



# Achieving Sustainability at all Scales



**SCENARIO A: AGGRESSIVE GROWTH**

TOURISM CAPACITY: 10,000

- ROAD NETWORK
- MUNICIPAL CENTRE
- SECONDARY CENTRE
- LOCAL DEVELOPMENT CENTRE
- TOURISM - SECONDARY HOMES
- TOURISM - BLANKET
- TOURISM WINTER
- SKI HILL DEVELOPMENT



**SCENARIO B: SUSTAINABLE NODAL GROWTH**

TOURISM CAPACITY: 3,000

- ROAD NETWORK
- MUNICIPAL CENTRE
- SECONDARY CENTRE
- LOCAL DEVELOPMENT CENTRE ON HOLD
- TOURISM - SECONDARY HOMES
- TOURISM - BLANKET
- TOURISM WINTER
- SKI HILL DEVELOPMENT
- SKI HILL DEVELOPMENT ON HOLD
- AGRICULTURE
- GREEN CORRIDOR



**SCENARIO C: GREEN GROWTH**

TOURISM CAPACITY: 2,500

- ROAD NETWORK
- MUNICIPAL CENTRE
- SECONDARY CENTRE
- LOCAL DEVELOPMENT CENTRE ON HOLD
- TOURISM - SECONDARY HOMES
- TOURISM - BLANKET
- TOURISM WINTER
- SKI HILL DEVELOPMENT
- SKI HILL DEVELOPMENT ON HOLD
- AGRICULTURE
- GREEN CORRIDOR







# Introducing IBI Group

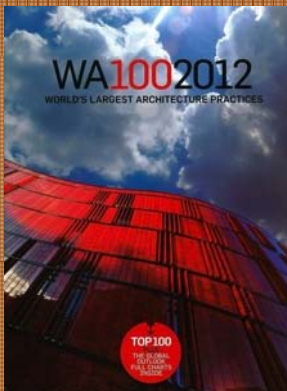




# INTRODUCING IBI GROUP

IBI Group is a multi-disciplinary organization offering services in four areas of practice:

**URBAN LAND • ARCHITECTURE • TRANSPORTATION • SYSTEMS TECHNOLOGY**



“IBI Group is the fourth largest Architecture Firm in the World and Canada’s largest architectural practice.”

– BD 2012 World Architecture 100, January 2012



# INTRODUCING IBI GROUP

Over 80 offices and 3,100 professionals located across Canada, United States, Europe, Middle East, Africa and Asia.

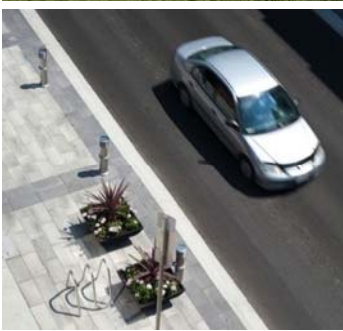


“IBI Group is the global designer of local communities.”

– Phil Beinhaker, Chairman Director and CEO of the IBI Group of Firms



# INTRODUCING IBI GROUP







# What is Sustainability?



# SUSTAINABLE DESIGN

Maintaining what we have • Using resources more efficiently • Equally valuing our shared economic, environmental, social and cultural future • Meeting the needs of the present generation without compromising the ability of future generations to meet their needs • Economic and social changes that promote human prosperity and quality of life without causing ecological or social damage • Long term thinking • An economy integrated with nature • A systems flow of resources • Evaluations based on system cost • *Since 1974, IBI Group projects have been built upon the three pillars of sustainability: economic growth and resiliency, social development, and improvement in the built and natural environment.*

WHAT DOES IT MEAN?

# GREEN RATING SYSTEMS



THE SUSTAINABLE SITES INITIATIVE™

- IBI Group has over 280 LEED/BREEAM Accredited Professionals worldwide
- IBI Group has developed over 300 projects that conform to different Green Rating Systems globally.
- Over 140 LEED/BREEAM Certified and Registered projects.





# SELECT LEED CERTIFIED PROJECTS



UBC COAST IN VANCOUVER, BC, CANADA



WOMENS COLLEGE HOPITAL IN TORONTO, ON, CANADA





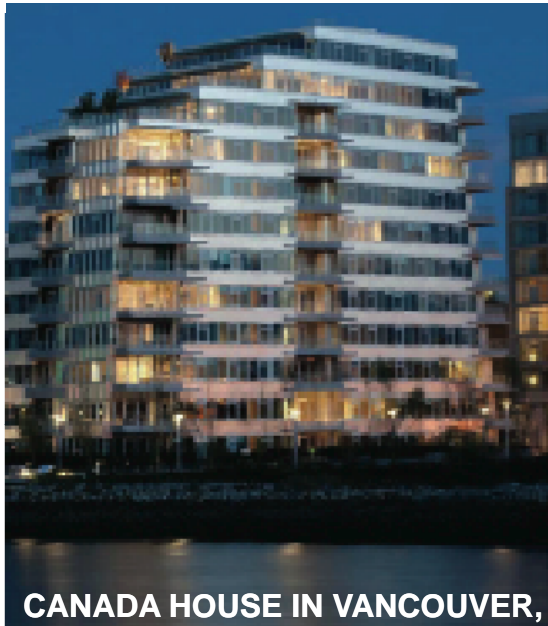
# SELECT LEED CERTIFIED PROJECTS



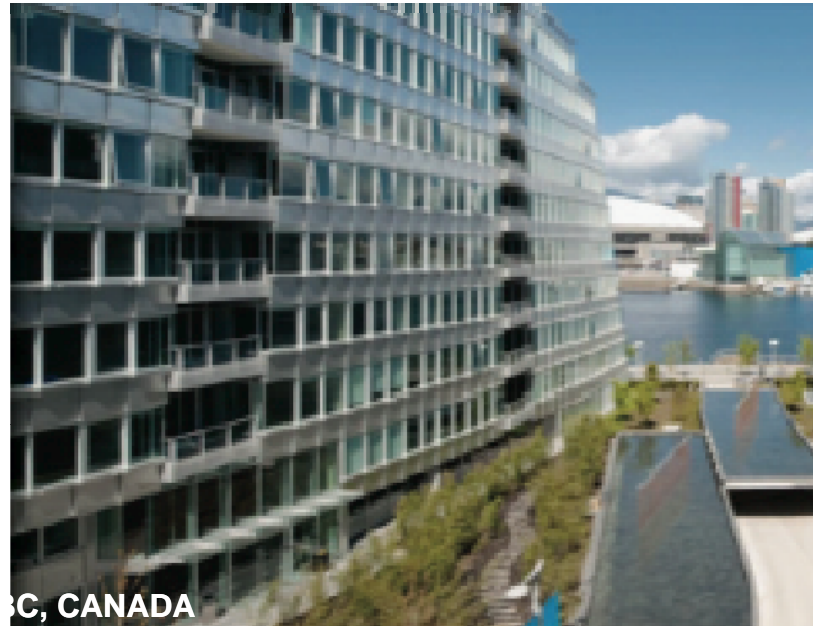
RCMP IN IQALUIT, CANADA



GO STREETSVILLE STATION, ON, CANADA



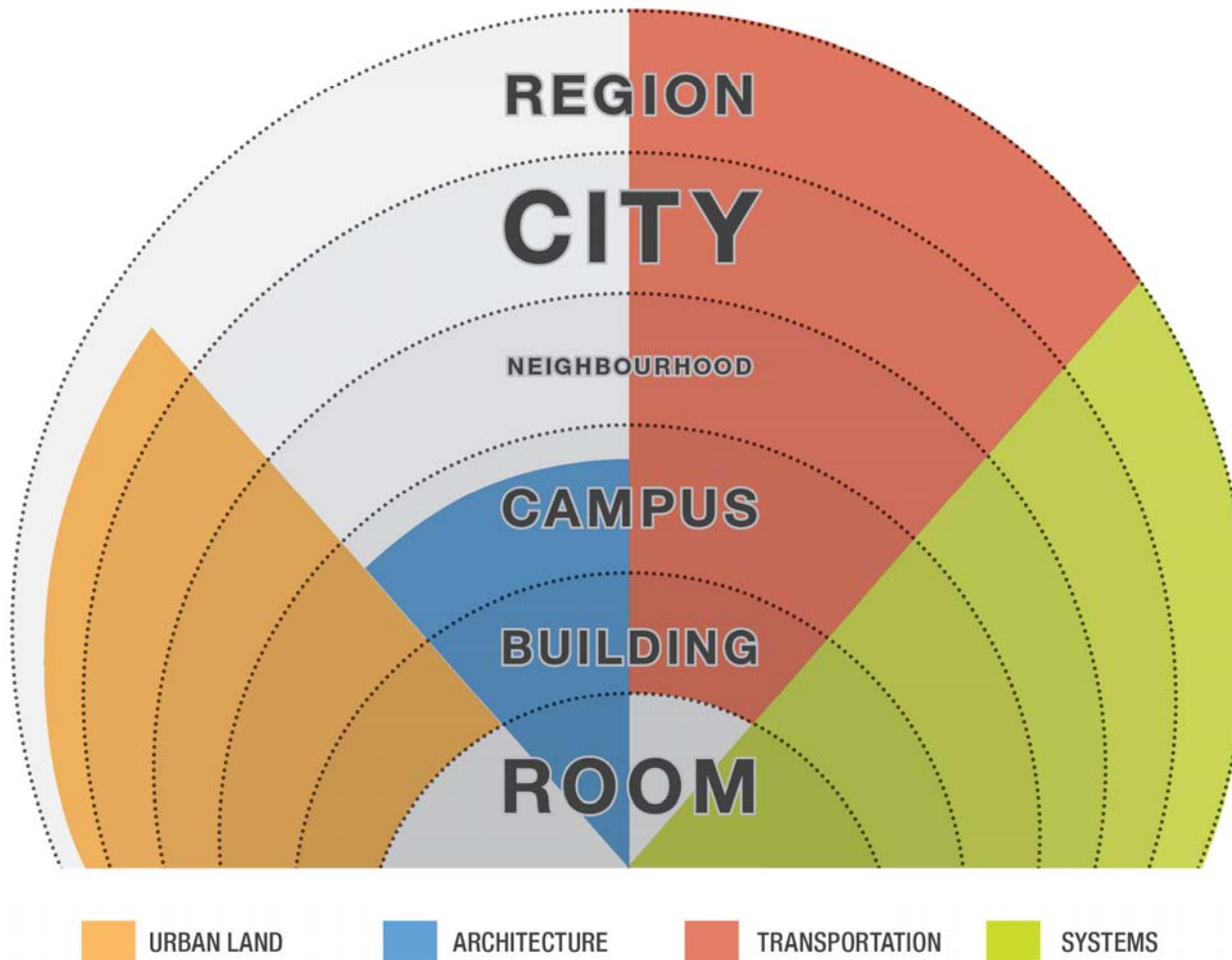
CANADA HOUSE IN VANCOUVER, BC, CANADA





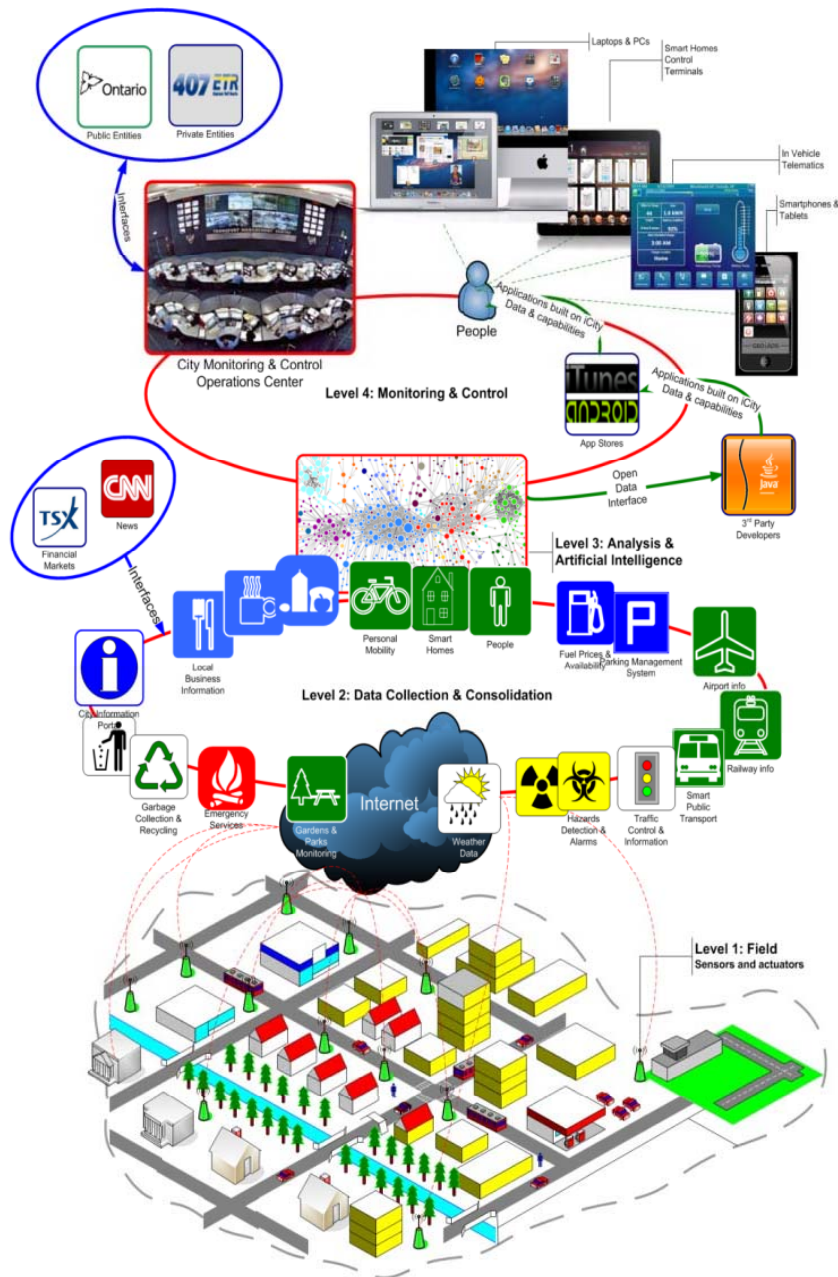
# SUSTAINABILITY AT ALL SCALES

## Capabilities



- IBI Group's capabilities and experience in sustainable development varies from **regional scale** to **site-specific projects**.

# SMART CITIES



- IBI Group combines technology and design with sustainable practices to create SMART Cities.





# Case Studies





# SUSTAINABLE COMMUNITY PLANNING



## Spatial & Urban Plans for Kolašin & Šavnik

- Funded by the **World Bank** and Government of Montenegro
- Land management **development framework** (social, economic, environmental)
- Provides guidelines for **preservation** of environmental, cultural and natural heritage
- Process-driven with strong **public participation**
- **Achievable growth forecasts** for economic self-sufficiency to reverse outmigration and improve quality of life for residents
  - Green industry
  - Knowledge based economy
  - Culture & heritage
  - Agriculture
  - Tourism



## City of Kawartha Lakes Integrated Community Sustainability Plan, ON, Canada

- Prerequisite to obtain **funding** for sustainable infrastructure projects
- Addresses **economic, environment** and **social** improvements
- **Community-driven** plan employs a range of consultation tools
  - Social media
  - Web based surveys
  - Stakeholder meetings
  - Steering committee
  - Traditional media
- Plan prioritizes **measureable** infrastructure and policy projects



# COMPARATIVE ANALYSIS

## Spatial & Urban Plans for Kolašin & Šavnik

- **Linear** process
- **Top Down / Bottom Up** project process
- Establishes **development strategy** to reverse population decline
- **Incorporates** community input at key points in the project process
- Emphasizes **economic, social and environmental** sustainability

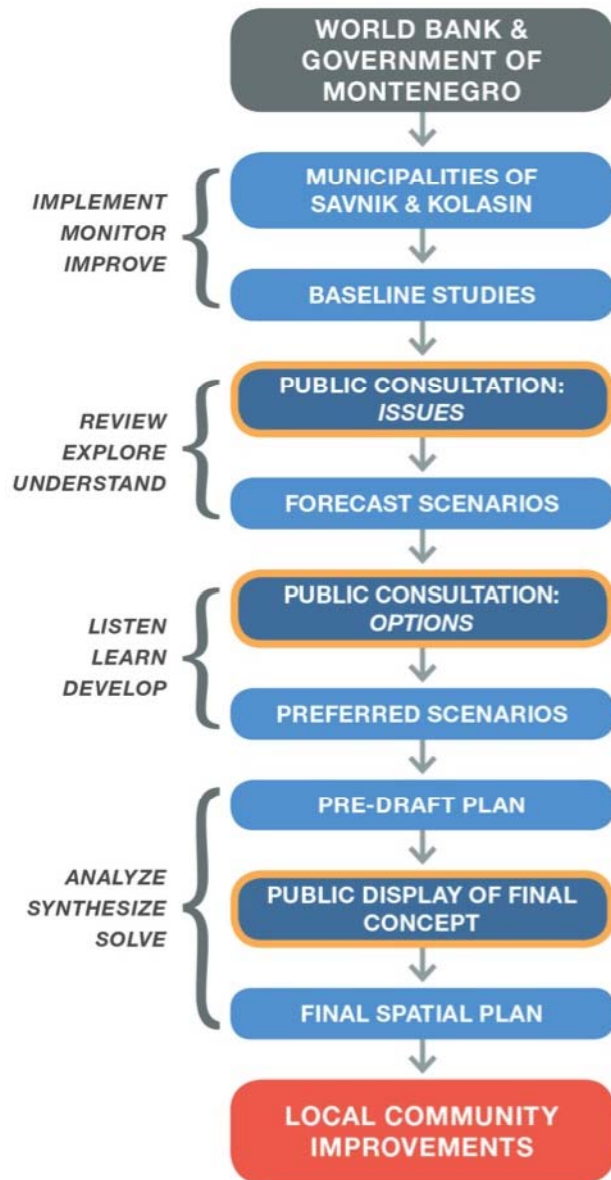
## City of Kawartha Lakes Integrated Community Sustainability Plan

- **Cyclical** process
- **Bottom Up** project process
- Identifies priority infrastructure and policy programs **eligible for funding**
- **Initiated and written** by stakeholders involving them for the duration of the project
- Addresses **nine sustainability issues** as identified by project stakeholders

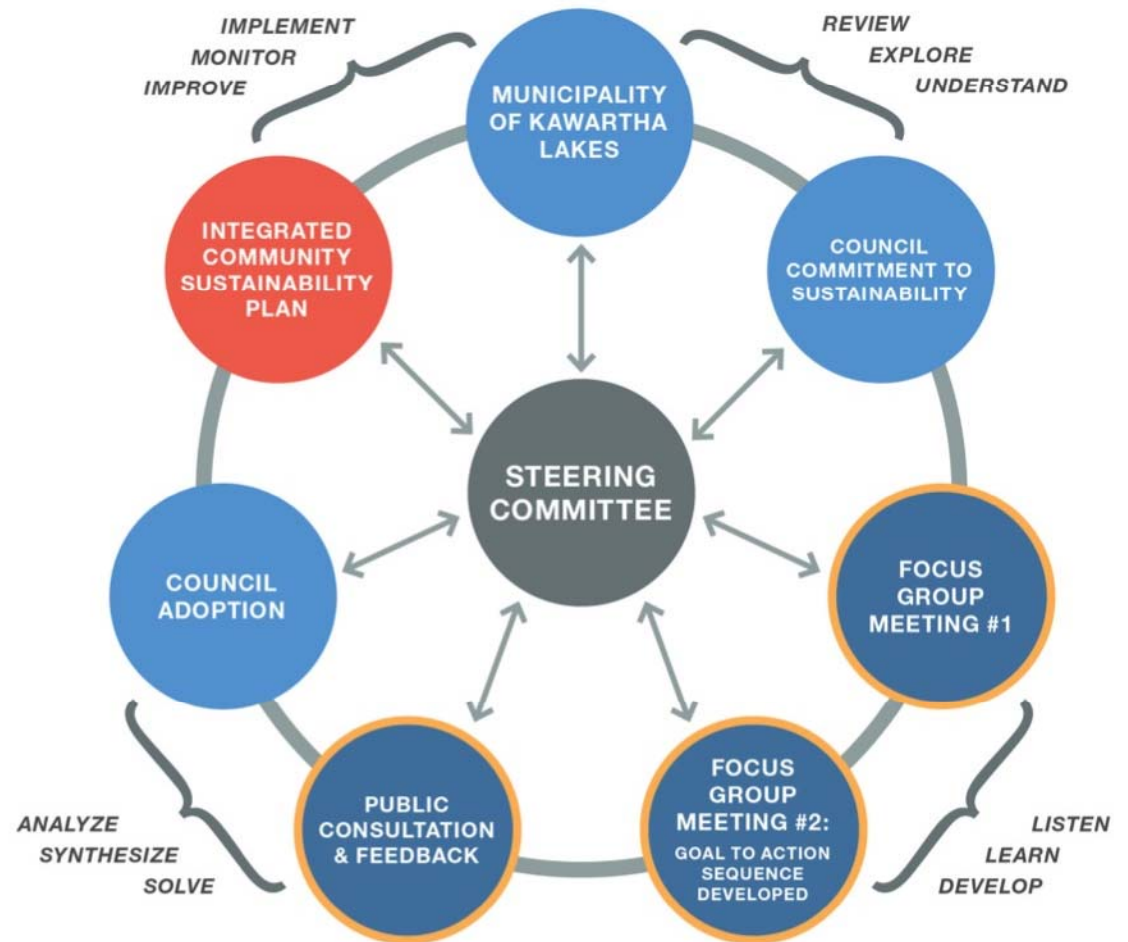


# PROJECT PROCESS

## Spatial & Urban Plans for Kolašin & Šavnik



## City of Kawartha Lakes Integrated Community Sustainability Plan





# KEY ACHIEVEMENTS

## Spatial & Urban Plans for Kolašin & Šavnik

- Public consultation process **adopted** as a model for future World Bank projects
- Defines **vision**, **strategic** choices, **principles** for 20 year growth
- Reverses **outmigration** through nodal development
- Outlines year round **economic** opportunities
- **Synchronizes** real estate development with infrastructure improvements

## City of Kawartha Lakes Integrated Community Sustainability Plan

- Sustainability issues **prioritized** by community
- **Quantifies targets** for improvements in water and energy use, and waste reduction
- Identifies sustainable community infrastructure and policy **projects** for federal funding



# BENCHMARKS & TARGETS

## Spatial & Urban Plans for Kolašin & Šavnik

### *Kolasin:*

- 60 – 65% increase in **Activity Rate** to 2025 (average 5% per annum)
- Target 30% reduction in **water demand** (in-spite of population growth) through efficiencies in distribution
- Target 30% growth in **local renewable energy** production

### *Savnik:*

- 104 – 140% increase in **Activity Rate** to 2025 (average 9.5% per annum)
- Target 55% reduction in **water demand** (in-spite of population growth) through efficiencies in distribution
- Target of 65% of **local renewable energy** production fed into the grid

## City of Kawartha Lakes Integrated Community Sustainability Plan

- Targeting 50% improvement in **water** distribution loss in 10 years
- 80% reduction in **Green House Gas emissions** by 2050
- 60% **waste** diversion in 10 years





# PROJECT HIGHLIGHTS

## The Al Ain Wildlife Park and Resort (AWPR), UAE

- **Sustainability Consultants** for a 100 hectare wildlife park including
  - 3 wildlife desert areas
  - A learning centre and interpretive program
  - Hotel
  - Casino
  - Retail amenities
  - 2 residential communities
  - Onsite transportation systems
- Sustainability balances environmental impacts, financial stability and social responsibility:
  - **Energy** generated onsite through renewable sources
  - **Rainwater** capture & greywater recycling to reduce demand
  - Local renewable, recycled, and recyclable **materials** used
- **Design – driven process**



# ACHIEVEMENTS

## The Al Ain Wildlife Park and Resort (AWPR), UAE

- Employed the **One Planet Living** framework to address 10 principles of sustainability
- **LEED** checklisting used to inform the development of the draft **Estidama Pearl** framework





## ACHIEVEMENTS cont.

## The Al Ain Wildlife Park and Resort (AWPR), UAE

- Developed **Sustainability Implementation Plan** providing measureable targets

[illegible]

# BENCHMARKS & TARGETS

## The Al Ain Wildlife Park and Resort (AWPR), UAE

### Irrigation Water

- **60% reduction** achieved through design guidelines
  - advanced sub-surface irrigation system

### Energy

- **50% reduction** in cooling demand
  - appropriate building orientation
  - high performance building envelopes
  - proper size and location for windows
  - thorough shading

### Waste

- **95% solid waste diverted** from landfill
  - demolition waste recycled site-wide
  - solid waste recycling combined with municipal recycling system
  - on-site composting system using advanced
  - anaerobic digestion technology
  - waste-to energy system being explored to drastically reduce landfill dumping



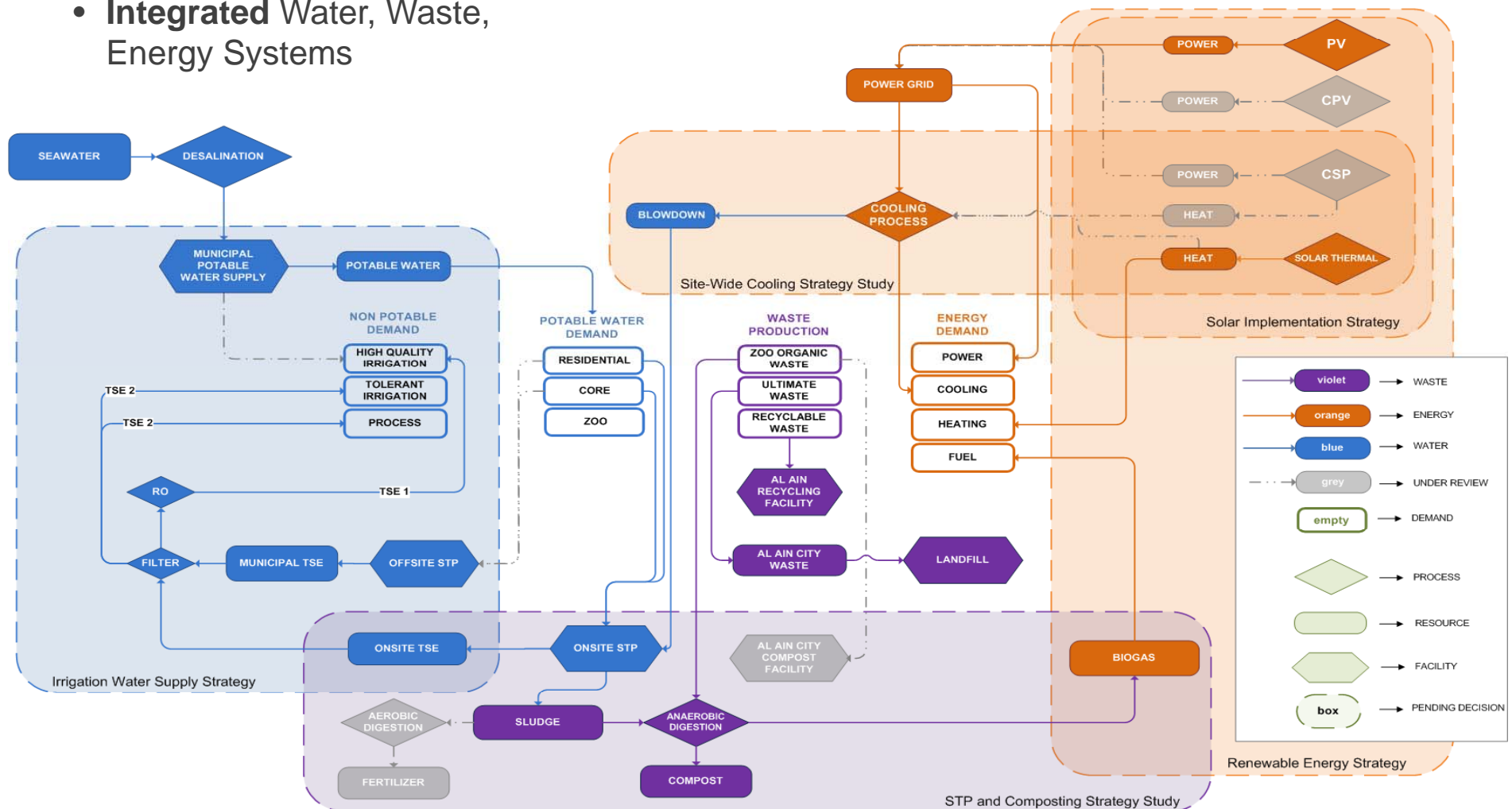


# BENCHMARKS & TARGETS cont.

## The Al Ain Wildlife Park and Resort (AWPR), UAE

### Close-looped System

- Integrated Water, Waste, Energy Systems



Sustainability =  
Adaptability/Flexibility

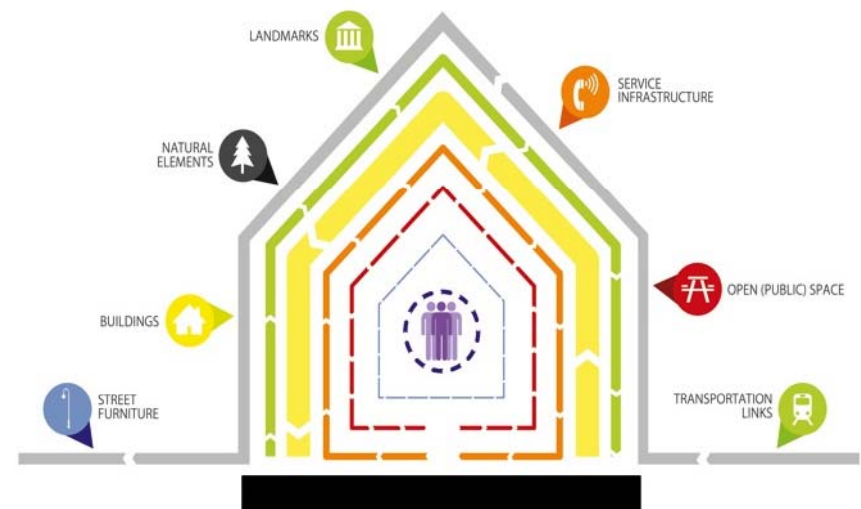




# ADAPTABILITY / FLEXIBILITY

Nightingale Associates – IBI Group has signed a Collaboration agreement with Loughborough University (UK) to be part of their knowledge transfer project to develop Adaptable Futures Toolkit for use in design.

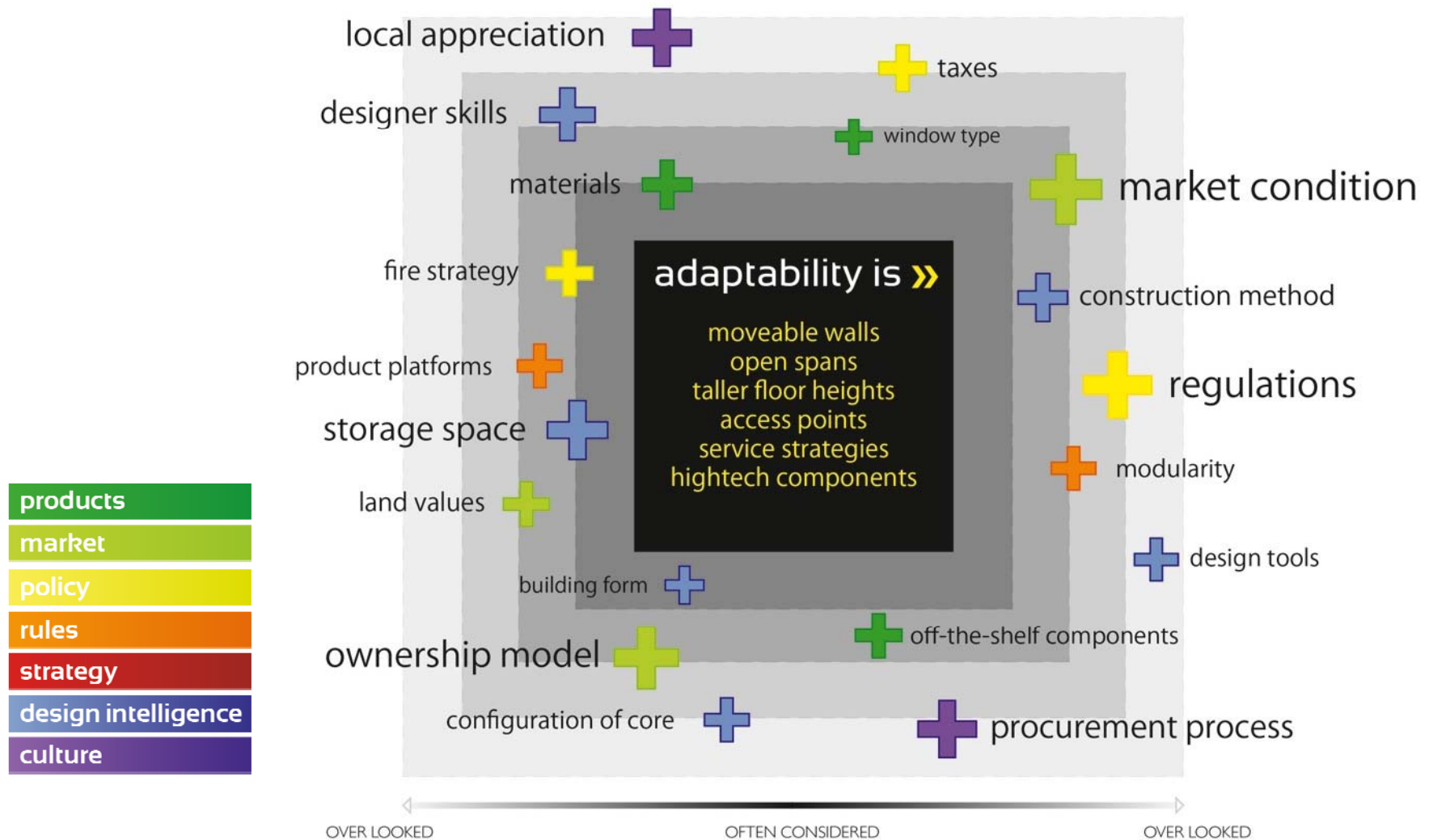
[www.adaptablefutures.com](http://www.adaptablefutures.com)



## BUILDING LAYERS



# ADAPTABILITY / FLEXIBILITY





# ADAPTABILITY / FLEXIBILITY

## Participating Organisations

Loughborough University

Nightingale Associates

3D Reid Architects

Assistant

Buro Happold

FAT

The Royal Danish Academy of Fine Arts

The University of Tokyo

Vandkunsten



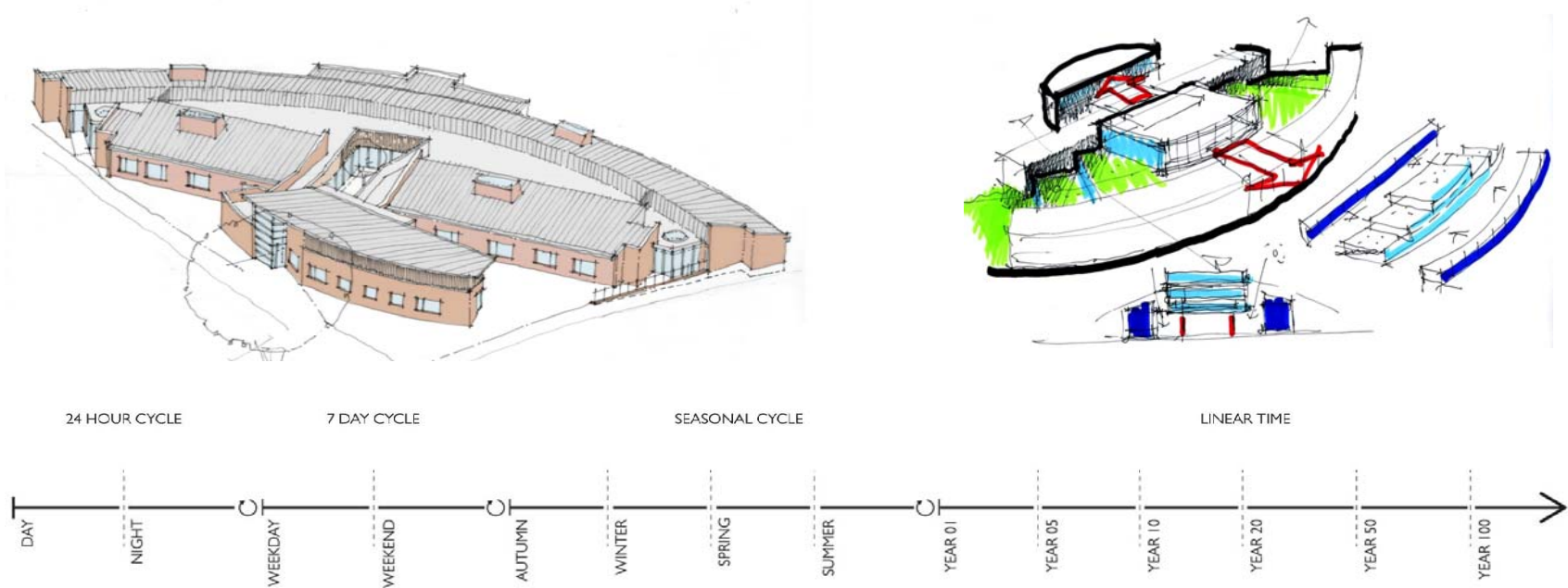
*(Source: Hertzberger, 1991)*

**unpredictable use of space?**

# ADAPTABILITY / FLEXIBILITY

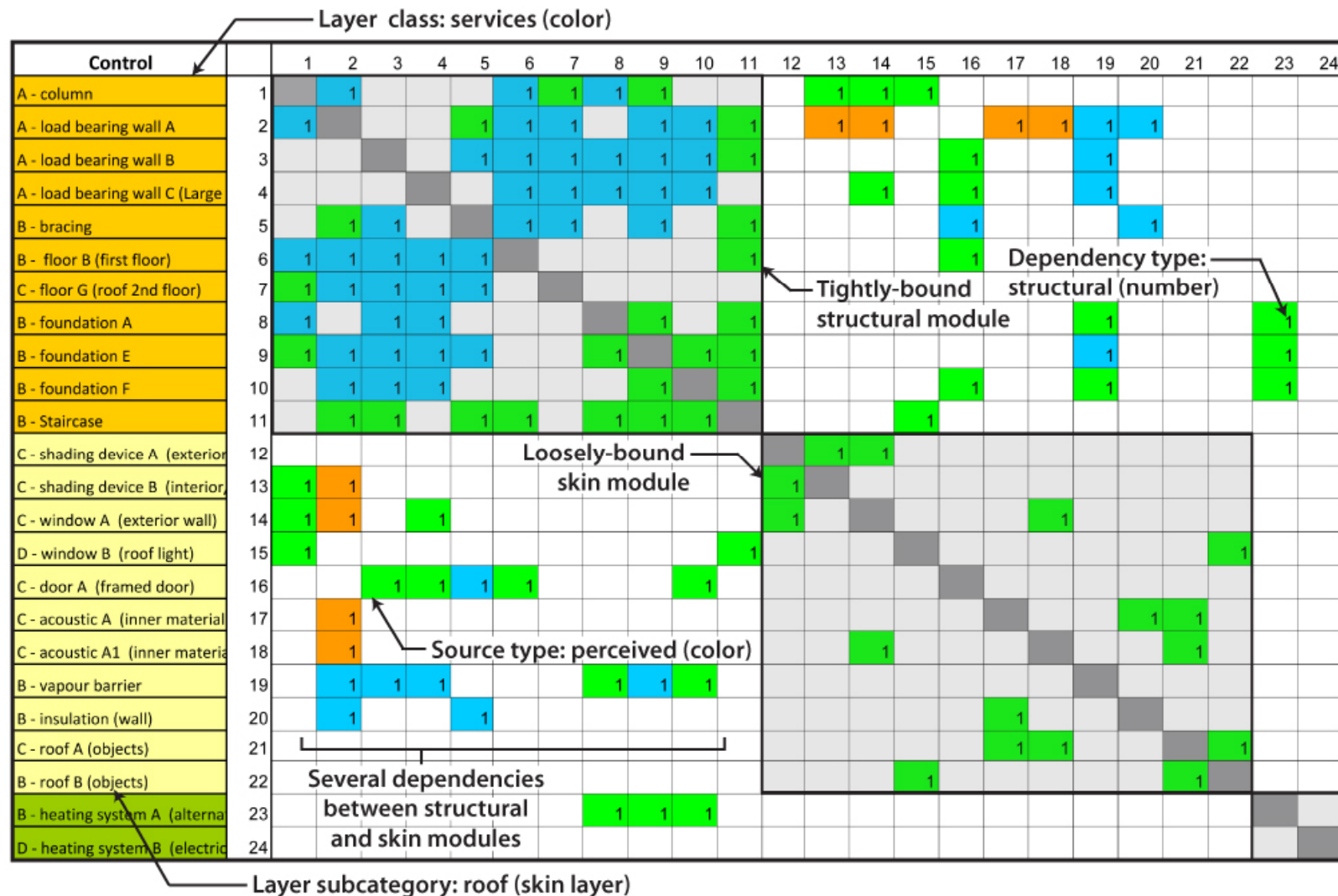
## Design stage

- The Healthcare design project - St. Mary's Hospital, Kettering - Old Persons Unit. is to be studied in more detail by the AF team through the design process. So far this has taken the form of a Workshop and regular Skype discussions.





# ADAPTABILITY / FLEXIBILITY



# COMPLETED AND ONGOING

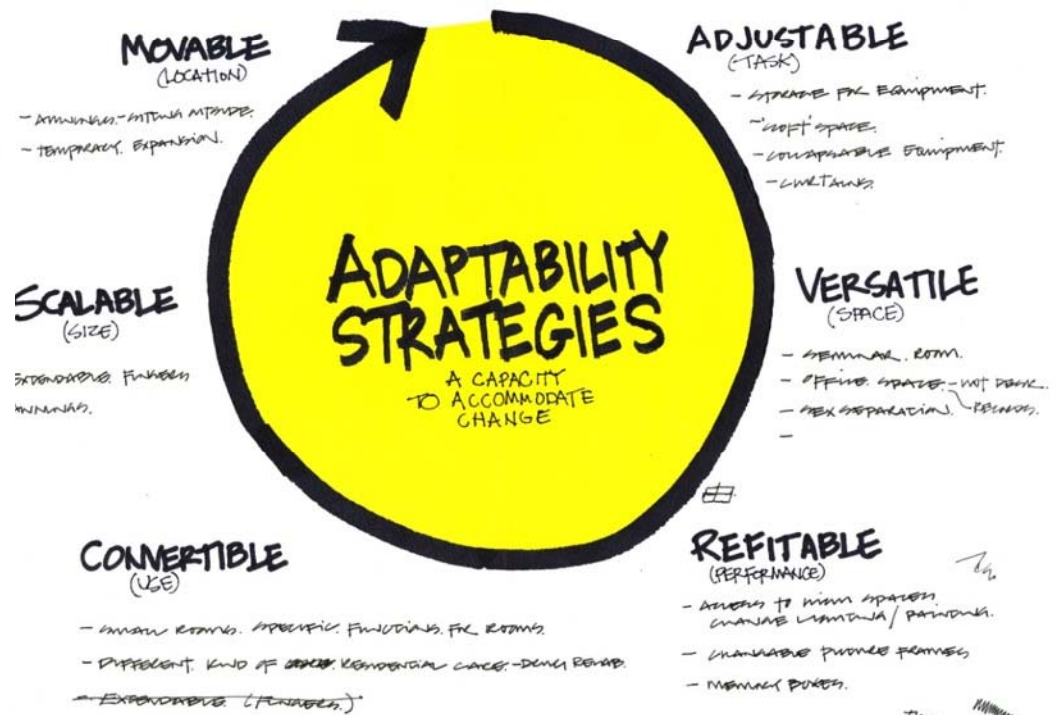
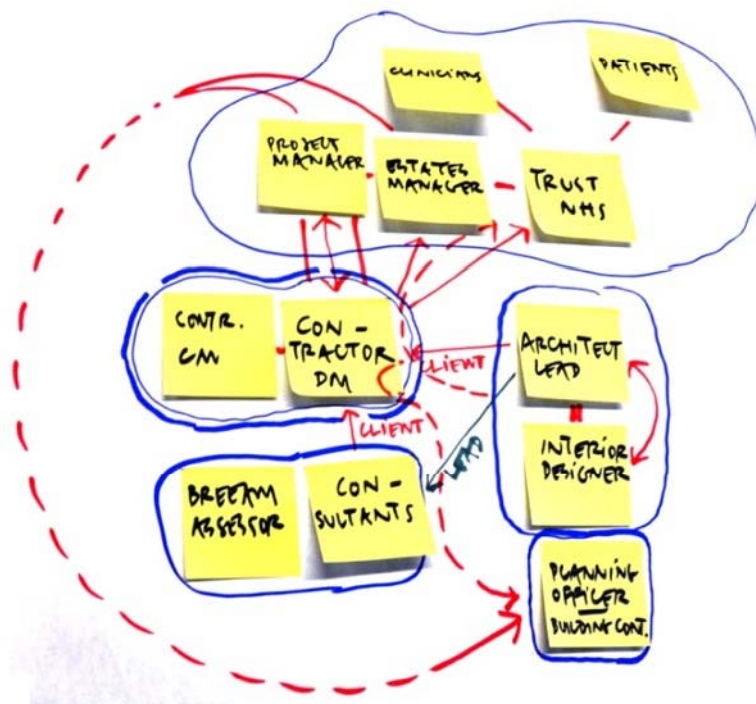
- Case studies for Gateway College and King's College Jubilee Wing – with a summary on Adaptable Futures website.
- Case study for Malaysian Hospital. NA-IBI has presented the adaptable thinking on this project at the initial AF meeting. Discussions with Loughborough since. Still to be reported on AF web site.





# DESIGN STAGE

- To encourage application in Nightingale – IBI Group Education and Science sectors, they have held one off workshops with the LU - Adaptable Futures group on Baron Road Primary school and Bio innovation Centre laboratory building.





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The *adaptable futures* research group at Loughborough University unpacks adaptability in detail looking at the complex web of dependencies that induce, hinder, and accommodate change. *Learn more about our work.*

[www.adaptablefutures.com](http://www.adaptablefutures.com)





Thank you

