Sustainable and affordable innovations in Healthcare
Geneva Health Forum April 19-20-21 2016

WS01
Reducing hospital cost through design
DESIGN DECISIONS AFFECT HOSPITAL COSTS

OBJECTIVE OF THE PROGRAM
To define best practice recommendations for assuming strategic design decisions in order to contain hospitals life cycle cost
Program Steps:

**Step 1:** Each expert looks for *products* related to the containment cost in Hospital Buildings (eventually involving other experts with direct experience).

**Step 2:** Each expert puts in a "summary sheet" the principal information of the collected *products*.

**Step 3:** Evaluation of *products* by experts and selection of significant case studies.

**Step 4:** Placing of each product in the matrix cell corresponding to the cost item subject of containment.

**Step 5:** Elaboration of a Database containing all collected *products* in a structured form for a friendly consultation.

**Step 6:** Transferring of *products* in Best Practices Recommendations.
EVOLUTION OF HOSPITAL DESIGN APPROACHES

Hospital Project → Hospital Building

Functionalist Design Approach → "Machine à guérir"

Evidence Based Design → Patient centered hospital

Emphasis on New Technologies in the hospital project → Smart Hospital

The process organization generate the project → Smart Healthcare Service (efficiency, productivity, sustainability)
DIFFERENT USE OF THE "BEST PRACTICE DATA BASE" BY DIFFERENT STAKEHOLDERS

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<th>TECHNICAL COSTS</th>
<th>BUILDING COSTS</th>
<th>IN USE COSTS</th>
<th>SOCIAL COSTS</th>
<th>SUSTAINABILITY COSTS</th>
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<td>Cost of land</td>
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RECOMMENDATIONS FOR ORIENTING DESIGN DECISIONS

ENERGY MANAGER

HOSPITAL MANAGER

PROJECT MANAGER

MAINTENANCE MANAGEMENT

PUBLIC CLIENT

PRIVAT CLIENT
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.

SUBJECT OF THE “PRODUCT”

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

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 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.

SUBJECT OF THE "PRODUCT"

Experimental building project aimed at reducing energy costs (Department of Energy) (USA)

COST CONTAINMENT STRATEGIES APPLIED IN THE CASE STUDY OF THE "PRODUCT"

Decisions taken in the preprogramming 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" (RFP).

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 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.

DESIGN DECISIONS GENERATING COST REDUCTIONS

Pre programming – Feasibility study - Project program - Project

COST ITEMS SUBJECT OF COST REDUCTIONS

Construction Cost Value (Building Cost)

COST CONTAINMENT STRATEGIES APPLIED IN THE CASE STUDY OF THE "PRODUCT"

The product provides the data for achieving economic benefit.

DATA BASE AND SIMULATION TOOL FOR COST CONTROL AND CONTAINMENT IN HEALTHCARE FACILITIES OSCIMES® DEVELOPED BY ANAP (FRANCE)
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.

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

GUIDELINES OR RECOMMENDATIONS

DESIGN DECISIONS GENERATING COST REDUCTIONS

Project – Commissioning Phase

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.

COST ITEMS SUBJECT OF COST REDUCTIONS

Energy costs – Management and Maintenance 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.

COST ITEMS SUBJECT OF COST REDUCTIONS
Staff costs – Safety/security costs