


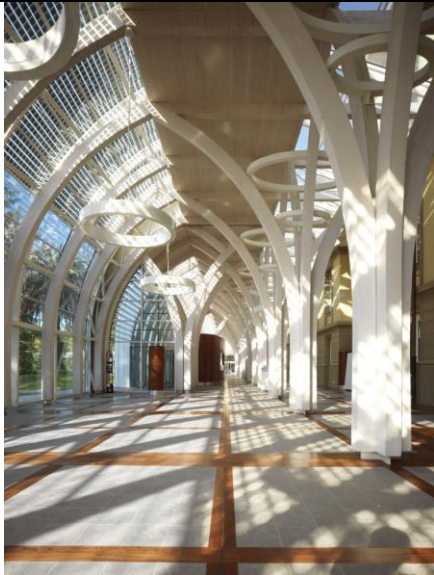


**BUILDING GOOD PRACTICE**  
**Villa Ognissanti – Florence, Italy**

<b>GENERAL INFORMATION</b>				
<b>Name of the public building renovation:</b>	<b>Renovation of Villa Ognissanti, building of a new pavilion and renovation of CHILDREN HOSPITAL MEYER, Florence</b>			
<b>Building Good Practice number (example BGP n°1 – Bordeaux)</b>	HB n.2 - AFE			
<b>Historical building sub-group</b>				
<b>Description</b>	Photo			
	 			
	 			
	<table border="1" style="width: 100%;"> <tr> <td style="width: 25%;"><b>Address</b></td> <td>Italy, Viale Gaetano Pieraccini, 24 50141 Florence</td> </tr> <tr> <td><b>Public sector contractor</b></td> <td>Hospital Meyer, Meyer Foundation (Owner)</td> </tr> </table>	<b>Address</b>	Italy, Viale Gaetano Pieraccini, 24 50141 Florence	<b>Public sector contractor</b>
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Architect	<p><i>Project:</i> CSPE (Centro Studi Progettazione Edilizia) Prof. Arch. P. Felli (capogruppo), Prof. Arch. A. Andreucci, Prof. Arch. R. Del Nord, Arch. G. Felli, Arch. M. Moglia, Arch. C. Lupatelli Anshen &amp; Allen, San Francisco.D.L.: Prof. Arch. Paolo Felli</p> <p><i>Special consulting:</i> Environmental psychologists: Prof. Mirilia Bonnes, Marino Bonaiuto – Sanitari: Prof. Mario Zanetti Structures: a&amp;i ingegneri associati; Studio Tecnico Chiarugi Mechanical plants: CMZ (Cinelli – Marazzini – Zambaldi) Electrical and special plants: Studio Lombardini Engineering S.r.l. Energetic plan: Centro ABITA</p>
Engineering consulting	
Date of construction	1912-1936
Legal aspects (e.g.: level of protection of building)	Constrained Building According DM 258 del 27/10/1951, Law n. 42 del 22.01.2004 (Cultural Goods Code).
Date of renovation	<b>Renovation</b> realized from 2000-2006.
Nature of the work (short description)	<p>The project was for the new building for <b>CHILDREN HOSPITAL MEYER</b>, established in 1884 by Giovanni Meyer, in memory of his bride, deceased very young. Because the old building of the hospital was too small, the owner decided to move to another old Hospital, the ancient villa Ognissanti, that was the first institution to cure tuberculosis.</p> <p>It has been necessary to restore Villa Ognissanti, and build a new pavillion for special technologies.</p> <p>The old villa has been restored outwardly as it was, except for a new big solar greenhouse to light the entry.</p> <p>Despite the huge volume (76.598 mc) of the new pavillion, the construction has a low impact on the landscape, because of a great attention to the environment: every floor is as slow as possible, and the first two floor are partially in the ground; there are green terraces and a green roof. The functions are: at the first floor, in the ground, the services and the church; , Second floor, emergency room, reception, ambulatory, chemistry, lounge bar; third floor, the surgery area with seven operating rooms, therapy and specialized areas.</p> <p>General data:</p> <p>Floors over the ground: 2 Floors underground: 1 Total surface: 33.694 mq (11.823 mq rebuilding; 21.871 mq new building ) Heated gross surface 21.600 mq Net surface 15.000 mq Heated or conditioned volume 60.238 mc Building shell 32.671 mq</p>

		<p>Healthcare outfits:</p> <ul style="list-style-type: none"> <li>• Beds n°200 ca.;</li> <li>• Examination rooms n°41;</li> <li>• operating rooms n°7;</li> <li>• Day Surgery;</li> <li>• Diagnostic rooms n°9.</li> <li>• Average of users: 130 patients + 35 outpatients</li> </ul>
	Budget and source of financement	<p>Total cost: € 50 milion euro (New pavillion and restoring of Villa Ognissanti)</p> <p>Financed by :</p> <p>Tuscany Region Azienda Ospedaliera Universitaria Meyer</p> <p>European co- funding (VI Programma) for bio - climate:</p> <p>Hospital New Building Euro 569.339 Restoring Villa Ognissanti Euro 662.649</p> <p>Italian Ministry of Environment: Photovoltaic plant in the Greenhouse Euro 330.668</p>

#### AVAILABLE RESULTS

<b>What were the big problems (in terms of energy efficiency) to tackle?</b>	To build a new hospital restoring an old and monumental part.
<b>Has this building been already analysed and certified?</b>	Yes
<b>What are the key innovative energy efficiency measures undertaken through the renovation?</b>	<p>New technologies:</p> <ul style="list-style-type: none"> <li>• <b>Solar chimney and solar spot:</b> natural lighting for energy saving and users comfort;</li> <li>• <b>Green roof.</b></li> <li>• <b>Greenhouse at the front of the nord facade:</b></li> <li>• <b>High thermal insulation</b></li> <li>• <b>Recycled material</b> to insulate the first and the second floor;</li> <li>• <b>Heating with radiant panels:</b> to have the best performance in rooms.</li> <li>• <b>Comby condensation boilers:</b> to have the best performance for water heating.</li> <li>• <b>External protection from sun:</b> to have the control of natural lighting in the reception and in the rooms.</li> </ul>
<b>What are the measurable improvements in terms of energy efficiency in electricity and heating (kWh saved)?</b>	<p>The project target is a reduction of energy consumption of 40%. The results data come from monitoring.</p> <p><i>Lighting</i></p> <p>Thanks to strategies energy saving the new hospital needs of 35% of energy less</p>

<ul style="list-style-type: none"> <li>• kWh saved,</li> <li>• kWh before/after,</li> <li>• kWh given in the studies/real kWh)</li> <li>• carbonated energy kWh substituted by REN</li>   <li>• kg CO2 saved</li> </ul>	<p>than a “traditional” one. Thanks to the solar spot system (solar tubes) the hospital have natural lighting inside; all the bulbs are high efficiency. The consumption is 12.3 kWh/mq/year.</p> <p><i>Heating and cooling</i> Thanks to insulation of roof and walls, the new hospital needs of 35% of energy less than a “traditional” one Heating needs of 73.4 kWh/mq/year Cooling 87.3 kWh/mq/year.</p> <p><i>Hot water production</i> To produce hot water the hospital uses the heat of the same 2 machines that make summer cooling. The energy to hot the water is 13% less than in traditional hospita.</p> <p>The project made an energy saving in Villa Ognissanti of roughly 45%.</p> <p>We have a reduction of CO2 emission: 55% heating, 45% cooling 40% lighting</p>
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<b>ENERGY EFFICIENT MEASURES</b>	
<b>Energy efficient measures of the building envelope</b>	<p>The building has insulating panels 6 cm high, with a double wall. The wall has a value of 0.37 W/m2K.</p> <p>External insulating gives an energy saving of 12% for heating.</p> <p><b>Green coverage</b> The green coverage insulates the building and makes a better view in the landscape.</p> <p>The green coverage in Meyer Hospital has 0.79 W/m2K versus 1.16 W/m2K of traditional coverage.</p> <p>The insulation of the walls more the green coverage brings a 36% reduction of energy consumption for every room.</p>
<b>Energy efficient measures of the heating system</b>	<p>To climatize the building are used heat pump. Heat pumps can work all year round, for heating as well as for air conditioning.</p>

	<p>The heating system is made by high efficiency boilers and radiant floors. The radiant floors are in all the rooms that need maximum comfort as well as energy saving.</p> <p>For heating and water heating there are two high efficiency boilers (that use methane gas) with efficiency of 106%.</p>
<b>Energy efficient measures of monitoring energy</b>	YES
<b>Energy efficient measures regarding behaviour</b>	NO
<b>Stakeholders' involvement in the energy efficient measures</b>	NO
<b>Others?</b>	NO

#### SUSTAINABILITY OF THE RENOVATION

<b>Design and choice of sustainable materials?</b>	Yes
<b>Sustainable building site management? (sorting waste, water...)</b>	Yes
<b>Application of a valuation method (BREEM? HQE? Others?)</b>	NO
<b>Carrying out consultation process with dwellers? Concerted choice on the work program? Which external partners?</b>	NO

#### BUILDING MAINTENANCE: life of the building after the renovation

<b>Is the building following an energy monitoring? Is there a responsible manager?</b>	Yes Dott. Massimo Calamai– Energy Manager
<b>Who is in charge of the maintenance of the heating system of the building?</b>	Internal Technical structure
<b>Who is in charge of the day to day energy management?</b>	Dott. Massimo Calamai Energy Manager  Ing. Gianluca Verdolini Responsible protection service

<b>Are there some specific measures to raise energy awareness and to implicate users in energy efficiency?</b>	NO
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<b>FUNDING</b>	
<b>What is the financing plan?</b>	Total cost: € 50 milion euro (New pavillion and restoring of Villa Ognissanti) Financed by : Tuscany Region Azienda Ospedaliera Universitaria Meyer
<b>Innovative or specific aspects in the method of financing (European funds or loan, energy performance contract,...)</b>	European co- funding (VI Programma) for bio - climate: Hospital New Building Euro 569.339 Restoring Villa Ognissanti Euro 662.649  Italian Ministry of Environment: Photovoltaic plant in the Greenhouse Euro 330.668
<b>What is the balanced budget for each stakeholder</b>  <ul style="list-style-type: none"> <li>• Energy costs for tenant before /after</li> <li>• Increase in the rent</li> </ul>	-----
<b>Is there any specific economical indicators (payback time on investment, global cost, ...)</b>	NO

<b>TRANSFERABILITY</b>	
<b>Transferable aspects according to the partner in charge of this example of good practice</b>	Transferability of planning (forming a partnership, choosing priorities, setting up a renovation building teams, etc.)? <b>To be completed</b>
	Transferability of the process of renovation (management structure, monitoring system, implication of end users, participation, etc.)? <b>To be completed</b>
	Transferability of results (good solutions, adaptability, change of behaviour, etc.)? <b>To be completed</b>
<b>Transferable aspects according to all the partners of Serpente project</b>	The other partners will analyse and validate these good practices. During the process of validation the partners will take on the role of auditors because they will assess and improve the effectiveness and portability of good practices in their context. <b>To be completed</b>
	The validation process will promote a systemic approach in local

	<p>competent public administrations. Moreover, this process of selection and validation is a peer review and entails the mutual role of experts and auditors depending on typology of buildings and partner's expertise.</p> <p><b>To be completed</b></p>
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<b>SOURCES</b>	
<b>Publications</b>	<ul style="list-style-type: none"> <li>• Romano Del Nord, LE NOUVEL HOPITAL PEDIATRIQUE MEYER A FLORENCE, Hospital 4/2005</li> <li>• NUOVO OSPEDALE MEYER, Opere, (quaderno dell'Ordine degli Architetti di Firenze) 02/2005</li> <li>• Romano Del Nord (a cura di), LO STRESS AMBIENTALE NEL PROGETTO DELL'OSPEDALE PEDIATRICO, Motta Ed. Milano, 2006</li> <li>• Cristina Donati, MEYER – OSPEDALE SOSTENIBILE, Progettare per la Sanità, Luglio/Agosto 2006</li> <li>• Giuseppe La Franca, OSPEDALE MEYER DI FIRENZE – ENERGIA E TRASPARENZA, Il Nuovo Cantiere, Settembre 2006</li> <li>• Giuseppe La Franca, POLO PEDIATRICO MEYER, Tecnica Ospedaliera, gennaio 2007 MEYER, in: <a href="http://www.demaniore.it">www.demaniore.it</a></li> <li>• Cristina Donati, OSPEDALE A COLORI, AND 09, agosto 2007 OSPEDAL PEPEDIATRICO MEYER, in: REPUBBLICA + IL VENERDI' DI REPUBBLICA, N. 944 6/4/2007</li> <li>• Elena Magarotto, FOTOVOLTAICO INTEGRATO, Nuova Finestra, 329 ottobre 2007</li> <li>• Cristina Donati, CSPE, L'INNOVAZIONE TECNOLOGICA DALLA RICERCA ALLA REALIZZAZIONE, Electa Milano, 2007</li> <li>• Robin Guenther e Gail Vittori, SUSTAINABLE HEALTHCARE ARCHITECTURE, Wiley &amp; Sons, 2008 - pp.316</li> </ul>
<b>Website</b>	<a href="http://www.meyer.it/">www.meyer.it/</a>
<b>Interviews</b>	<b>To be completed</b>