Topics

- What is obsolescence?
- Why relevant?
- How can it be avoided, diagnosed and cured?
  → Conceptual model
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- Is the model useful and usable?
Introduction:
old, obsolete, improvement or demolition?

- Complex relation:
  - causes, intervening variables and effects
- Relation to previous research:
  - Upgrade or Replace?
- Research method:
  - literature / own research

What is obsolescence?

- process of declining performance, resulting in the end of the service life of buildings
  (not necessarily the end of the physical life!)
- serious threat to buildings and involved investments

What is obsolescence?

A variety of causes, intervening variables and effects

What is obsolescence?

A variety of causes:
- physical and behavioral
- internal and external

What is obsolescence?

A variety of intervening variables:
- building category
- building type
- tenure
- etc.

What is obsolescence?

A variety of effects:
- technical and economical
- building and location
Endogenous property

Conceptual model

Physical

Endogenous

Building obsolescence by:
- Ageing, wear, weathering, fatigue.
- Poor design/construction/ maintenance management

Location obsolescence by:
- Impact of nearby construction, traffic, seismic activity etc.
- Government regulation, taxation, rising standards, technology

Exogenous

Building obsolescence by:
- Maladministration, misuse, overload
- Changed functions, use, occupants behaviour.

Location obsolescence by:
- Failing, social deprivation, criminality, urban blight
- Shrinking demand, competitive options, technology, fashion

Behavioural

- Ageing, wear, weathering, fatigue.
- Poor design/construction/maintenance management

- Maladministration, misuse, overload
- Changed functions, use, occupants behaviour.

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Avoiding housing obsolescence

Testing the conceptual model

Case studies
- demolition
- improvement

Impact of nearby and exogenous factors
- impact on performance
- impact on service life
- impact on returns
- impact on unnecessary waste
→ Threat to buildings and involved investments

Obsolescence and service life

Why relevant?
- impact on performance
- impact on service life
- impact on returns
- impact on unnecessary waste

Avoiding obsolescence

Prevention:
- analysis and design

Diagnosis:
- systematic monitoring

Cure:
- redesign / transformation / demolition etc

Obsolescence and life cycle

Problem source 1:
- Poor construction?
  - Yes
  - No

Problem source 2:
- Poor design?
  - Yes
  - No

Problem source 3:
- Location obsolescence?
  - Yes
  - No

Problem source 4:
- Behavioural complexity
  - Yes
  - No

Conceptual model

property control

Endogenous

Exogenous

Physical

Behavioural

A
Building obsolescence by:
- Ageing, wear, weathering, fatigue.
- Poor design/construction/structure/infrastructure/management.

B
Location obsolescence by:
- Impact of nearby construction, traffic, seismic activity etc.
- Government regulation, national standards, technology.

C
Building obsolescence by:
- Malfunction, misuse, overload.
- Changed functions, use, occupants' behaviour.

D
Location obsolescence by:
- Filtering, social deprivation, crime, pollution, shrinking demand, competitive options, technology, fashion.
Testing the conceptual model, steps (1):

- Description of building:
  - actual building state using variables in model
  - Analysis causal relations
    - relating state to variables and contextual conditions
- Description of process:
  - management and decision making process
  - Analysis causal relations
    - relating state to decision-making

Testing the conceptual model, steps (2):

Comparison of case studies results:
- are variables relevant?
- are variables missing?
- are relation patterns similar?

Invitation

Interested?

Invitation to participate:
- in the testing and elaboration of the model
- exchange of the results

A.F.Thomsen@tudelft.nl
C.L.vanderFlier@tudelft.nl