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Analysis of contexts and conceptual variables for a sustainable approach into systemic model

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Key points

- Design & Sustainability Context. Preliminary approach
- Strategic vision: design for sustainability
  The need of a Systemic Model
- The concept of sustainability embedded in the model
  - Systems thinking in the proposal
  - Study Case
  - Conclusions and future research
1. Design & Sustainability Context. Preliminary approach
   a. Multiobjective design
      - Physical performance and basic design criteria.
      - Sustainability.
   b. Considering multiple sources of uncertainty
   c. ¿Where? Early stages.

2. Strategic vision: design for sustainability
   d. The need of a Model

3. The concept of sustainability embedded in the model
   a. The Systemic Concurrent Design Model (Hernandis, 1999)
   b. The proposed approach: reducing uncertainty / filtering the outer system
   c. Material and immaterial issues

4. Systems thinking in the proposal
The need of a Model – The Concurrent Design Model

Identifying criteria from the Outer System to validate the assumptions and knowledge about the concepts identified and the perceived reality
The habitable spaces are increasingly smaller and gardens tend to disappear. Vegetable patches and green spaces that were common in other times, are no longer there.
Outer System: the beginning to get external data that affect the problem
Environmental and basic design aspects that provide considerations and constraints that influence the design problem.
Study Case – Objectives on Basic Subsystems

- **Formal Subsystem**
  - Vegetable component
  - Vegetable component container
  - Tools, Working elements
  - Container, organic material

- **Functional Subsystem**
  - Harvested container
  - Lighting System
  - Fumigation System
  - Thermometer Thermostat
  - Vegetable component container
  - Moisture Meter

- **Ergonomic Subsystem**
  - User
  - Work Surface
  - Tools, Working elements
  - Source artificial
  - Ambient lighting
  - Organic material collector
Study Case – The Design space

Formal Subsystem

Functional Subsystem

Ergonomic Subsystem

Design Space

Polyhedron of Design

1. **Design & Sustainability Context:** multiobjective design & multiple sources of uncertainty – *early stages.*

2. **Strategic vision:** The need of a Systemic Model → *framed*

3. **The concept of sustainability embedded in the model**

4. **Study Case:** Getting to the polyhedron of design.

5. **Future research:** *conceptual variables for a sustainable approach*
   - 5.1. Groups of variables and interactions (Experts, users/people)
   - 5.2. Immaterial issues (Emotional, spiritual, scale of values)
Thank you
Takk
Gracias

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