



UNIVERSITY OF
WOLVERHAMPTON

School of Art & Design

School of Computing and IT

School of Applied Sciences

School of Engineering and Built Environment



Concept Plan

Emerald Green

Art & Design for the 21st C

Creative intent and interdisciplinary commitment to new design and appropriate technology

EG Project Rationale

The challenge: In the 21st century we are rapidly moving away from the era of available raw materials, cheap energy and cost free sinks for waste – into a post industrial condition of new responsibilities and challenges.

- population stress
- energy stress
- environmental stress
- climate stress
- Leading to increased economic stress, and ever-widening income gaps

EG Project Context

Problem:

MK 7 story Building 50 yr retrofit w attention to sustainable design: internal lighting, heating-cooling, related CO2, and external air quality, water quality and biodiversity.

Opportunity:

Estimated cost of retrofit (£3M) is suitable EU match. 7-10 year applied research & capital investment proj.

Need for Agreement:

Require UW Executive and Facilities agreement.

EG Project Description

HOW:

Proposed Actions:

1. Change the culture – lecture, symposia, conference
2. Initiate a rigorous audit w research and applied research
3. Leverage Capital Investment in a ‘demonstrator project’
4. UK knowledge transfer initiative.

A Green Beacon

A long-term green design initiative (SAD, SAS, SEBE, SCIT, IIE)

A demonstrator project relevant to new science building and I54 development

EG Concept Plan

Pave the way:

- i. Develop EU/UK network design, policy, regulation and industry
- ii. Discussions w experts and industry to clarify current knowledge

Design Charrette:

- iii. Final review of local policy, regulation and industry
 - iv. MK material analysis and best technologies and practices
 - v. Architectural programme analysis for best test sites
 - vi. Four expert interior/exterior design teams
- One expert policy, regulation and funding for green design team.

Outcome:

Published charrette outcomes, experiment & industry plans

EG Retrofit

Testbed: Four to six interior/exterior areas are identified for experimental retrofit, attending to similar (aggressive) sustainable design targets and industrial product development w/in the context of cost efficient installation, minimal disruptions and user satisfaction. Case studies developed over 24 months to inform final MK design/technical specification and potential for replicability.

Showcase: Multipartner investment in showcase retrofit of MK.

Outcome:

Complete high rise redesign and retrofit for 21st C sustainability

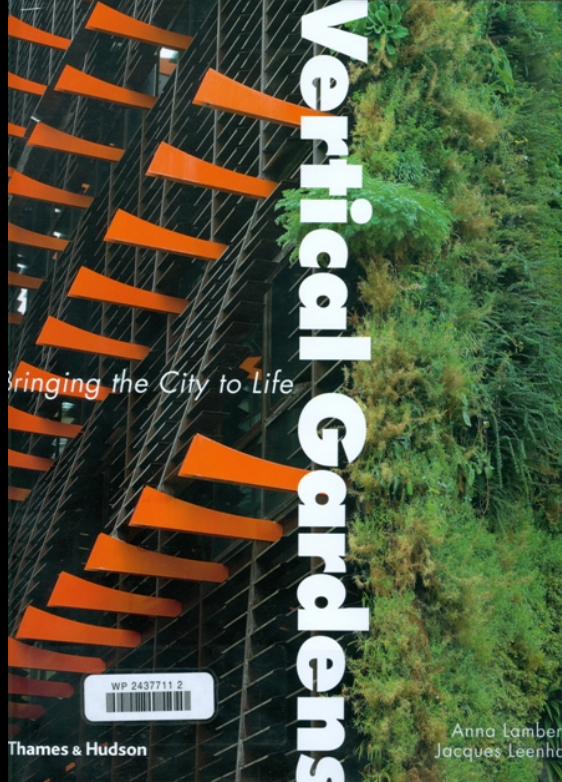
International Dissemination

EG Sustainable Design

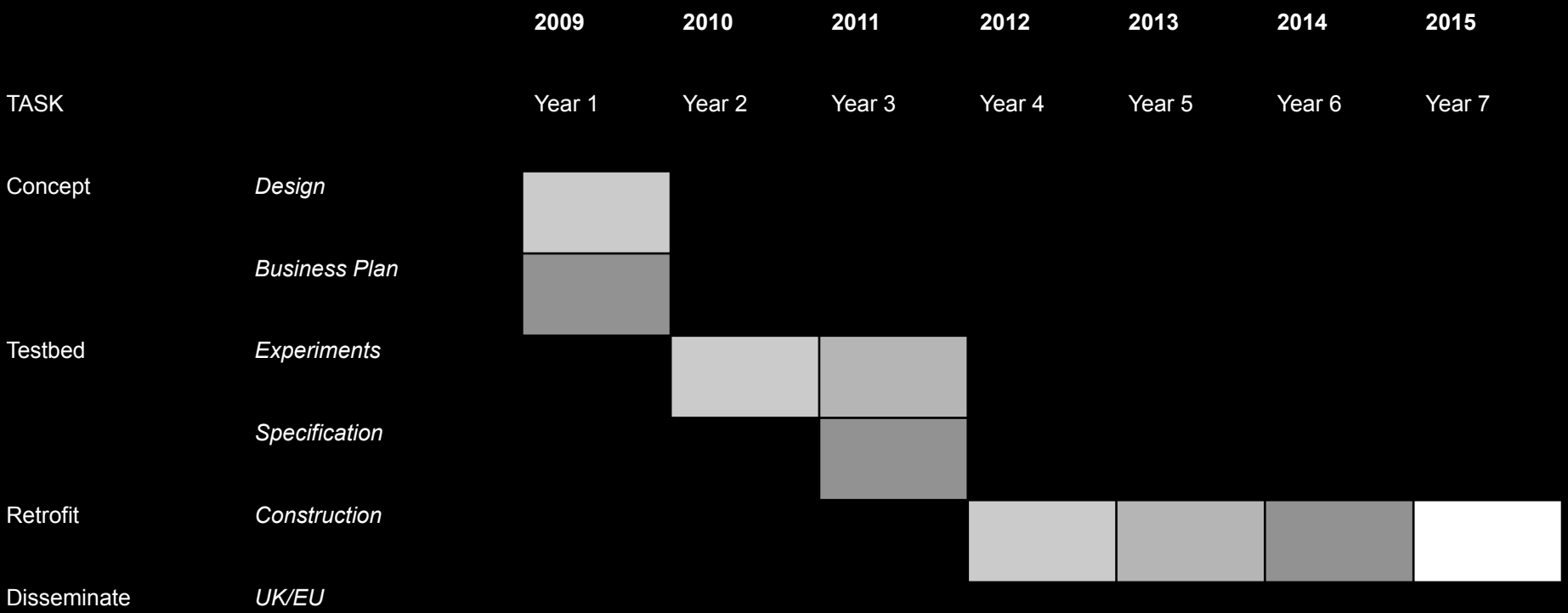
WHAT

passive solar and other 'green' energy values
Rethink heating/cooling and CO₂ efficiencies.

Given the exoskeleton design of the building, there is also potential for vertical vegetation (green infrastructure) strategies which contribute to air and water quality, cooling and natural biodiversity values



EG Timing



EG Costs

BUDGET		Standard	Green	UW 50%	EU 50%
Concept	<i>Design</i>		40,000	20,000	20,000
	<i>BusinessPlan</i>		10,000	5,000	5,000
Testbed	<i>4 Experiments</i>		300,000	150,000	150,000
4%	<i>Specification</i>		180,000	90,000	90,000
Basic retrofit	<i>Construction</i>	3,000,000		0	0
Green retrofit	<i>Construction</i>		4,500,000	2,250,000	2,250,000
Disseminate	<i>UK/EU</i>		100,000	50,000	50,000
Totals			5,130,000	2,565,000	2,565,000

EG Project Description

Who:

Applied Scientists: Prof John Darling Dean, Dr K. Hogan

Art and Design: Prof Tim Collins Assoc Dean, P.Cooper RIBA

Engineers: Prof Tony Robotham Assoc Dean, Dr D. Searle

Computing: Prof Bob Newman Assoc Dean

Wolverhampton: Nigel Brown, Regeneration and Environment

Potential Industrial Partners:

Pilkington, UK, Levitt Bernstein Architecture,

Feldon, Clegg and Bradley Architecture

Potential Academic and Professional

Ubirmingham Civil Eng and Urban and Regional, Birmingham

City Architecture and Landscape Architecture, RIBA,

Landscape Institute



Your Questions