



HosPilot

Intelligent energy efficiency
control in hospitals

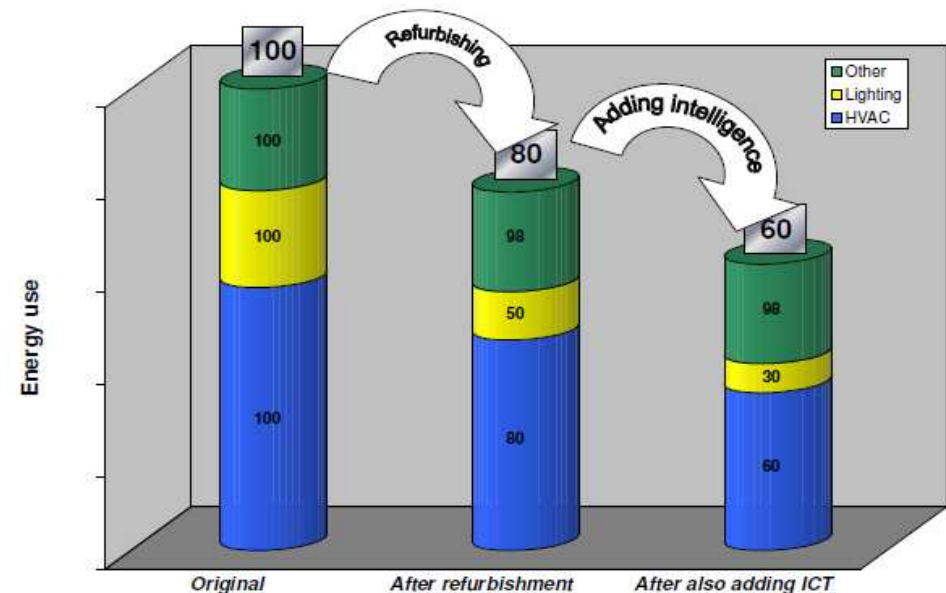
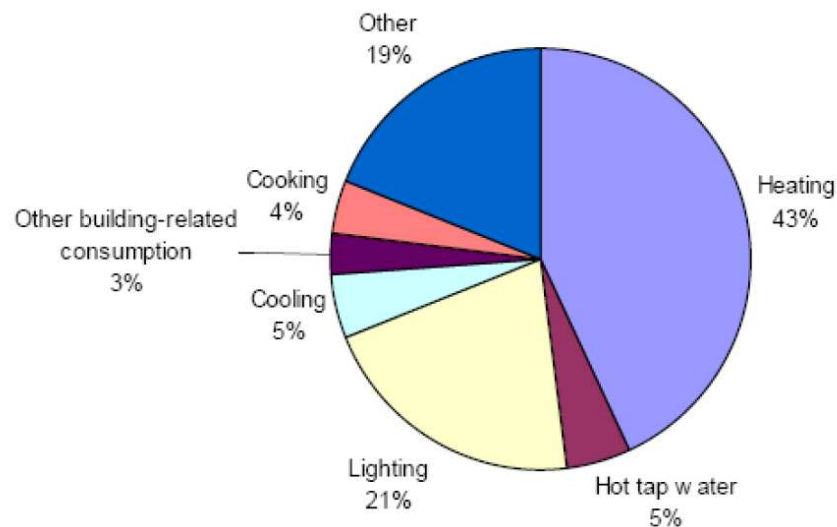
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CEF-5

Project description



What is HosPilot

- HosPilot is focused on energy efficiency in hospitals
- Main goal of the project is to demonstrate and validate a methodology for proposing energy efficient solutions for hospitals
- Demonstration through three pilot sites
- Focus on lighting, HVAC, controls and monitoring



Project rationale



Why are we doing it

- The methodology will be applicable everywhere in Europe
- Drive towards energy savings
- Hospitals are measure of well being of the society
- Some hospitals do not comply with the legislations

- It will stimulate hospitals to get refurbished and thus improving the well being and reducing global energy consumption

Project essentials



Strategic objective

More efficient use of energy while improving the comfort of the end users in the hospital environment

Main goal

To develop an energy reduction service and to prove that it fulfills the project objective

Partners and coordinator



Partners

Philips Lighting, NL

Philips Iberica S.A.U., ES

Acciona Infraestructuras S.A., ES

Fundacion Labein, ES

Valtion Teknillinen Tutkimuskeskus, FI

Centre Scientifique et Technique du Batiment, FR

Universitair Medisch Centrum Groningen, NL

Servicio Riojano de Salud, ES

Insinööritoimisto Olof Granlund Oy, FI

Hospital District of South Ostrobothnian, FI

Enleo, MN

Coordinator

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Pilots



Universitair Medisch
Centrum Groningen

THE NETHERLANDS



Hospital San Pedro,
Logroño

SPAIN



Hospital District of South
Ostrobothnia

FINLAND

Pilot sites

- Good geographical spread for pan-European testing
- Very big hospitals
- Very versatile health establishments
- Orientation towards energy efficiency
- Good conditions for installing pilot sites

Project plan



Project duration

3 years

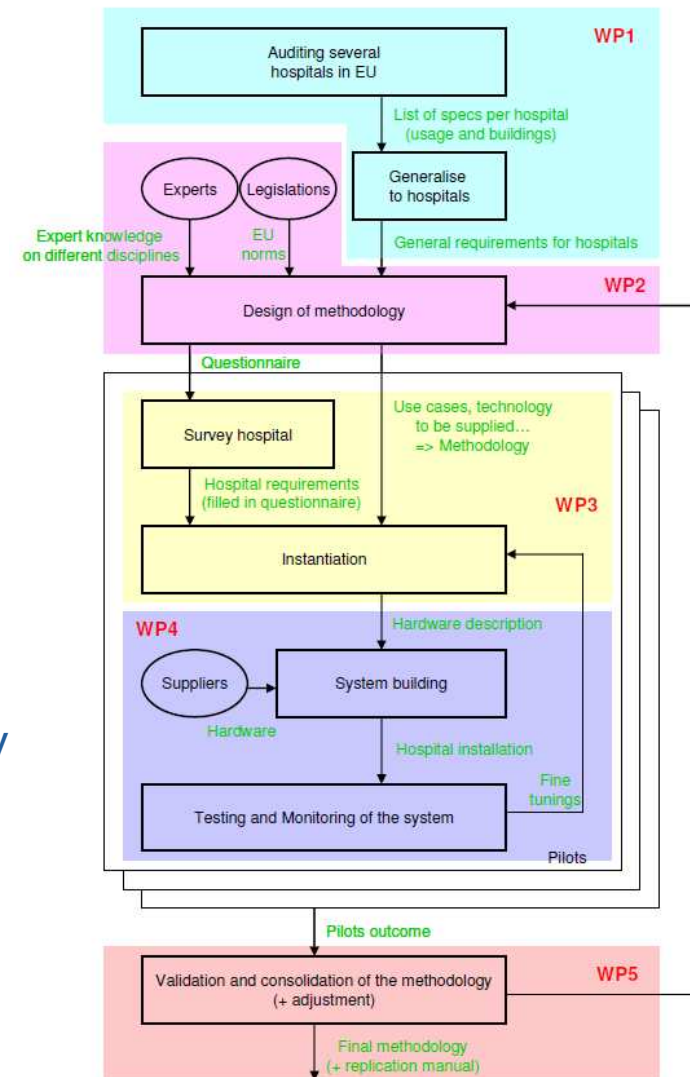
Project started in March 2009

Timing

1st year: Making methodology

2nd year: Pilot implementation

3rd year: Monitoring and improving methodology



WP6: Dissemination/Promotion
WP7: Project management

What has been done



A lot has been done

- State of the art analysis
- Audit in 6 hospitals
- List of the hospital rooms with requirements
- The first version of the methodology is ready
- Pilot definition has started as planned
- Extensive public exposure (events and conferences, press releases, web site, contacts, LinkedIn community...)

www.hospilot.eu

Analysis of the hospitals



6 hospitals visited and audited

- Lot of data => hospitals are very complex and versatile environments
- Hospital areas: hotel-like, office-like, hospital specific and parking
- Different needs of hospital users: patients, medical staff and visitors
- Hospitals know their total energy consumption, but not partial
- Human factor is very important in energy saving measures
- Energy saving is often not the top priority of the medical staff
- Surprising practical issues

List of room types



A list of all room types with the requirements

- All room types merged, analyzed and systematized
 - List of 53 different room types
 - Requirements – norms and usage
 - Lighting and HVAC
-
- Result -> list of all room types that appear in European hospitals, with their inherent requirements

Room Type	Area	Requirements										HVAC					
		Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Indoor temperature	Relative humidity	CO2			
Admittance																	
Archive																	
Bedroom	200	2000	80	25	N	N	N	N	N	Y				27	21	?	
Examination room	300	4000	90		Y	Y	N	N	N	N	N	N	N	26	21		
Chapel	5	4000	90		N	Y	N	N	N	N	N	N	N				
Control room (medical)	300	3000	80	20	Y	Y	Y	Y	Y	Y	Y	N	N	26	21		
Equipment room	500	3000	80	18	Y	Y	N	N	N	N	N	N	N				
Classroom	300	3000	80	18	N	N	N	N	N	Y	N	N	N	27	21	?	
Dressing room	300	3000	80	22	N	N	N	N	N	Y	N	N	N	26	23		
Education room	500	3000	80	18	Y	Y	N	N	N	Y	N	N	N	26	21		
Family room	300	3000	80	25	N	Y	N	N	N	N	N	N	N	26	22		
Infrastructure equipment	300	4000	80	25	N	N	N	N	N	Y	N	N	N	26	18		
Intensive care	300	3000	80	18	Y	Y	N	N	N	N	N	N	N	26	22		
Intensive care (children)	300	3000	80	18	Y	Y	N	N	N	N	N	N	N	26	24		

HosPilot methodology



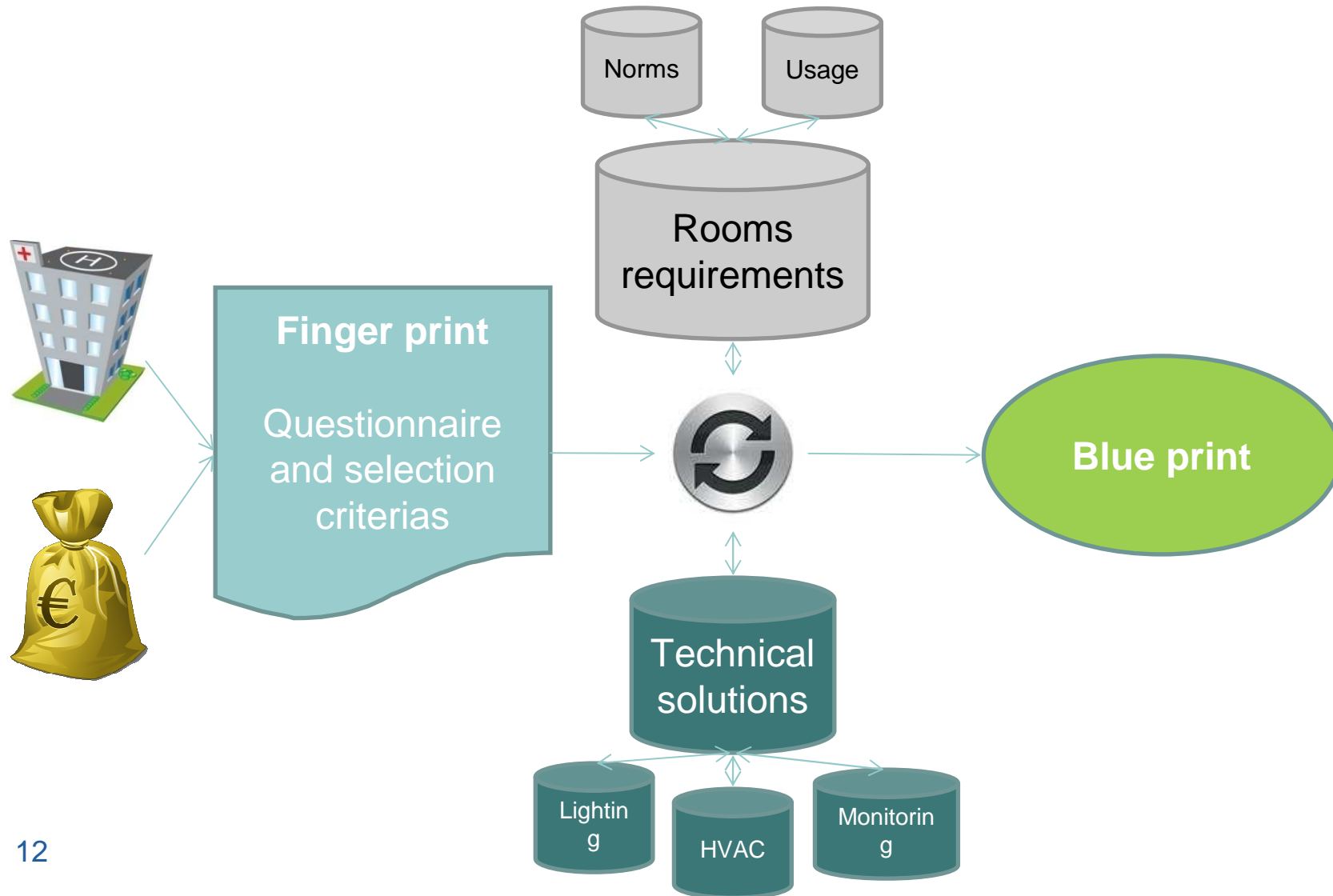
What is the methodology

- Methodology provides a hardware description for an energy efficient system for any hospital, based on general requirements and specific requirements of that hospital
- Consists of questionnaire, decision logic and technical solutions
- Its final form will be an expert system (software tool)

Novelty

- Starting point: off-the-shelf technologies
- Considers energy efficient installations in all the domains (lighting, HVAC, control strategies and system monitoring)
- Made by combining expert knowledge of all the partners

Methodology structure



Future plans



Project will last two more years

- Implementation and monitoring of the pilots
- Making a software tool from methodology
- Improving and fine tuning of the methodology
- Dissemination and exploitation of the methodology

Conclusions



HosPilot will make hospitals nicer and more energy efficient

- HosPilot will help the decision makers to choose the most energy efficient technical solutions for refurbishing hospitals
- Methodology will be made and tested in three pilot hospitals
- A lot has been already done on making the methodology
- Solutions are oriented towards energy efficiency and increase of hospital comfort

