape

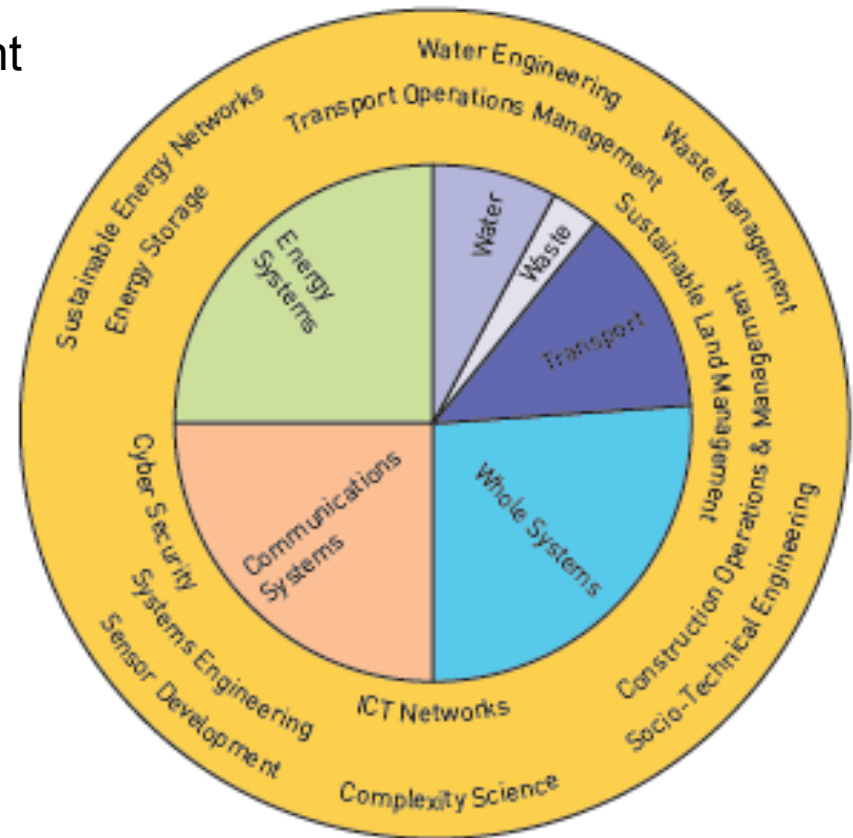
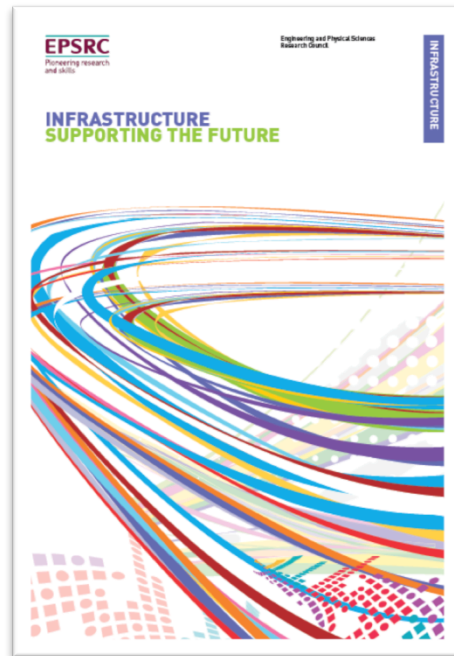


EPSRC, INNOVATION & IMPACT



Infrastructure research across EPSRC

High Level Position Statement



Infrastructure topics (outer circle) and their relevance to other sectors (centre). Total investment £350 million

National Infrastructure for the Future

“EPSRC supports research and postgraduate training for a reliable, safe and resilient national infrastructure supplying water, energy, communications, transport systems and waste – essential to society and the economy”

■ Knowledge for the future:

■ We support a world leading portfolio including: water engineering; systems engineering, sustainable energy networks, cyber security, ICT networks, construction operations management, transport operations, complexity science

■ Current investment worth £350M

■ Skills for the economy:

■ 21 new Centres for Doctoral Training

■ Partnerships for growth:

■ Partnerships with 694 organisations – utility companies, large and small businesses, local authorities, town planners and charities – leveraging over £105 million

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EPSRC IS A CRITICAL PARTNER

Recent & Significant Investments

- Infrastructure Business Model Centres with ESRC
 - i-Build
 - International Centre for Infrastructure Future (ICIF)
- Flooding and Coastal Erosion Risk Management Network (FCERM_Net)
- UK Droughts and Water Scarcity Call with NERC,BBSRC,AHRC,ESRC
- Institute in Trustworthy Industrial Control Systems with CPNI
- Transforming Energy Demand through Digital Innovation Network (TEDDINet)
- End Use Energy Demand Centres
- Liveable Cities
- Infrastructure Transitions Research Consortium (ITRC)
- ARCC & SUE Programmes Projects

Details of Grants/Partners/Impact

EXPLORE OUR PORTFOLIO



Find people, outcomes and connections by searching our portfolio of internationally excellent research and training.

- Visualising our Portfolio (VoP) [↗](#)
- Gateway to Research (GtR) [↗](#)
- Grants on the Web (GoW) [↗](#)

The screenshot shows the EPSRC Grants on the Web homepage. The header includes the EPSRC logo and navigation links. The main content area is titled 'Grants on the Web' and contains a welcome message, a brief description of the service, and a list of links to various resources.

Grants on the Web

Welcome to the EPSRC Grants on the Web facility which provides information about research and training grants supported by EPSRC.

The Engineering Research Council currently is no longer involved in Grants on the Web, as this facility is now available through the Research Councils UK. If you want to comment on the Research Councils UK website, please post your comments on the RCUK Discussion Forum. For other queries about it, please contact the RCUK Helpdesk.

Please note that Grants on the Web is a dynamic tool and the information is updated accordingly. Therefore, while the data displayed is as accurate and up to date as possible, care should be taken when making conclusions with static data held elsewhere on the EPSRC website.

Where researchers have provided RCUK with the data for any grant, past or current, Grants on the Web now displays the available information describing the key findings as well as a summary of key impact (if available) in more accessible, concise, relevant sections and a UK impact focus to more detailed information.

The available resources are listed below:

- **Grant Portfolio**
Gives information about the award number and award profile. Customisation on the current system will allow restricted search capability. Allows current EPSRC funding to be examined by research area and topic, industrial relevance (sector), and geography.
- **Researcher**
Gives a list of all funded research areas.

Grants on the Web

The screenshot shows the Gateway to Research homepage. The header includes the Research Councils UK logo and navigation links. The main content area is titled 'Gateway to Research' and contains a welcome message, a brief description of the service, and a search bar.

Gateway to Research

Welcome to the RCUK gateway to publicly funded research
Search for and analyse information on the latest innovative research in the UK

Search with a keyword here

Search Go

Gateway to Research

www.epsrc.ac.uk/vop/

Coming 12th June

Developing Leaders – Doctoral Training



The total **number of Centres for Doctoral Training is now 115** which have total combined governmental and partner funding of **£962 million**, including £31 million or capital investments

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Training

EPSRC Centre for Doctoral Training in **High Performance Embedded and Distributed Systems**, Imperial College London

EPSRC Centre for Doctoral Training in **Digital Civics**, Newcastle University

EPSRC Centre for Doctoral Training in **Urban Science and Progress**, University of Warwick

EPSRC Centre for Doctoral Training in **Energy Demand (LoLo)**, UCL

EPSRC Centre for Doctoral Training in **Carbon Capture and Storage and Cleaner Fossil Energy**, University of Nottingham

EPSRC Centre for Doctoral Training in **Power Networks** at The University of Manchester, The University of Manchester

EPSRC Centre for Doctoral Training in **Bioenergy**, University of Leeds

EPSRC Centre for Doctoral Training in **Renewable Energy Marine Structures (REMS)**, Cranfield University

EPSRC Centre for Doctoral Training in **Energy Storage and its Applications**, University of Sheffield

EPSRC Centre for Doctoral Training in **Future Power Networks and Smart Grids - A Partnership between the University of Strathclyde and Imperial College, London**

EPSRC Centre for Doctoral Training in New and **Sustainable PV**, University of Liverpool

EPSRC Centre for Doctoral Training in **Wind and Marine Energy Systems**, University of Strathclyde

EPSRC Centre for Doctoral Training in **Engineering for the Water Sector (STREAM IDC)**, Cranfield University

EPSRC Centre for Doctoral Training in **Water Informatics: Science and Engineering (WISE)**, University of Exeter

EPSRC Centre for Doctoral Training in the **mathematics of planet Earth** at Imperial College London and the University of Reading

EPSRC Centre for Doctoral Training in **Future Infrastructure and Built Environment**, University of Cambridge

EPSRC Centre for Doctoral Training in **Mathematics for Real-World Systems**, University of Warwick

EPSRC Centre for Doctoral Training in **Sustainable Civil Engineering**, Imperial College London

EPSRC Centre for Doctoral Training in **Sustainable Infrastructure Systems**, University of Southampton

EPSRC and ESRC Centre for Doctoral Training in **Quantification and Management of Risk & Uncertainty in Complex Systems & Environments**, University of Liverpool

EPSRC Centre for Doctoral Training in **Decarbonisation of the Built Environment**, University of Bath



More Information

- **Atti Emecz**, Director, Strategy & Business Relations
 - **Robert Felstead**, Senior Manager for Infrastructure and the Environment
 - **Alex Broomsgrove**, Portfolio Manager Built Environment, Sustainable Land Management and Transport Operations and Management
- **Roger Singleton-Escofet**, Portfolio Manager Ground and Structural Engineering
 - **Steven Miles**, Portfolio Manager, Water Engineering
 - **Lucy Martin**, Portfolio Manager, Resource Efficiency
- **EPSRC Website:** <http://www.epsrc.ac.uk/Pages/default.aspx>
 - **EPSRC Email Alert:** <http://www.epsrc.ac.uk/funding/calls/emailalert/Pages/emailalert.aspx>
 - **ARCC Coordination Network:** <http://www.arcc-network.org.uk/>





Additional Slides



Adaptation and Resilience to Climate Change (ARCC)

- brings together a range of research projects which look at the impacts of climate change and possible adaptation options in the built environment and its infrastructure including water resources, transport systems, telecommunications, energy and waste.

Coordination Network: Dr Roger Street, University of Oxford.

UK Infrastructure Transitions Research Consortium

- an interdisciplinary research programme on the long term dynamics of interdependent infrastructure systems - including energy, transport, water, waste, information and communications.
- Aims to inform the analysis, planning and design of national infrastructure, through the development and demonstration of new decision support tools

Director – Prof Jim Hall, University of Oxford



Sustainable Urban Environments Programme

- A £45M programme or research looking at ways of improving sustainability in the urban environment.
- Has funded **30** consortia in different areas including waste, water management, transport planning and strategy, spatial planning, regeneration and stakeholder engagement.
- **SUE:ISSUES** – (Implementation Strategies for Sustainable Urban Environment Systems) is the knowledge transfer arm of the SUE programme
<http://www.urbansustainabilityexchange.org.uk/>



Projects supported:

Land of the MUSCo's

Establishing a framework for Multi-utility Service provision



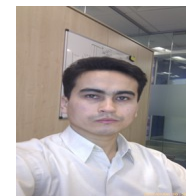
Undermining Infrastructure

Characterising the materials barriers to delivering low carbon infrastructure



All-in-One

Investigating the feasibility of supplying all services using one utility



Shock (Not) Horror

To explore trauma as an allegory for infrastructure system shock



Transforming Utility Conversion Points

Exploring how new paradigms in the interaction between the service points rationalize service delivery and reduce inefficiencies



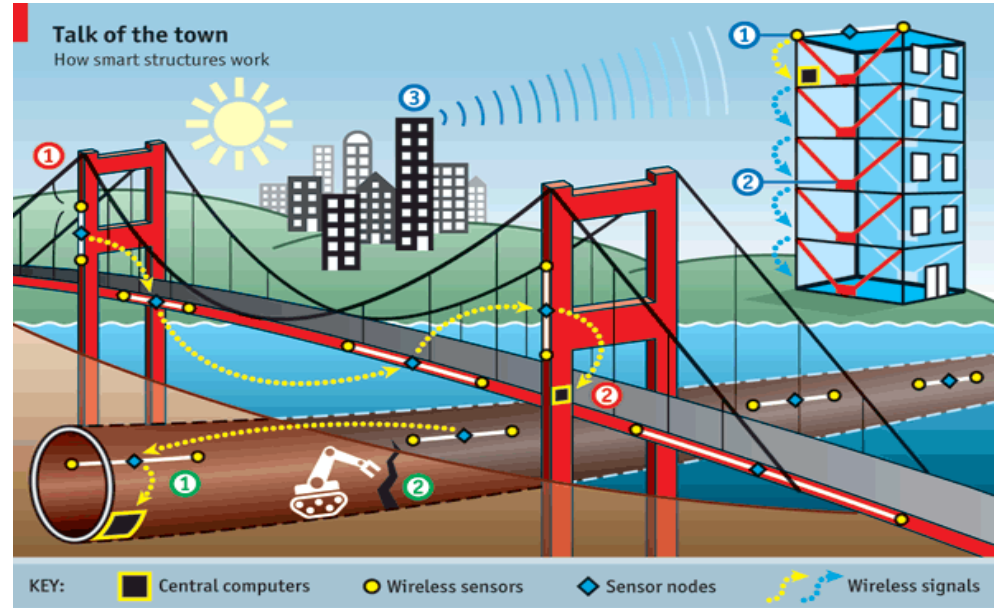
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SMART INFRASTRUCTURE IKC

Professor Robert Mair - University of Cambridge

- Construction largest employer in the UK, 10% of GDP, turnover £100BN
- Estimated spend of £400BN on new and existing infrastructure by 2020 – speed transition to a low carbon economy
- Innovation and Knowledge Centre on Smart Infrastructure and Construction – Robert Mair University of Cambridge
- EPSRC/TSB £10M investment
- £7M from Industry partners – including Laing O'Rourke, Mott MacDonald, Skanska, Costain...



Sustainable Urban Environments Programme

Third round of SUE funding:

*...to seed and support significant new research directions, by focussing on identifying and addressing the grand challenges associated with **integration and connectivity across different spatial and temporal scales** within the urban environment to deliver sustainability*

*...to support research activities that are **truly forward looking and focused on the Sustainable Urban Environment of 2050***



Sustainable Urban Environments Programme

- Challenging lock-in in urban energy systems (CLUES) - *Prof Y Rydin, University College London*
- Re-Engineering the City 2020-2050: Urban Foresight and Transition Management - *Prof M Eames, Cardiff University*
- Sustainable transport evidence and modelling paradigms: cohort household analysis to support new goals in engineering design (STEP-CHANGE) - *Dr M Tight, University of Leeds*
- Self conserving urban environments (SECURE) - *Prof M Bell, University of Newcastle*



Working with Industry: 'Achieving Adaptable Assets: Sustainable Integrated Infrastructure' sandpit

How can we design our assets to be adaptable to future, as yet unknown, needs?

Director:

- **Nick Tyler (UCL)**

Mentors:

- **Jennifer Schooling** (Arup)
- **Tim Broyd** (Halcrow)
- **Jim Hall** (Newcastle/Oxford)
- **Jim Norton** (Independent)

Keynote speaker:

Prof Brian Collins, CSA for BIS & DfT

Stakeholders:

Chris Cooper, **IBM**

David Fidler, **National Grid**

Peter Ball, **BRE**

Ben Kidd, **CIRIA**

Mike Shepherd, **UKWIR**

Alan Wyatt, **Kimberly Clark**

John Lane, **RSSB**

Ed Metcalf, **IfS**

Paul Richards, **Network Rail**

(Tim Embley, **Costain** – unable to attend)

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Living with Environmental Change Programme

To ensure that decision-makers in government, business and society have the knowledge, tools and foresight to mitigate, adapt to and benefit from environmental change

Living With Environmental Change



Arts & Humanities
Research Council



BBSRC
bioscience for the future



Communities
and Local Government



DEPARTMENT OF
ENERGY
& CLIMATE CHANGE



defra
Department for Environment
Food and Rural Affairs



DFID
Department for
International
Development



DH
Department
of Health



Department for
Transport



Environment
Agency



EPSRC

Engineering and Physical Sciences
Research Council



E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL



Forestry Commission



Local Government Association



MRC
Medical
Research
Council



Met Office



NATURAL
ENGLAND



NATURAL
ENVIRONMENT
RESEARCH COUNCIL



NIEA
Northern Ireland
Environment
Agency



The Scottish
Government



SEPA
Scottish Environment
Protection Agency

Technology Strategy Board
Driving Innovation



Uywodraeth Cynulliad Cymru
Welsh Assembly Government

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LWEC brings together 22 UK organisations funding, undertaking and using environmental research

Other Cross-Council activities



- Energy Hubs eg:
 - SUPERGEN



- Digital Economy Hubs etc eg:
 - Digital City Exchange



- Global Uncertainties
 - Cybersecurity

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