IHF-UlA Collaboration project

: reducing hospital operating cost through better design

Addressing the Challenge of Patient-Centered Care and Safety

2016 IHF Durban
40th World Hospital Congress
Containing cost of healthcare facilities through hospital design: a topic of global relevance in all socio-economic contexts

Hospital costs are progressively increasing
Containing the cost of healthcare facilities through hospital design: a topic of global relevance in all socio-economic contexts
UIA-IHF project: recommendations for reducing hospital cost through better design
Decisions assumed in the design process → Possible impact on cost containment → Cost items related to Life Cycle Cost

Systematic collection of international case studies (documented experiences)

- Norms and regulations
- Proceedings of conferences
- Design experiences
- Books
- Research

PRODUCTS

Best Practice Recommendations

Actions to be taken for containing investments cost, in use cost, operation and management cost, maintenance, updating and transformation cost, ....
Decision assumed in the design process

Cost items related to Life Cycle Cost

International case studies (documented experiences)

Open data base of Products

Best Practice Recommendations DATA BASE

The expected final result of the project
The phases of the project program

Collection of international case studies (Products)

Placing of the documented experiences (Products and Recommendations) in the corresponding cells of the Data Base
The framework for positioning all the “products” (case studies) in order to facilitate the consultation

<table>
<thead>
<tr>
<th>DECISIONS TO BE ASSUMED</th>
<th>BUILDING COSTS</th>
<th>IN USE COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of land</td>
<td>Construction cost</td>
<td>Cost of staff</td>
</tr>
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<td>Cost of land</td>
<td>Infrastructural costs</td>
<td>Management and maintenance cost</td>
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</tbody>
</table>

Cost items - related to Life Cycle Cost – to be contained

Decisions to be assumed in the different phases of the design process
Contribute to the definition of the importance level of each design decisional area that can influence the containment of cost items related to hospital life cycle cost.

Contribute to the definition of importance of each cost item that concurs to the effective dimension of the global life cycle cost of the hospital.

Matrix showing the interdependence between decisional areas and life cycle cost items.

Best Practice Recommendations
Best Practice quick consultation

DESCRIPTION OF THE “PRODUCT”
The database analyzes the real estate projects by identifying the relationships between functional areas that characterize the buildings, built surfaces, and the costs involved. The open database is implemented continuously through new operations and offers, to users, a database of public and private hospital investment transactions, as well as a decision-making simulation tool aimed at estimating future building projects, from feasibility phases to the stage of contract.

COST CONTAINMENT STRATEGIES APPLIED IN THE CASE STUDY OF THE “PRODUCT”
The product provides the data for achieving economic benefit.

DESIGN DECISIONS GENERATING COST REDUCTIONS
Pre programming – Feasibility study - Project program - Project

COST ISSUES SUBJECT OF COST REDUCTIONS
Construction Cost Value (Building Cost)
Definition of the priority importance of each cost item and each decisional area

<table>
<thead>
<tr>
<th>Decisional Area</th>
<th>Technical Costs</th>
<th>Building Costs</th>
<th>In Use Costs</th>
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<tbody>
<tr>
<td>PRE-PROGRAM.</td>
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<tr>
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Opinion leaders and experts
### Positioning of the case studies – best practices in the cells of the matrix

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#### Best Practices
- **Pre-Program**: 
  - Feasibility Study
  - Project Program
  - Project
  - Construction
  - Commiss.
Stakeholders and interested users of the best practices recommendations Data Base

friendly and easy access
The database analyzes the real estate projects by identifying the relationships between functional areas that characterize the buildings, built surfaces, and the costs involved. The open database is implemented continuously through new operations and offers, to users, a database of public and private hospital investment transactions, as well as a decision-making simulation tool aimed at estimating future building projects, from feasibility phase to the stage of contract.

The product provides the data for achieving economic benefit.

Pre programming – Feasibility study - Project program - Project

Construction Cost Value (Building Cost)
DESCRIPTION OF THE “PRODUCT”

The product consists in an **innovative building project**, which represents the case study that should be taken as reference for the project of a Public Building with a **high-energy efficiency and low environmental impact**.

COST CONTAINMENT STRATEGIES APPLIED IN THE CASE STUDY OF THE “PRODUCT”

Decisions taken in the pre-programming area are: an **Integrated Project Team (IPT)**; a **Source Evaluation Team**; the **DB methodology (Design Build)**; the way to implement a participatory process in order to better define the “Request for Proposals” (RFT).

DESIGN DECISIONS GENERATING COST REDUCTIONS

- **Pre programming - Project program - Project**

COST ITEMS SUBJECT OF COST REDUCTIONS

- **Energy costs – Sustainable Costs**
DESCRIPTION OF THE “PRODUCT”

The document is an international standard adopted in European Countries. It establishes conventions and procedures for the estimation of energy requirements of lighting in buildings. Spread sheets show the percentage of the cost reduction obtainable by changing the type of lighting systems.

COST CONTAINMENT STRATEGIES APPLIED IN THE CASE STUDY OF THE “PRODUCT”

The product can serve to identify best practices in decision-making actions referred to the reduction of cost for electric lighting of buildings. Graphs and default values for hospital lighting are included in the standard.

DESIGN DECISIONS GENERATING COST REDUCTIONS

Project – Commissioning Phase

COST ITEMS SUBJECT OF COST REDUCTIONS

Energy costs – Management and Maintenance costs

SUBJECT OF THE “PRODUCT”

Theoretical and Experimental evaluation of energy consumption for lighting of hospital buildings aimed at reducing energy costs and environmental impact (EU)
SUBJECT OF THE “PRODUCT”

Operation model for containing future HealthCare Design development and investment needs for the Kuopio University Hospital campus (FINLAND)

DESCRIPTION OF THE “PRODUCT”

The product presents an operation model finalized to achieve optimal work efficiency and a seamless chain of services that maximizes productivity and cost-savings.

COST CONTAINMENT STRATEGIES APPLIED IN THE CASE STUDY OF THE “PRODUCT”

The Master Plan attempts to integrate space design solutions with work processes in order to improve productivity and treatment effectiveness. Estate management, cost control and information management details are some of the most important details of the model. The product can serve to identify best practices in decision-making actions to be implemented to achieve cost containment or prevent cost increases.

DESIGN DECISIONS GENERATING COST REDUCTIONS

- Pre programming - Project program - Project

COST ITEMS SUBJECT OF COST REDUCTIONS

- In use costs - Social Costs
DESCRIPTION OF THE “PRODUCT”

The product contains a specific monitoring methodology based on indicators, aimed at controlling costs and performance during the design project, construction and full operation phase. In construction phase, “realization indicators” aims to compare costs of what will be built and costs of what has been programmed. In commissioning phase, “outcome indicators” aims to measure the effectiveness of the project, respect to the achievement of the objectives and specific "impact " indicators aimed to measure project's contribution to the improvement of the main demographic, economic and social variables.

SUBJECT OF THE “PRODUCT”

Operational contents expressed in the feasibility study for the expansion and renovation of an existing hospital building (ITALY)

COST CONTAINMENT STRATEGIES APPLIED IN THE CASE STUDY OF THE “PRODUCT”

The product is finalized to the control of intervention costs and to the “evaluation of actuation and of result” about an hospital building intervention.

DESIGN DECISIONS GENERATING COST REDUCTIONS

Feasibility study - Project program

COST ITEMS SUBJECT OF COST REDUCTIONS

Building Cost, Infrastructure Costs, In use Costs, Social Costs, Sustainability Costs
DESCRIPTION OF THE “PRODUCT”

The objective of the product is a literature survey for the identification of empirical evidence related to the advantages and disadvantages of single versus multiple-occupancy patient rooms in hospitals. Three substantive areas are identified for synthesis of the review: (a) first and operating cost of hospitals, (b) infection control, and (c) health care facility management and therapeutic impacts. This review highlights the need to consider room occupancy issues along with other patient care issues and environmental and management policies.

COST CONTAINMENT STRATEGIES APPLIED IN THE CASE STUDY OF THE “PRODUCT”

The product provides the data for achieving economic benefit. In particular the analysis reveals that private patient rooms reduce the risk of hospital-acquired infections, allow for greater flexibility in operation and management, and have positive therapeutic impacts on patients with direct impact on cost issues.

DESIGN DECISIONS GENERATING COST REDUCTIONS

Project program - Project

COST ITEMS SUBJECT OF COST REDUCTIONS

Staff costs – Safety/security costs

(IHF DURBAN 40th World Hospital Congress 2016)