



Sustainability in urban development: timing is everything

Peter Steele
Urban Development Coordinator
Moreland Energy Foundation

Moreland Energy Foundation

MEFL works on innovative approaches to greenhouse gas reduction and creating sustainable cities

Community Engagement

Research & Knowledge

Urban Development

Training & Consultancy

Sustainable Energy Services



Sustainable Urban Development

MEFL's program



Urban development strategy and communication



Analysis



Operational services

Sustainable urban development

Context and drivers

- > Cities and urbanisation
- > Population growth
- > Energy costs and security of supply
- > Peak oil
- > Climate change
- > Mental/physical health



Sustainable urban development

Issues and opportunities

Issues

- > Mismatch between type of supply and demand (residential)
- > Cost of endless urban expansion affects individuals and society
- > Split incentives

The opportunities

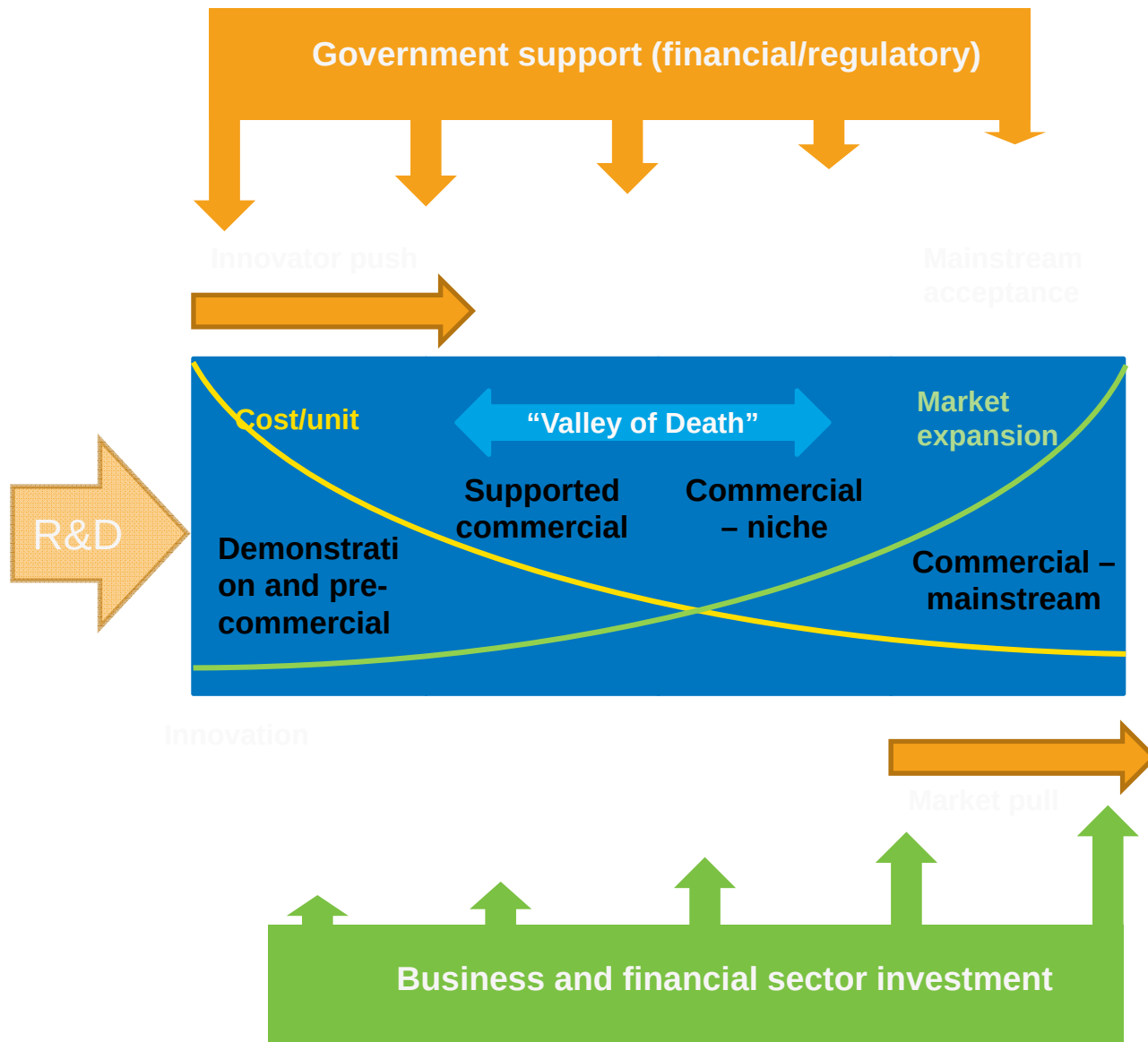
- > Share infrastructure costs across sites
- > New and innovative business and governance models (e.g. ESCo, MUSCo)
- > Our existing infrastructure can be better used
- > Leaders are needed, both in government and the private sector



Business models for enabling sustainable precincts

- > Research into 43 projects across 12 countries
- > Demonstrates a range of leading projects
- > Strategy and business model innovation can contribute to success
- > Supportive regulatory environments and incentives are critical





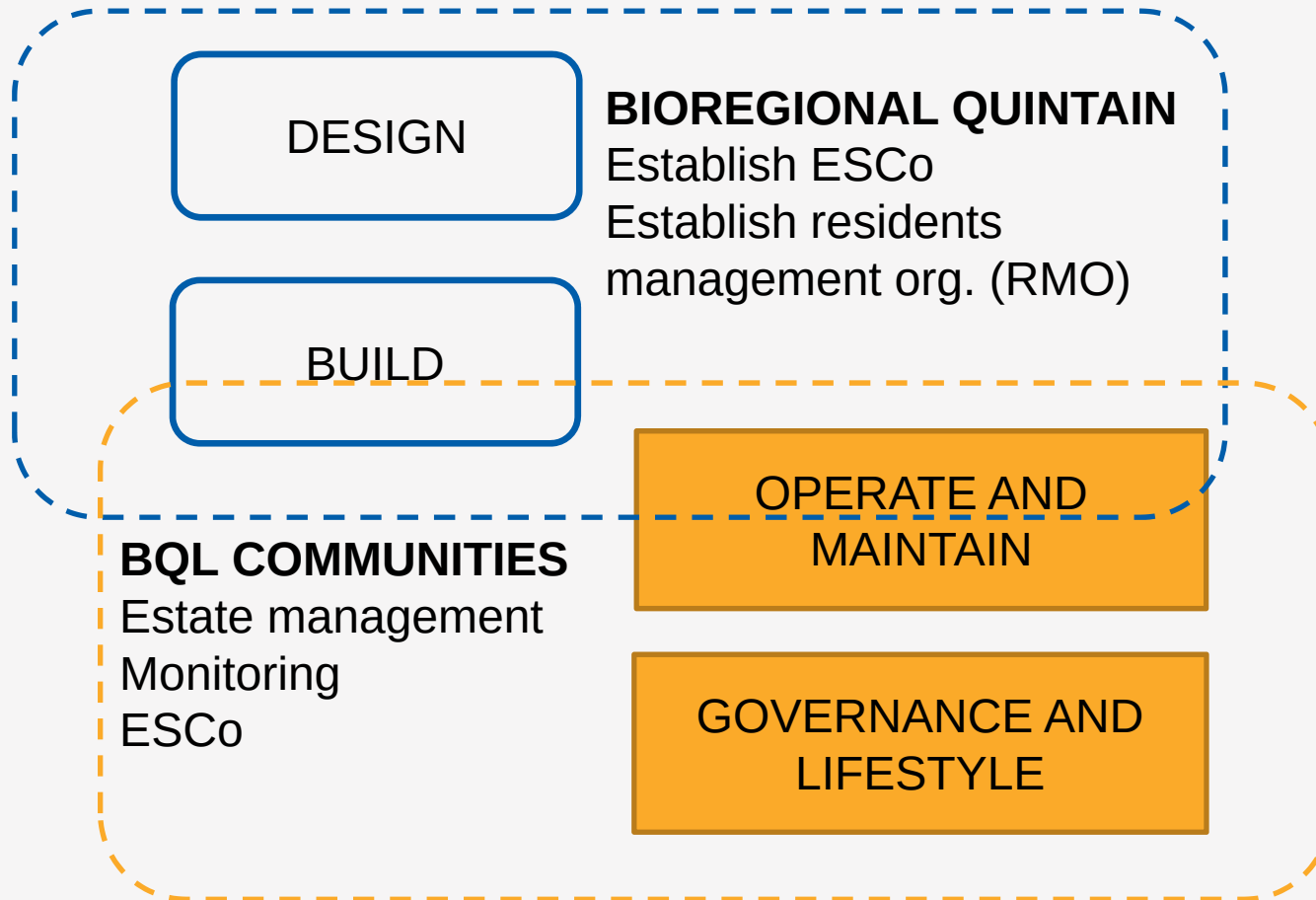
Project example: Portland Streetcar

Development densities linked to developer contribution

- Private sector benefit defined and levied through 'local improvement district' assessment
- Additional public sector benefit through higher density development and subsequent revitalisation



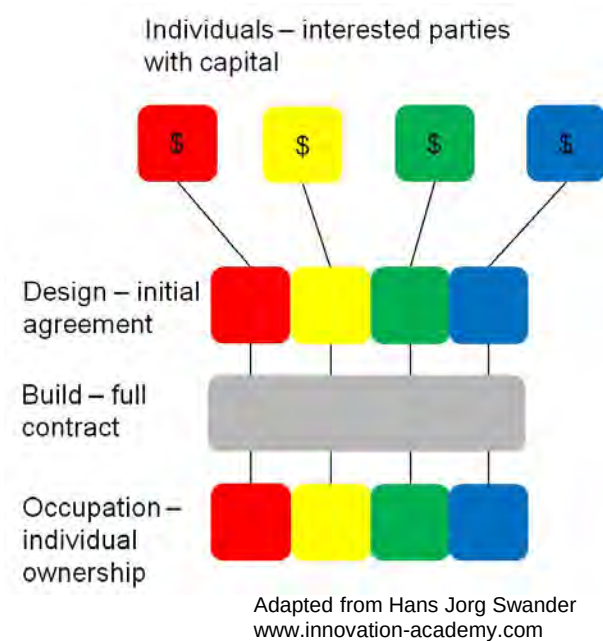
Project example: One Brighton, UK



Project example: Vauban, Germany

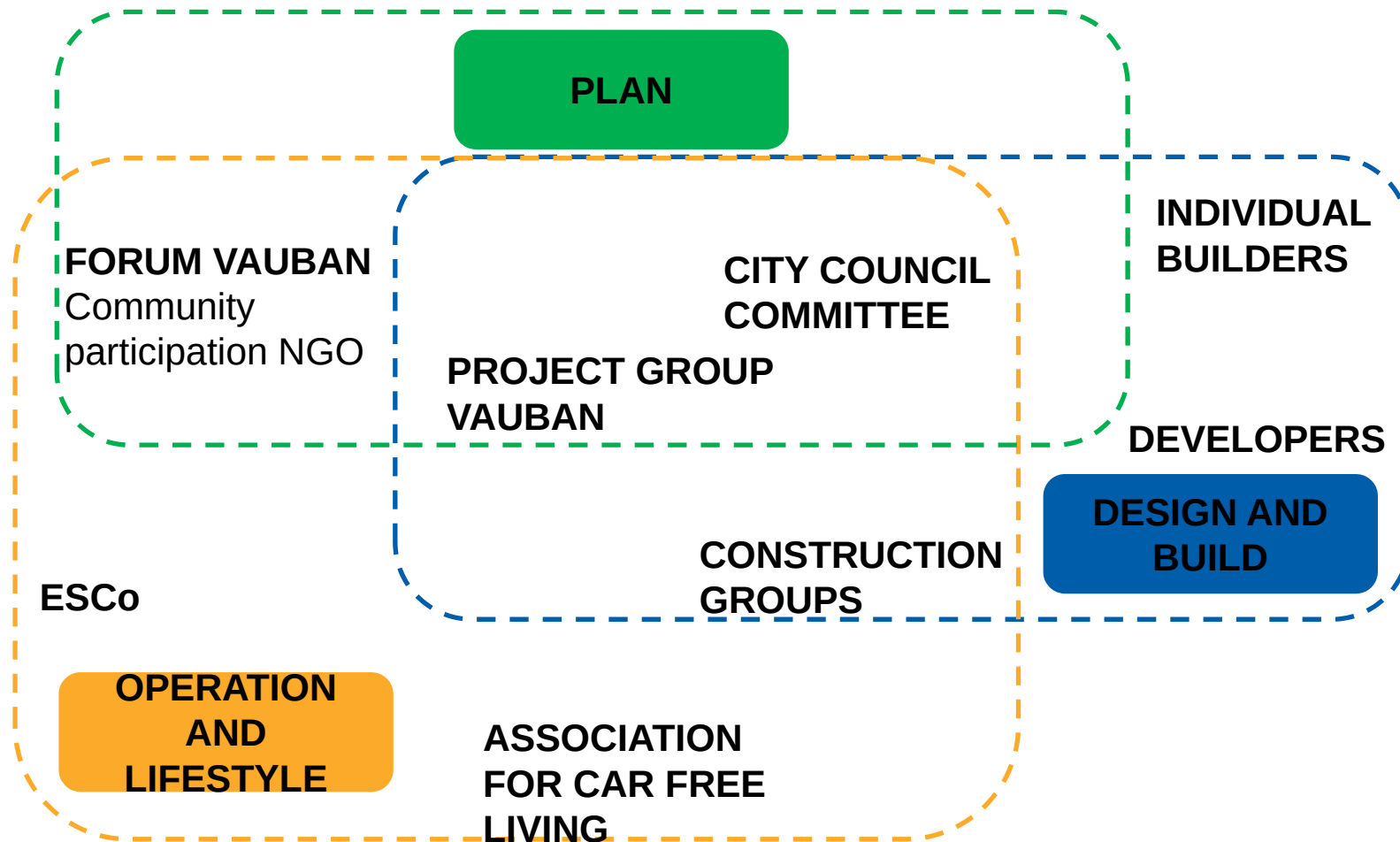
Community-led best practice

- > Mixed use, developed with strong community participation
- > 5,000 inhabitants, 600 jobs
- > Innovative engagement and development models
- > Government-set conditions and parameters, private delivery



Vauban

Setting the conditions for innovation





Local opportunities

With Innovation

- Super efficient buildings
- Onsite energy generation
- Car free development
- Precinct scale organic waste treatment
- Broader estates management
- Waste/sewage to energy

With innovation/reg change

- Broad distributed generation
- Mandated building efficiency
- Waste to energy
- Developer funding PT
- Greater uptake of onsite waste water treatment, sewer mining



Sustainable Urban Development Framework

Conceptualise, analyse, plan for delivery and communicate

Sustainable Urban Development Framework

Concept to operation

- > Strategic approach to the delivery of best practice sustainability measures
- > Links a set of high level principles to the delivery of 'on-the-ground' projects
- > Provides context with relevant indicators and project examples of current practice
- > Links measures across all stages of development from concept, master planning, design, construction through to operation

Sustainable urban development



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Urban developments built now and into the future will have a lasting effect on the sustainability of our cities. Developing a strategic approach to the delivery of best practice sustainability measures is critical in ensuring that projects can systematically address their environmental impact.

The Moreland Energy Foundation Limited (MEFL) has developed a framework to guide this, linking a set of high level principles to the delivery of 'on-the-ground' projects and success indicators, through all stages of development from concept, master planning, design, construction through to operation.

Principle				
 Zero carbon Elements: - On-site generation - Built form energy efficiency - Offsetting emissions - Sustainable food - Sustainable transport	 Zero waste Elements: - Waste minimisation and recycling during construction - Waste minimisation and recycling during operation	 Sustainable transport Elements: - Reducing the need to travel - Reducing private vehicle use - Encouraging active forms of transportation - Electric vehicles	 Sustainable products and materials Elements: - Sustainable construction materials - Green supply chain - Sustainable food	 Sustainable water Elements: - Water management during construction - Reducing water consumption - On site water treatment - Stormwater management

Key concepts

Introduction to the key concepts relevant to the element, outlining each concept's basic features and the rationale behind its inclusion.

Context

Each project is different, and the specific circumstances need to inform how sustainability is addressed. This section will describe the project context in relation to the element being explored.

Projects

Discrete and specific actions within each element to be implemented that will contribute to the achievement of the targets and objectives. For each project, consider:

- The challenges and considerations from a technological, financial and stakeholder perspective.
- Delivery strategy, including the ownership and business model, planning requirements, contractual matters and funding.
- The potential impact of the project in delivering the sustainability objectives of the project.

Implementation timeframe

Key milestones and considerations plotted against the stages of a development, from concept, master planning, design, construction through to operation.

Indicators of current practice

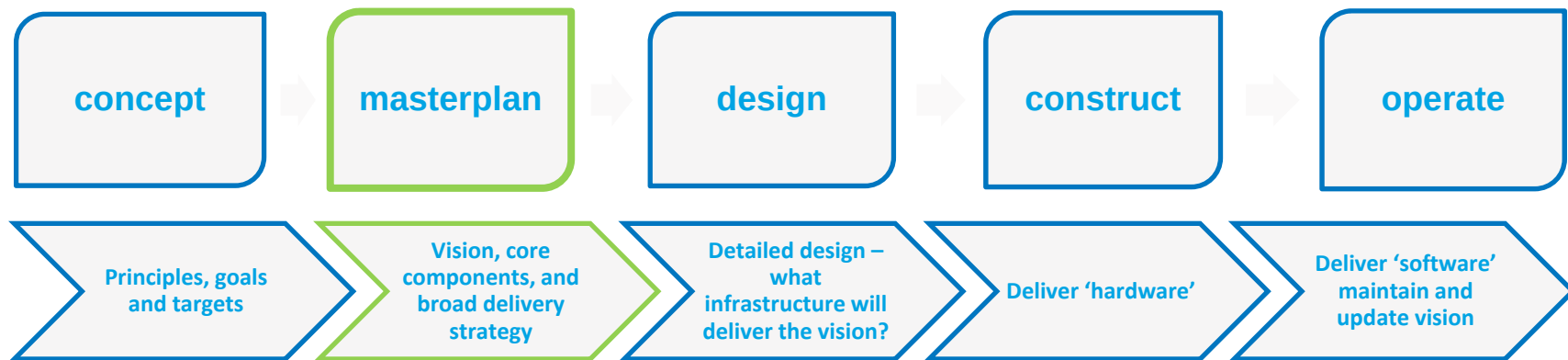
Standards achieved by other urban developments around the world against which the current development can be measured. Indicators of current practice are plotted on a scale to demonstrate the degree of the sustainability outcome. Targets for the current development can be established with reference to current practice and the strategic objectives of the project.



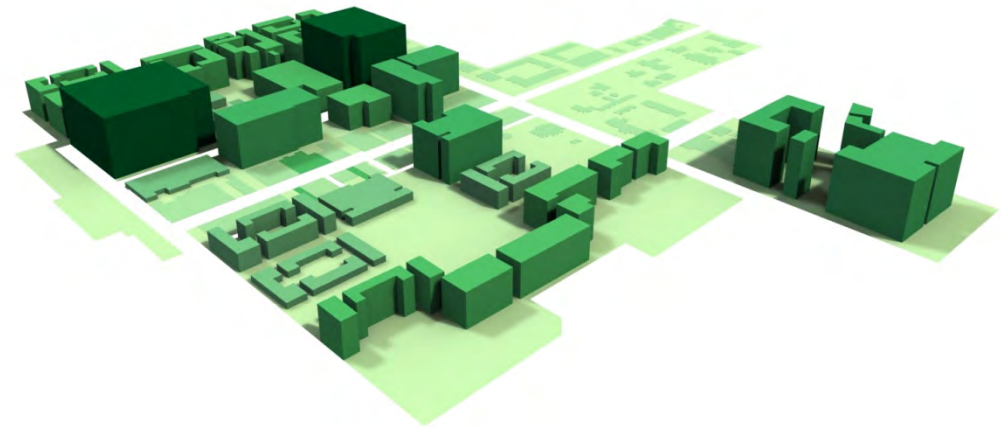
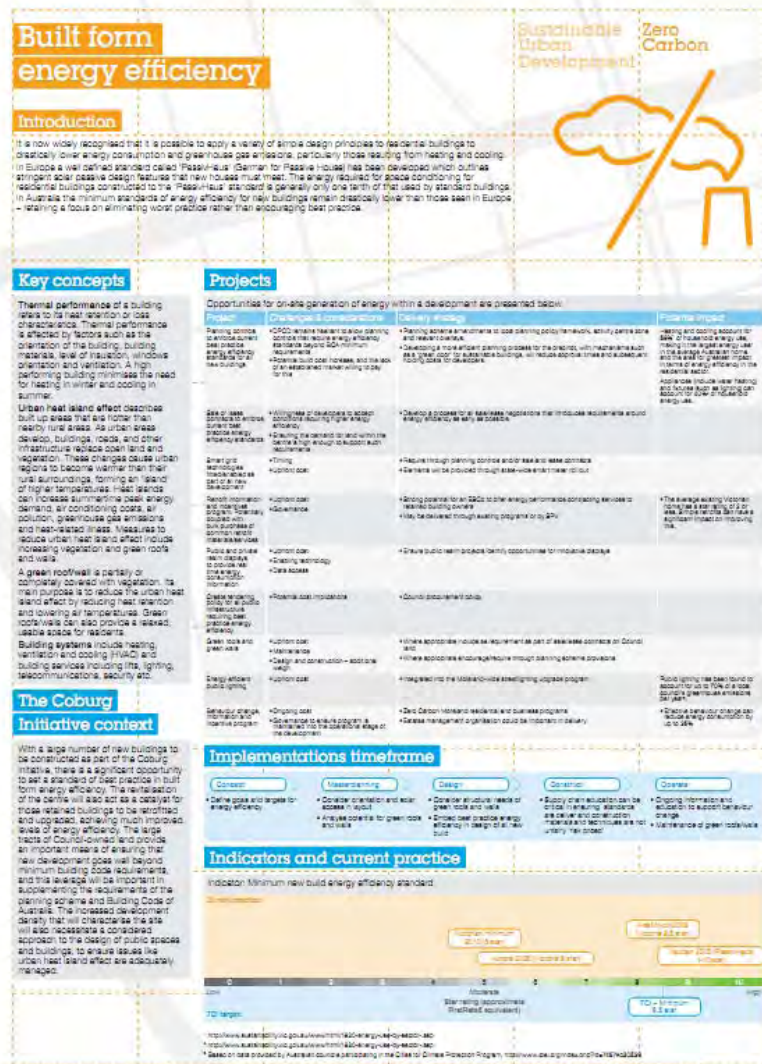



Development Process

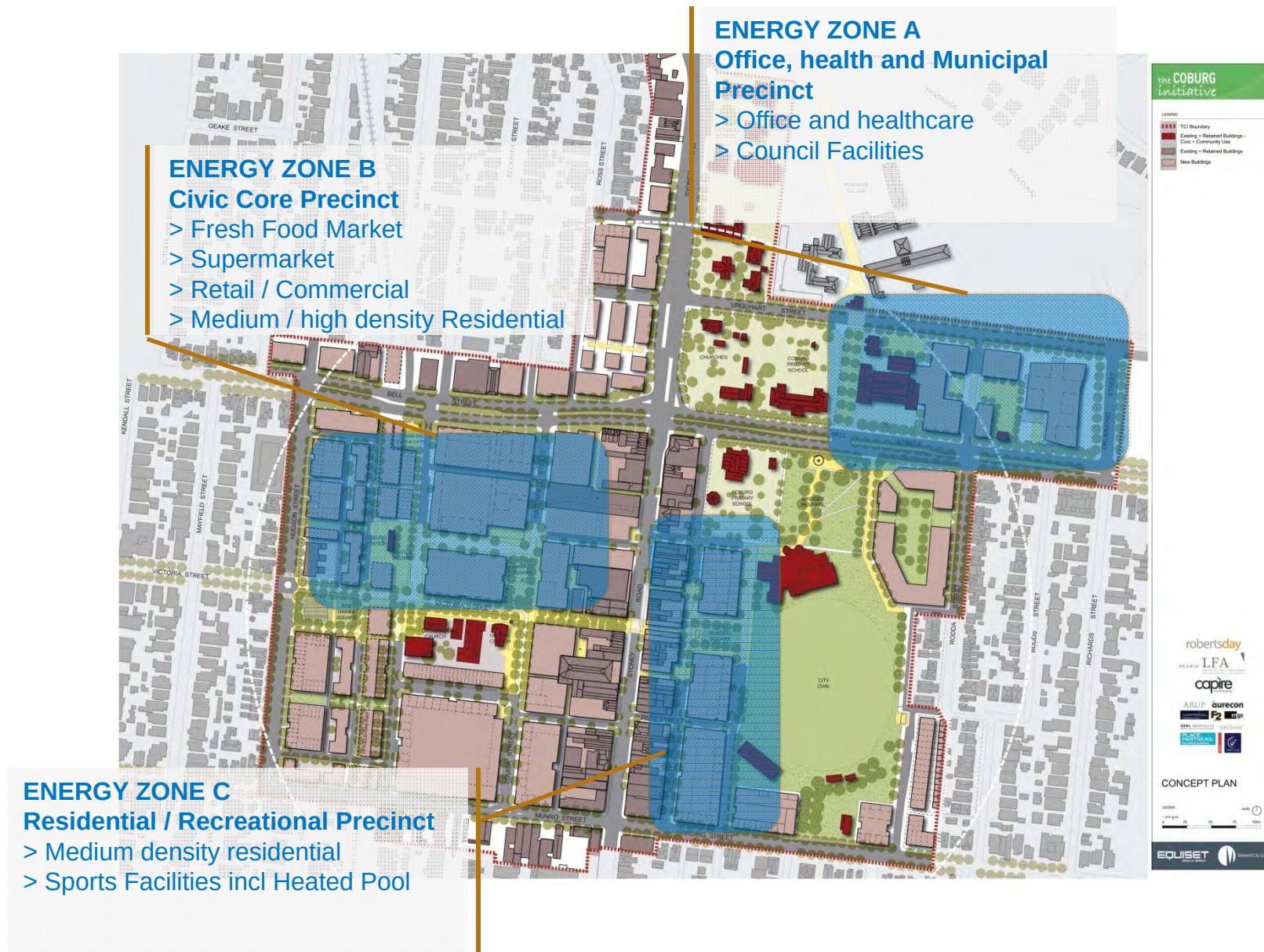
Integrating sustainability at each step



Opportunity identification and analysis

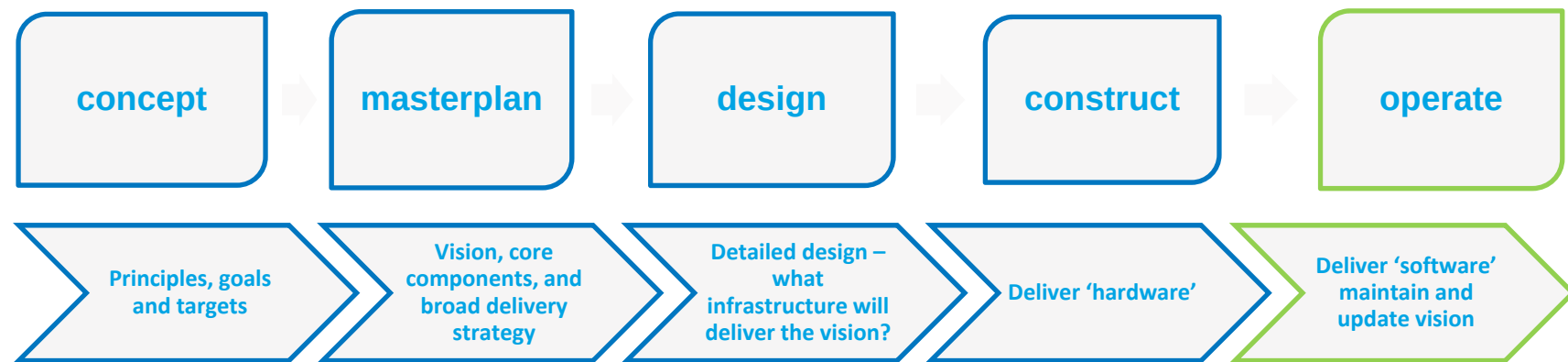


Project example: The Coburg Initiative



Development Process

Integrating sustainability at each step



Project example: The Commons

> **Concept:**

- o Location, access to public transport and cycling infrastructure inspired 'car-free' concept
- o Began from the premise of delivering best practice; sustainability not 'retrofitted'

> **Design:**

- o Occupant comfort a priority
- o High efficiency and proven systems support high performance envelope

> **Operation:**

- o Support for car-free living
- o Resident resources and workshops
- o Sustainable Owners Corporation



Sustainability at
The Commons



Final thoughts



1. Opportunities exist – immediate and long term
2. Leadership is critical (private and public sector)
3. Early and strategic consideration can make big improvements viable
4. No single ‘magic fix’ exists – each project is different
5. It’s already happening





Contact:

peter@mefl.com.au

Download the framework at www.mefl.com.au