

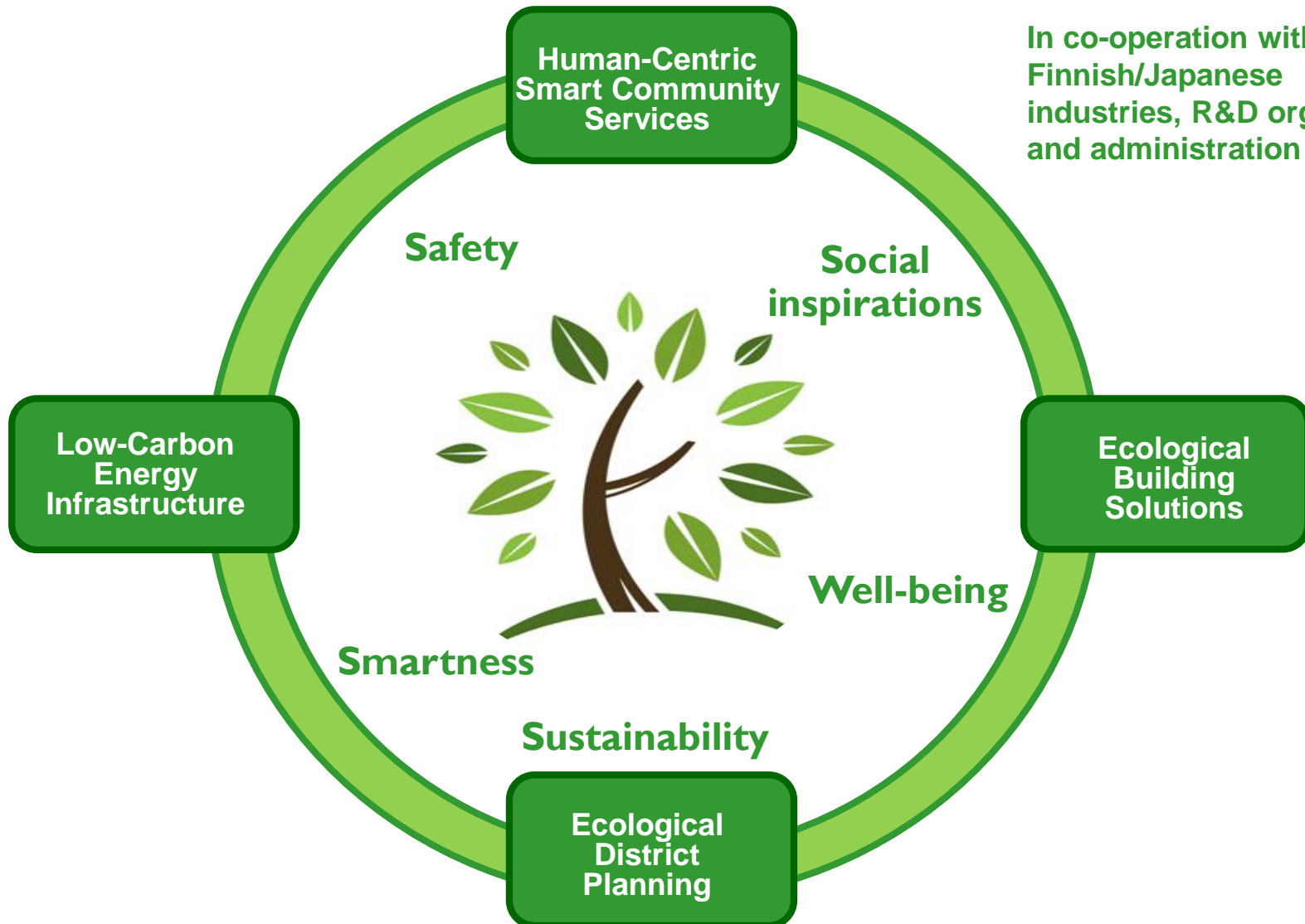
Business from technology

Life City

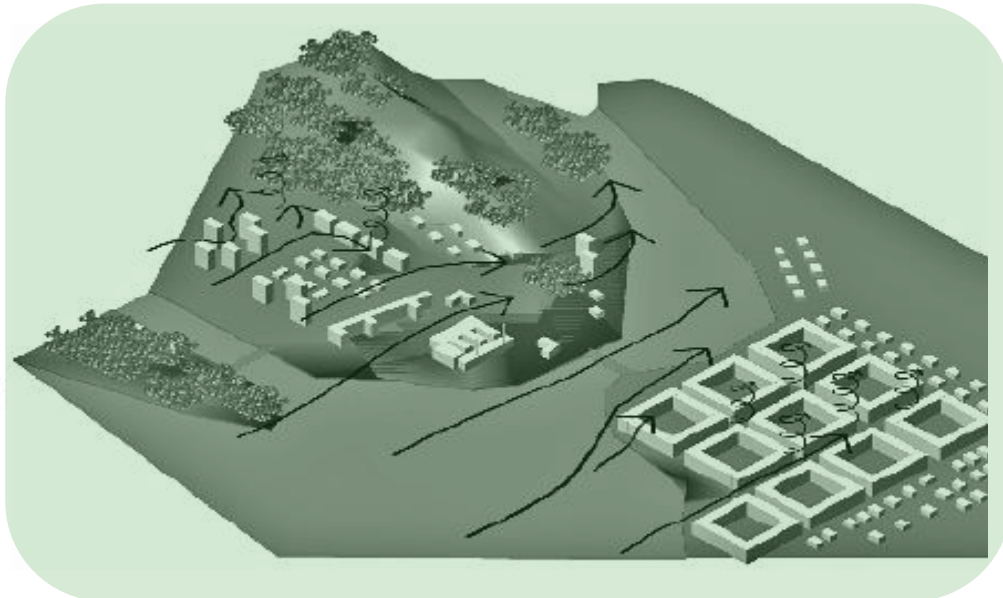
Framework for Concept Development

Markku J. Virtanen, Dr.

Value Propositions of Life City Concept



Elements of Life City Concept...



Ecological District Planning

The main goals of bioclimatic planning are:

- Harmonize the needs of nature environment and human activities.
- Use the nature forces in a positive ways.
- Take pedestrian and public transport as the starting points of planning.
- Strengthen social community, and boost safety and health.
- Develop sustainable ways of using nature resources.
- Create a harmonious multi-functioning urban structure.
- Unify and harmonize the cityscape, and create a pleasant environment and a good micro-climate



- **Target setting** for Life City
- **Visualization and virtualization** of Life City
- **Guidance** for the design, construction and operation of the area
- **Quality assurance** for the life cycle commissioning process
- **Planning the involvement** of investors, companies and end-users with the development
- **Active dissemination** about the achievements in different forums

...Elements of Life City Concept...



Ecological Building Solutions

- **Wooden architecture and construction**
- **Healthiness and excellent indoor environment**
- **Energy-efficiency**
- **Fire safety**
- **Standing earthquakes**
- **Wooden interiors**



Piloting of Finland - Home concepts:

- **Wooden/log houses and multi-storey buildings**
- **Senior housing and nursing homes**
- **Schools and kindergarten**
- **Office/commercial buildings**
- **Safe coastal construction.**

...Elements of Life City Concept...



Low-Carbon Energy Infrastructure

- Multi-energy source smart energy network
- Resource efficiency and emission reduction
- Energy security and availability
- Energy balancing between demand and supply
- Safety and quality



Piloting of Smart Micro Energy Grid concept:

- Interconnected energy systems & storage
- Building/vehicle integration
- Reliable energy transmission and distribution networks
- Smart grid communication
- Management systems for smart grids

...Elements of Life City Concept



Human-Centric Smart Community Services

- Governance and participation
- Life cycle of living
- Wellbeing and health (social care, mental well-being, mental health treatment)
- Community safety and smartness
- Learning and education
- Leisure and tourism
- Transport
- Job creation



Piloting smart community services:

- Social well-being services supported by IT solutions
- School solutions tied to community
- Security services in the event of natural disasters

Framework for Realization of Life City Concept

Ecological District Planning

- **Target setting** for Life City
- **Visualization and virtualization** of Life City
- **Guidance** for the design, construction and operation of the area
- **Quality assurance** for the life cycle commissioning process
- **Planning the involvement** of investors, companies and end-users with the development
- **Active dissemination** about the achievements in different forums

In co-operation with



- Finnish-Japanese research organizations
- City administration
- Finnish-Japanese city planners
- Representatives of Japanese end-users

Ecological Building Solutions

Piloting of Finland - Home concepts

In co-operation with



- Finland – Home partners
- Japanese industry partners

Low-Carbon Energy Infrastructure

Piloting of Smart Micro Energy Grid concept

In co-operation with



- Japanese energy company
- Finnish industry partners

Human-Centric Smart Community Services

Piloting of services

In co-operation with



- Japanese stakeholders
- Finnish industry partners

Framework for Realization of Life City

Smart & Eco

Human-Centric Community Services

Industry group project piloting services

Low-Carbon Energy Infrastructure

Industry group project piloting smart micro energy grid concept

Ecological Building Solutions

Industry group project piloting stepwise individual wooden house concepts, building blocks,.....

Ecological District Planning

Neutral joint research project supporting pilot projects in parallel

Major benefits for participants

Research:

- Ecological District Planning

Improved communication with Japanese stakeholders

Boosted channel to Japanese market

Specified and verified performance requirements for all levels of the realization

Piloting:

- Ecological Building Solutions
- Low-Carbon Energy Infrastructure
- Human-Centric Smart Community Services

Value-creating solutions through product integration

Industrial partnering

Support for product certification

High-level of visibility



VTT
Technology for business