



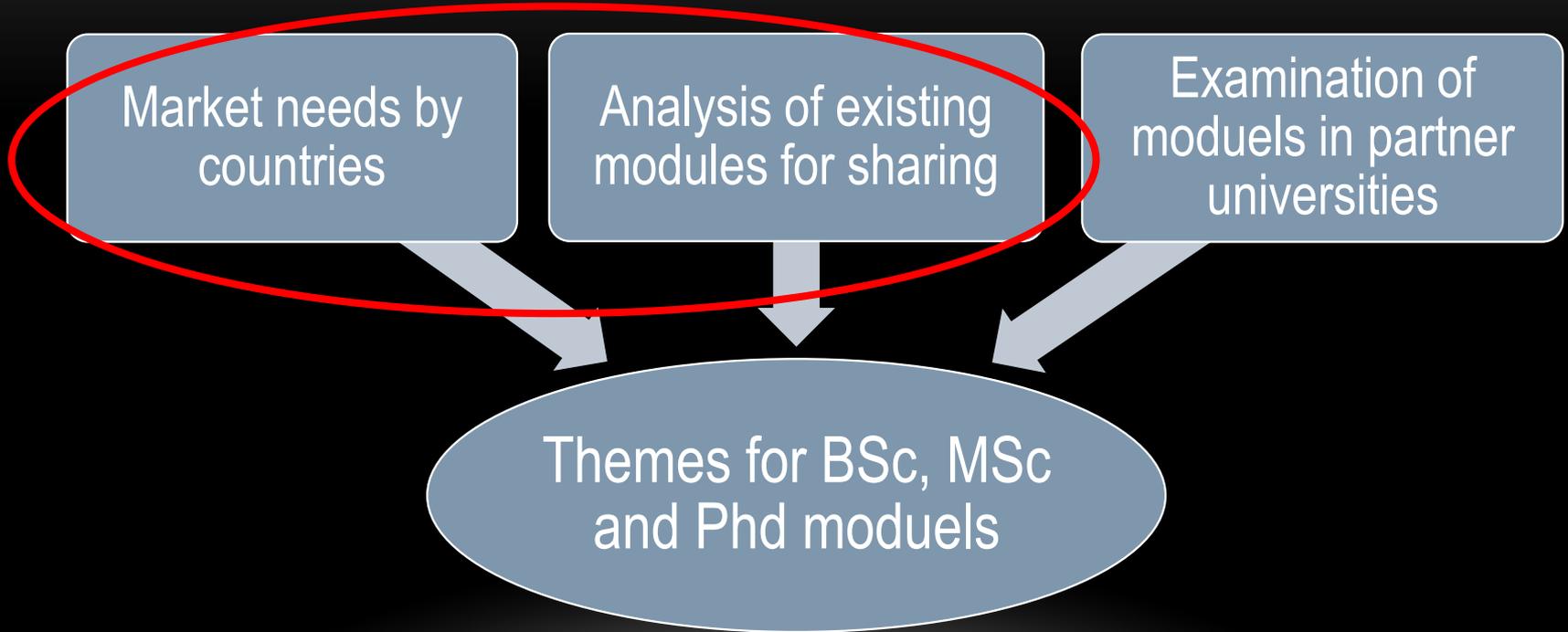
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WP-2 MARKET NEED ANALYSIS FOR BUILT ENVIRONMENT HIGHER EDUCATION IN ESTONIA

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PROPOSED FRAMEWORK BY SALFORD



ANAYSIS OF MARKET NEEDS

OVERVIEW OF ESTONIAN BUILT ENVIRONMENT

- Very different types of buildings
- Very different owners through lifecycle
- most of the housing stock (96%) is privately owned
- Legally each owner of a building is fully responsible for his/her property, accordingly also for the quality of the building – its structures and suitability for purpose

This has affected the quality of whole built environment

GENERAL NEEDS FOR RENOVATION

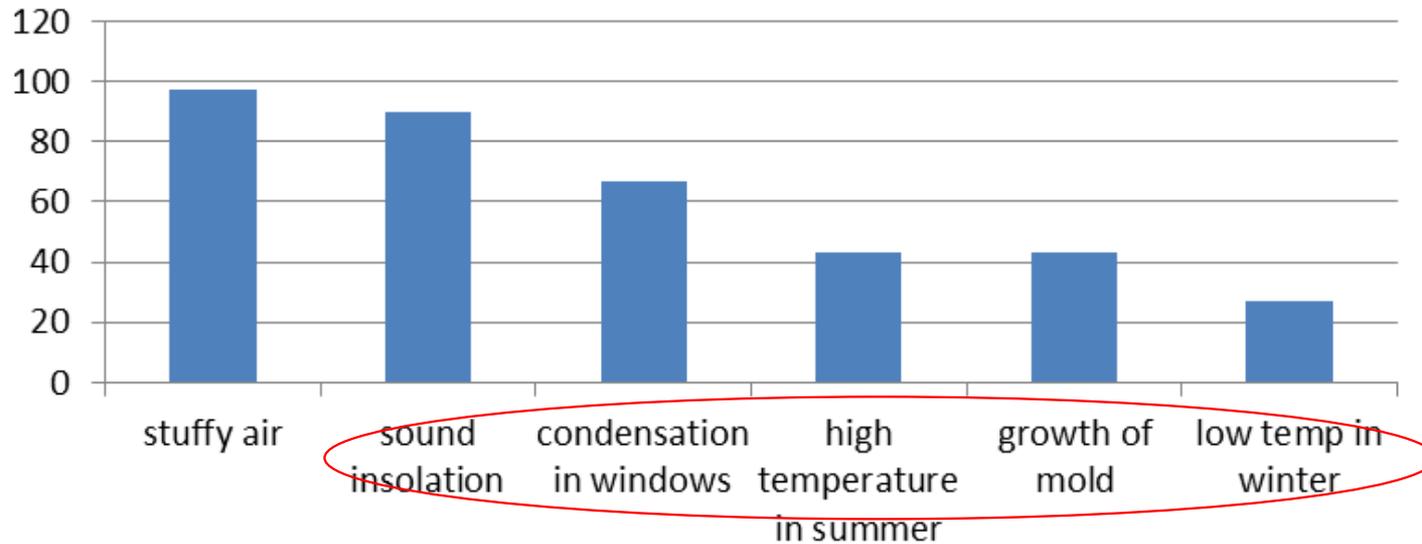
- Estonia's main problems concern quality and energy-efficiency of most of the dwellings.
 - 71% of the population in multi-storey buildings,
 - 20% in detached or terraced houses
 - 9% in farmhouses (9%).
- 84% of apartment buildings were built between 1961-1990.
- Today the first dwellings from this “constructional wave” are approaching the end of their design life (intended by the designer).

TYPICAL STRUCTURAL SOLUTIONS

- prefabricated concrete large-panels
- brick (load bearing walls typically silicate bricks, facades silicate bricks or ceramic bricks)
- large-blocks made of gas concrete (gas silicate or oil shale ash gas concrete)
- wood (timber frame, log): typically built mainly before 1940
- All these buildings need extensive renovation.

MAIN PROBLEMS

Figure 2: Problems of households in pre-fab buildings (in %)



NEED IN RENOVATION & KNOWLEDGE

- improvement of indoor climate (hygiene and health aspects)
- improvement of energy performance of buildings and HVAC systems
- improvement of architectural planning, visual quality, overall living quality, and additional comfort

Specifics of cold climate in renovation

- performance of ventilation
- hydrothermal performance of building envelope
- performance of heating systems

ANALYSIS OF EXISTING MODULES

BACHELORS / SPECIALISTS PROGRAMMES

Name of Study Programme	Type of Programme	Institution	Nominal Duration
Geomatics	bachelors	Estonian University of Life Sciences	3 years
Construction	Specialist / Professional higher education course	University of Applied Sciences	4 years
Applied architecture		University of Applied Sciences	
Applied geodesy		University of Applied Sciences	
Road engineering		University of Applied Sciences	
Landscape architecture	bachelors	Tallinn University of Technology	3 years

MASTERS PROGRAMMES - 1

Name of Study Programme	Type of Programme	Institution	Nominal Duration
Architecture and Urban Design	Integrated bachelors & masters	Estonian Academy of Arts	5 years
Town landscapes	masters	Estonian Academy of Arts	2 years
Urban studies		Estonian Academy of Arts	

MASTERS PROGRAMMES - 2

Name of Study Programme	Type of Programme	Institution	Nominal Duration
Civil Engineering (Rural Building)	Integrated bachelors & masters	Estonian University of Life Sciences	5 years
Water Management		Estonian University of Life Sciences	
Geodesy	masters	Estonian University of Life Sciences	2 years
Real estate planning		Estonian University of Life Sciences	
Land management		Estonian University of Life Sciences	
Landscape architecture		Estonian University of Life Sciences	

MASTERS PROGRAMMES - 3

Name of Study Programme	Type of Programme	Institution	Nominal Duration
Environmental engineering	Integrated bachelors & masters	Tallinn University of Technology	5 years
Transportation engineering		Tallinn University of Technology	
Civil engineering		Tallinn University of Technology	
Environmental Engineering	masters	Tallinn University of Technology	2 years
Landscape Architecture		Tallinn University of Technology	
Transport Engineering		Tallinn University of Technology	
Civil and Building Engineering		Tallinn University of Technology	

PHD PROGRAMMES

Name of Study Programme	Type of Programme	Institution	Nominal Duration
Architecture and Urban Planning	doctoral	Estonian Academy of Arts	4 years
Civil and Environmental engineering	doctoral	Tallinn University of Technology	4 years

RECOMMENDED THEMES BY TUT

- Project Management in Construction
- Sustainable Investment in the Built Environment
- Sustainable renovation of houses
- Property life-cycle management
- Housing management
- Project Management for Construction Client
- Planning of Construction Site Management