



*This project is co-financed by the European Union
and the Republic of Turkey*



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Description of the Organisation



The University of Salford has a rich history of innovation and is separated into three colleges (College of Science and Technology, College of Arts and Social Sciences, and College of Health and Social Care) containing 10 individual schools.

The School of the Built Environment (SoBE) is one of the three schools in the College of Science and Technology. The College of Science & Technology offers a wide range of undergraduate and postgraduate degrees in computing, engineering, built environment and environmental and life sciences. Our research is organized through four strategic interdisciplinary themes - '**Built Environment**', '**Energy**', '**Health and Well-being**', '**Media, Digital Technology & the Creative Economy**'.

As one of the largest Built Environment schools in UK, we have today some 70 active research staff, very many of whom are internationally recognized leaders in their field. We also have some 240 PhD students from around the world undertaking research programmes with us. Our Built Environment research has been recognized as number 1 for “research power” in UK, a position held since 1992 (source: Research Fortnightly Magazine 2008).

Considerable FP experience – some examples from the last 5 year



CoSpaces - Innovative Collaborative Work Environments for Individuals and Teams in Design and Engineering	31/05/2006	£858,788
Building Opportunities	31/07/2006	£122,185
Construction and BME	02/08/2006	£128,979
Constructing Women Leaders	02/08/2006	£80,448
Women in NW Construction SMEs	24/08/2006	£105,201
Mistra Pre-Research Project Sustainable Urban Development	30/03/2007	£23,000
CHANGING BEHAVIOUR - Contextualising behavioural change in energy programmes involving intermediaries and policymaking organizations working towards changing BEHAVIOUR	08/01/2008	£154,177
Cities and Sustainability - Urban Ecological Security: The new urban paradigm?	01/03/2008	£14,994
Save Energy	31/10/2008	£110,343
Internal mobility and integration in China and the European Union	09/04/2009	£1,267
Multi-Level Governance of Science and Innovation Policy, OECD Regional Review of Innovation: Catalonia, Spain	08/07/2009	£3,465
Bell Curve	22/09/2009	£237,337
VISIONAIR - VISION Advanced Infrastructure for Research	20/05/2010	£174,377
Commercial Local Urban District Programme (CLUDs)	09/12/2010	£122,413.29
SEEDS: Self learning Energy Efficient buildDings and open Spaces	23/06/2011	£29,983.60
Studying the potential of Applying Earned Value Mangement in the Spanish Construction Industry	06/07/2011	£2,336
ANDROID: Academic Network for Disaster Resilience to Optimise Educational Development	18/11/2011	£536,447

Description of your research interest



- Our School and College has considerable experience, expertise and interest in the following research areas
 - Computational and Generative Design
 - Building Information Modelling
 - Information Technology in Design & Construction
 - Urban Quality and Sustainable Design

Bridging: ICT, Built Environment, Sustainability

Description of our research proposal

**Factories of the Future (FoF) – NMP Topics (PPPs)
Cross-Thematic Coordination between NMP and ICT (SP)**



FP7 THEME: FoF-NMP-2013-9 Advanced concepts for technology-based business approaches addressing product-services and their manufacturing in globalized markets

TITLE

A Concurrent Engineering Model to Support Mass-Customization of Adaptable, High-Performance and Agile Buildings of the Future

The uniqueness of the construction sector poses several challenges for the direct adaptation of technologies that are used in many other industries, for example, those that support mass production and/or mass customization. Mass-customization, supported by the recent advances in direct digital manufacturing and their coupling with automated/computational design tools, and Building Information Models (BIM), offers enormous potentials to create tailored, agile, high-performance and low-cost buildings. The proposed research will investigate the potentials of “Mass-customization” to increase both product and process efficiencies in building industry..”

- Objectives:
 - To investigate the potentials of mass-customization as an efficient, economic and adaptable response to the growing demand of “ design variation” in building industry.
 - To identify the potentials of generative, computational and 3D modelling tools to support the design and production of customizable building products and systems.
 - To investigate the benefits of mass-customization in terms of user and stakeholder engagement as an integral part of design development.
 - To identify the changes in workflows and business models as will be required by the mass-customization of building products and systems.
 - To develop a new Concurrent (Design) Engineering method to support and facilitate Mass-Customization in Building Design/Production
- Expected results
 - A new Concurrent Design/Engineering framework that can be adopted and scaled to various design products and processes.
 - A prototype application using the proposed framework and its evaluation, which will lead to various applicability criteria of the proposed framework in various contexts..
 - Recommendations for the implementation of the proposed framework on a global scale.

Consortium - profile of potential partners



No	Partner Name	Type	Country	Role in the Project
01	Design Firm(s)	SME	UK	Testing and Consultancy
02	Engineering Firm(s)	SME	UK	Testing and Consultancy
03	BIM technology providers	RTD	UK	Providing Technical Infrastructure
04	Façade/Cladding Manufacturer(s)	IND	Italy, Germany	Previous Experience/Expertise
05				
06				
07				
08				

Consortium - required partners

No	Expertise	Type	Country	Role in the project
01	Digital Manufacturing	IND	?	Know-how and knowledge transfer
02	Advanced Manufacturing	IND	?	Advanced Manufacturing Processes
03	Advanced Materials	RTD,SME	?	Innovative Use of materials
04		?
05		?
06		?
07				
08				



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