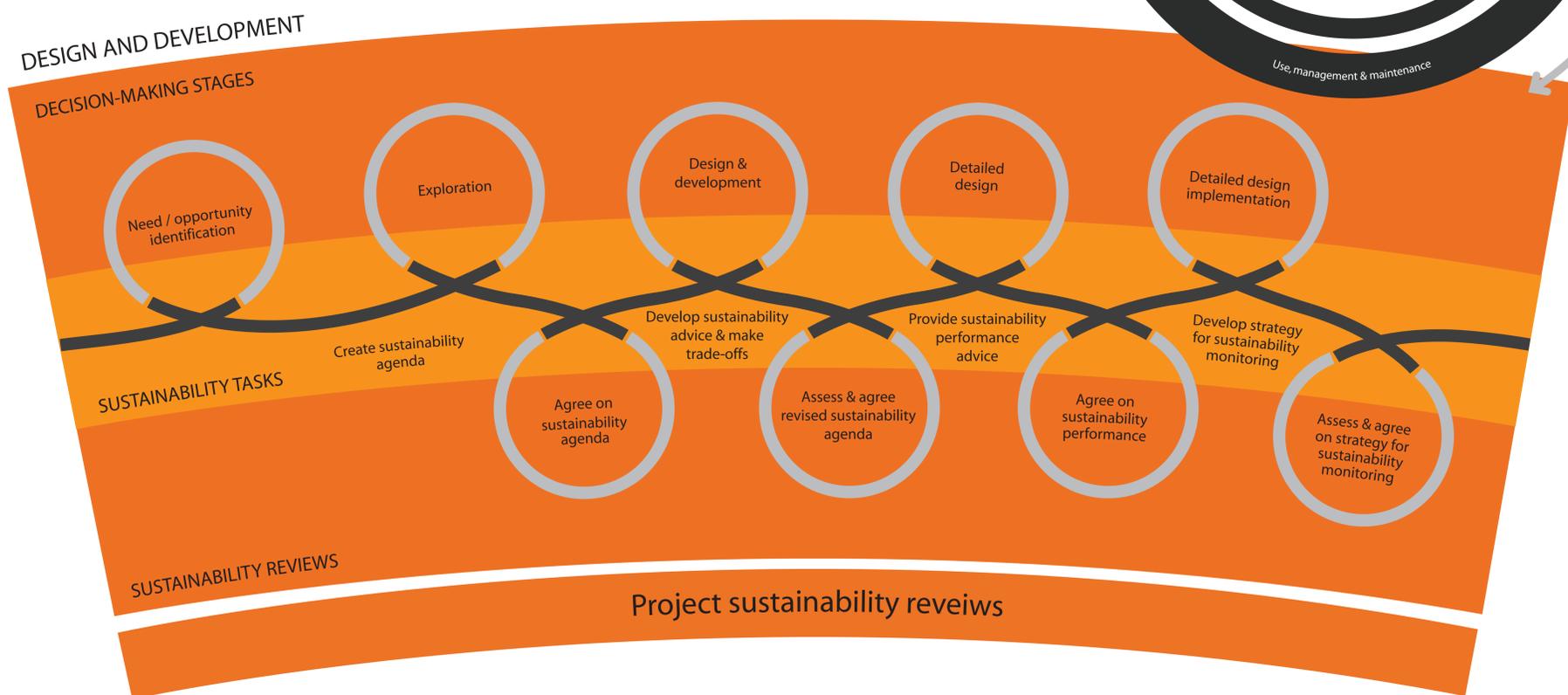
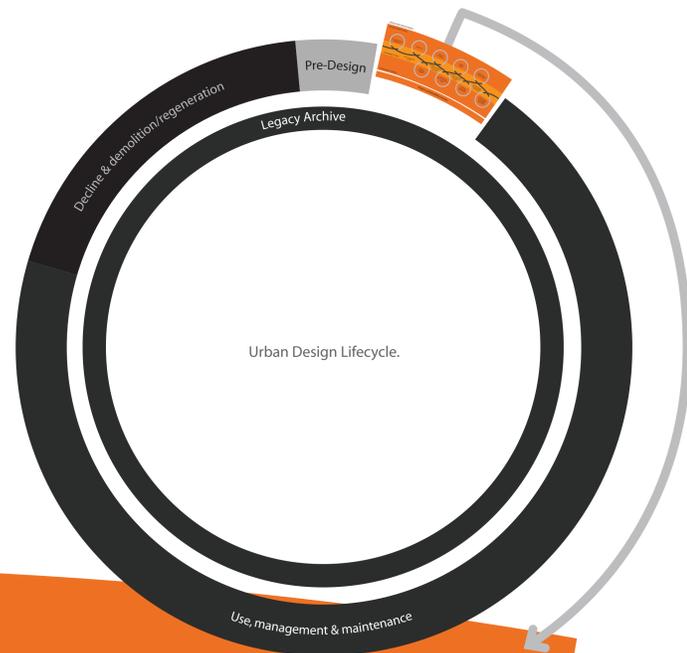


# Urban design decision-making process

VivaCity has developed an urban design decision-making model to help designers, architects, planners and other professionals make more effective and sustainable design decisions



## Decision-Making Stages

### Need / opportunity identification

An individual or team identifies a need or an opportunity for an urban development project

### Exploration

A Development Team is formed to explore the urban development project from all perspectives; A Project Sustainability Group is also formed

### Design & development

This stage corresponds to traditional Design & Construction management processes. This stage allows the Development Team to begin designing the urban development plan and consider design and development issues relating to sustainability

### Detailed design

This stage corresponds to traditional Design & Construction management processes. Here the Development Team progresses in more detail with the designs of the urban development plan, offering an in-depth understanding of design and development issues relating to sustainability

### Detailed design implementation

This stage corresponds to traditional Design & Construction management processes

## Sustainability Tasks

### Create sustainability agenda

The Project Sustainability Group creates the Sustainability Agenda from knowledge, information and recorded decisions in the legacy archive or in relation to historical and current factors. The Group first outlines sustainability issues believed to be important to the urban development project context and then prioritises the issues. The Development Team may also help to inform the Sustainability Agenda by using various tools to examine sustainability within the urban development project, including consultation with stakeholders who will be impacted by the urban development project

### Develop sustainability advice & make trade-offs

The Project Sustainability Group and the Development Team develop Sustainability Advice from an ongoing series of trade-off discussions as part of pre-planning application meetings. Both teams give and seek advice regarding the sustainability of the urban development project, explaining and negotiating sustainability trade-offs where necessary. Recourse to sustainability tools, techniques and knowledge is taken at this point. As a result of the trade-off discussions, revisions will be made to the prioritisation of sustainability issues and the revised Sustainability Agenda will be presented at the Sustainability Review

### Provide sustainability performance advice

The Project Sustainability Group and the Development Team elicit and provide Sustainability Performance Advice as part of pre-planning application meetings. This task gives both teams the opportunity to discuss the proposed performance of the urban development project design and give initial feedback before the formal performance assessment occurs at the Sustainability Review

### Develop strategy for sustainability monitoring

Once the urban development project has been built, the Project Sustainability Group and the Development Team will agree on a Strategy for Sustainability Monitoring. The strategy may include a timeline, budgets and sustainability statements required for the lifetime of the development

## Sustainability Reviews

### Agree on sustainability agenda

Before the Development Team begins designing and developing their plans for an urban development project, they must agree on the Sustainability Agenda with the Project Sustainability Group

### Assess & agree revised sustainability agenda

The Project Sustainability Group discusses and agrees the re-prioritisation of the Sustainability Agenda with the Development Team. This ensures that both teams are kept informed of the role of sustainability in the project. The Group also agrees on the preliminary designs created by the Development Team

### Agree on sustainability performance

The Project Sustainability Group assesses the performance of the detailed design against the Sustainability Agenda. Compliance between the design and the Sustainability Agenda means the Development Team can submit their plan for planning approval. Non-compliance means the two teams will have to continue negotiating the sustainability trade-offs

### Assess & agree on strategy for sustainability monitoring

The Strategy for Sustainability Monitoring is reviewed and assessed to ensure that whoever is assuming the curatorial role is able to manage and maintain the urban development project in the short- and long-term. The legacy archive and the Project Sustainability Reviews will be used to guide the assessment



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VivaCity 2020

SUSTAINABLE URBAN ENVIRONMENTS

# Urban sustainability for the 24-hour city



Development of design decision-making tools & resources

## Key issue / problem:

VivaCity2020 was a five year research project that sought to understand the trade-offs city dwellers and city developers make everyday and how they can make more sustainable decisions.

The project took an in-depth look at five key sustainability issues and sought to understand them through the decisions made by policy-makers, planners, architects and other urban design professionals. The key findings fall into four overall themes: the urban design decision-making process itself, urban policy, urban form and the urban experience.

## Key findings:

### Theme - The urban design decision-making process

#### Urban design decision-making

#### process and ICT support solutions:

- The urban design decision-making process is iterative and cyclic, not linear, and there is a real and current need for a legacy archive of information to assist decision-making.
- As a result of a review of the relevant literature and three, in-depth case studies, a new urban design decision-making process was developed that takes into account sustainability at each stage (please turn over for more information).
- All urban design knowledge cannot be incorporated into a unified ICT solution; rather, important and relevant elements should be identified and recorded and the visual representation of this information, in particular a 3D format that can be queried, can dramatically improve user understanding and collaboration.

### Theme - Urban Policy

#### The generation and evolution of diversity:

- Most mixed-use is often only dual use with residents and businesses, and social housing (both existing and new) is an important element in this mix.
- The mix of uses works best at the horizontal levels of streets and neighbourhoods and does not seem to work well as at the vertical level of high rise buildings, and the mix cannot be socially or economically engineered.

VivaCity is using this knowledge to model the behaviour of cities, in particular the spatial morphology of the city as generated through economic processes. This is being achieved through the use of computer agents (akin to people) with vision and memory who act and react to changes in the economic environment such as interest rates or land rents.

### Theme - Urban Form

#### Crime and fear of crime:

- The research clearly demonstrates relations between density and crime, mixed-use and crime, and temporal patterns of incidents, many in opposition to current orthodoxy and policy.
- Space Syntax analysis supports the view that street layouts should facilitate local movement, but not global movement. It found that higher residential density at ground level is associated with lower rates of both burglary and robbery, and that dwellings located on highly used roads tend to be exposed to a lower risk of burglary.

The research also highlights a range of difficulties when residential areas and local amenities co-exist, including noise, rubbish and disturbance. These findings do not mean that city centre or mixed-use developments should be discouraged, but that greater attention should be paid to safety and security in these areas. Commercial premises and nearby residences should be properly protected from crime and take steps to reduce fear of crime.

#### Housing provision:

This research sought to examine the changing residential culture within English city centres during the last 150 years. The starting point was to understand examples of different housing types. This led to an investigation of the ways in which built form and housing layout contribute to the creation of sustainable housing environments and thriving local communities.

-The findings highlighted the emergence of a 'developers' model of a mixed-use urban block as a new residential typology which, along with a twenty-first century model of streets and squares, has come to represent a culturally specific response to the perceived need to reintroduce housing into the inner city.

### Theme - Urban Experience

#### Environmental quality:

- Key deliberations about urban design do not adequately involve local people. Many are unaware of the timing of planning decisions and their scope for involvement.
- People's perceptions of their urban environment can be significantly improved by addressing 'door-step' issues such as litter, graffiti and fly-tipping at the design stage. The provision of suitable infrastructure for enabling more sustainable behaviour, such as recycling provisions, should be incorporated at the design stage of the development.

Crucially, there are clear and strong links between environmental quality and other sustainability issues such as crime, social make-up, economic diversity, urban regeneration and renewal, clearly illustrating that an integrated approach to urban design is required.

#### Public conveniences:

This research provides a clear and concise example of the importance of micro issues on the macro (city) scale. It illustrates how decisions made at the very local level can have a definite and measurable impact upon how people perceive and use the city.

- The research found that although well-designed toilets are an important amenity within any building or urban environment and the way they are designed should meet everyone's needs, users have rarely been consulted regarding the design of these facilities.
- Current toilets fail to meet legislative requirements such as the British Standards.
- There is no one, optimal solution, no "one size fits all". The city centre has to offer a choice dependent upon stakeholders and to specify the parameters for that choice.

In response, VivaCity has produced a range of user personas and templates, including new designs, based upon a user-centric methodology along with a hierarchy of provision of toilets in city centres.

### Theme - The urban design decision-making process

#### Urban design decision-making process and ICT support solutions

We cannot understand the trade-offs made by city dwellers and developers until we understand the processes they use to make their decisions: what information they value and what they do not. We know that this will change from decision-maker to decision-maker and from situation to situation. Is it really possible to effectively influence decision-makers, and if so how?  
*(Please turn over to read more)*

### Theme - Urban Experience

#### Environmental quality

It is only one half of the story to understand how the structure of modern UK cities develop and determining how future development can be more sustainable. The other half of the story is understanding the impact of the city environment (such as noise, pollution, thermal quality and the quality of the physical environment) upon our everyday experiences.

#### Public conveniences

Are they accessible, inclusive, are we well provided for? What impact do they have on our experience of the city?

### Theme - Urban Policy

#### The generation and evolution of diversity

Because the concepts of sustainability and urban sustainability have not been clearly conceptualized or defined it has made it difficult for the Government, businesses and the public to effectively address the issues they raise. The Government is currently actively promoting mixed-use developments as the key to sustainable communities, but many questions on the viability of mixed-use exist.

### Theme - Urban Form

#### Crime and fear of crime

Urban diversity and mixed-use seem to be what cities are about and what makes them worth living in, but is it socially and economically sustainable? Mixed-use can be associated with a higher level of social risk, especially through crime and social disorder. Is this necessarily in the scheme of things or can we have diversity with social benefits rather than social costs?

#### Housing provision

By understanding the changing residential culture within UK city centres - such as housing typologies, architectural elements and morphological arrangements - we can understand how the built form and housing layout contribute to the creation of sustainable housing and communities.