adaptablefutures

Setting the agenda
www.adaptablefutures.com

Almudena Fuster
• Three years project (2007-2010)

• Funded by the UK Research Council (EPSRC) through Loughborough's Innovative Manufacturing & Construction Research Centre (IMCRC)

• Multidisciplinary team form by academics & researchers from Loughborough University & Industrial partners

• Aim: facilitate development of adaptable buildings
  – Through academic research & real-life application
  – Focusing on complex non-domestic buildings
OBJECTIVES

- Identify critical parameters for adaptable buildings
- Understand technological & human issues/barriers from actual & past examples
- Quantify the size and nature of the adaptable buildings market
- Analyse economics of adaptability
- Develop protocols & guidelines to support new technical & management processes
- Promote diffusion of these radical innovations
- Provide guidance to enable the cultural change necessary
LOUGHBOROUGH UNIVERSITY
Research Team

Civil & Building Engineering
Alistair Gibb
Simon Austin
Andrew Danty
Christine Pasquire
Almudena Fuster
Peter Madden
Katy Beadle
Seyi Odeyale
Anupa Manewa

Business School
Vicky Story
Jim Saker

INDUSTRIAL PARTNERS

NewWays
GlaxoSmithKline
BrydenWoodMcLeod

Multispace
3DReid
Buro Happold

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Reference Group

**Designers/consultants**
- Arup
- CABE
- DEGW
- Sheppard Robson
- Stubbs Rich

**Producers/contractors**
- Corus
- Mace
- Bailey
- Taylor Woodrow
- Terrapin

**Clients/developers**
- Development Securities
- DFES (Education & Skills)
- Savills
- Stanhope

**Industry Bodies**
- Buildoffsite
- CIRIA
- Constructing Excellence
- EMDA
- Charnwood BC

**Academic**
- MIT
- VTT
- I3CON
- Manubuild
- TU Delft
- TU Eindhoven

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The project is focussing on two major industry initiatives & working alongside industrial partners as GlaxoSmithKline, Bryden Wood McLeod, 3DReid architects and Buro Happold

• **Newways**
  – GSK’s pre-configuration strategy
  – Initial design choices/kit of parts

• **Multispace**
  – 3DReid’s concept
  – Life-cycle function changes
NEWWAYS

• Innovative way of designing, procuring & constructing
• 3 different facilities to produce a new drug
• Design & construction from 24 months to 13 weeks
Adaptables Futures will
Learn from Newways system & optimise configuration of components through matrix analysis
Multispace philosophy: design buildings to be able to change use

Grosvenor Place: design & built to be commercial or residential
Potential for vertical subdivision of tenants & uses around core.

Cores at perimeter of floor plate to allow additional lifts & risers to be inserted as required.

Plant packaged on roof or in basement with space for expansion as needed.

Cladding designed on a 1.5m or 3m wide by storey height module.

Variety of plan depths, single and double sided.

Potential for planted communal spaces.

Double height ground level zone for a variety of reception, retail & leisure uses.
Adaptable Buildings History

13th C. 18th/19th 1850 1949

Change of functions & needs
Materials & technology development

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Adaptable Buildings History

1956

1970

1976

2001
ADAPTABLE CASE STUDIES

CULTURAL/EDUCATIONAL
- Sainsbury centre for Visual Arts. Foster & Partners
- Mossbourne Community Academy. Rogers Stirk Harbour & Partners
- Department of Building & Civil Engineering, Loughborough University - Arup
- Terrapin Hire Fleet. West End College. London
- Warwick School. Myton road
- Clasp/Scape. Mary Elliott School, Walsall

OFFICES
- Customised office solution. 3DREID- Laing O'Rourke- Buro Happold
- Silk Street, London
- Chiswick park. R. Rogers & Partners

INDUSTRIAL
- Igus, Germany – Grimshaw & BWA Arch.
- Car park solution 3DREID- Laing O'Rourke- Buro Happold

RESIDENTIAL/HOTEL
- Georgian terraced houses
- Verbus system

MULTIFUNCTIONAL
- Halley VI. H. Browghton arch. - Faber Maunsill eng.
CASE STUDIES

Verbus modular system

Halley VI
THANK YOU

Workshop will take place today from 2.00 to 5.30 pm
“Adaptable buildings critical parameters. From small houses to big buildings“