REVIVAL

“Retrofitting For Environmental Viability Improvement of Valued Architectural Landmark”

Contract NNE5/2001/597

ABITA – Centre Inter University

Department of Technologies of Architecture and Design “Pierluigi Spadolini”

MEYER – Paediatric Hospital Azienda “A. Meyer”

“MEYER OFFICES” Florence - Italy -

REVIVAL Kick Off Meeting – Brussels 23-24 June 2003
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Host Organisation:

MEYER – Paediatric Hospital Azienda “A. Meyer”

- Hospital Meyer of Florence is the **oldest** children’s hospital in Italy.
- Founded in 1884
- **Total size**: 31,000 m²
- **Total volume**: 114,000 m³
- **Bed spaces**: 150

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Host Organisation:

MEYER – Paediatric Hospital Azienda “A. Meyer”

- Each year Meyer treats 10,000 in-patients and 20,000 outpatients.
- The hospital provides treatment and accommodation for the patient’s family.
- 80% of the children come from Florence and Tuscany, 20% from other regions of Italy, and 6% from abroad.
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Host Organisation:

MEYER – Paediatric Hospital Azienda “A. Meyer”

It is the regional reference center for 20 pathologies including:

• HIV,
• Pediatric Diabetes,
• Cystic Fibrosis,
• Neonatal Screening,
• the Study and Prevention of SIDS,
• the Follow-up of Cardio pathology.

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Host Organisation:

**ABITA – Inter University Centre**

*Faculty of Architecture*

*Department of Technologies of Architecture and Design “Pierluigi Spadolini”*

ABITA, is an **Inter-University Research Centre** in the environmental technologies area. Members are:

- University of Florence,
- Polytechnic of Milan,
- University of Naples Federico II,
- University of Rome La Sapienza.
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“Pierluigi Spadolini”

Research Centre in the field of systems and architectural technologies and in the transformation of the built environment

• to promote, organize and develop research activities
• integrate into the design process advanced technologies
• develop evaluation tools for the control of the quality of the transformation interventions of the built environment

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ABITA has an extensive experience in the management of National and European research and development projects in the field of Sustainable Construction like:

**MUSEUMS**  Energy efficiency and sustainability in retrofitted and new museum building. (V° F.P. in progress),

The Meyer Hospital takes part in other European project regarding building sustainability promoting several strategies like:

- **Energy saving** with a well designed plants integration
- Use of **ecological construction materials** to assure a indoor environmental quality (health, safety and aesthetics)
- Reduction of the use of primary raw materials and recycling rate of construction related waste
The Meyer Hospital project

The Italian demonstration project selected for REVIVAL project is part of a big new hospital project named Meyer hospital.

The new complex will rise near the hospital pole of Careggi designed with

- advanced technological criterions
- environmental sensitivity
- attention to the welcome requirements
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The new complex takes part in two complementary European projects as HOSPITAL and REVIVAL, addressing the same energy issues:

- Lighting
- Heating
- Insulation
- Ventilation
- Cooling
- Controls

The Meyer Hospital project
Meyer HOSPITAL studies energy efficient in new building used as hospital, wards…

Meyer REVIVAL deals with the issues of office accommodation and how to retrofit energy efficiency into an old building.

The Meyer Hospital project

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The Meyer Hospital project

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The Meyer Hospital project

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The REVIVAL Project

This project will integrate different three old buildings facing south, which were used as confinement rooms.

One of these buildings (called "Villa Ognissanti") will be re-used to house new hospital direction and administrative offices of the new Meyer Hospital.

The refurbishment aims are to reduce energy consumption, CO$_2$ emissions and to improved working conditions.
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The building as it is now

Villa Ognissanti

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The building as it is now

Villa Ognissanti
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The building as it is now

Villa Ognissanti
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The building as it is now

Villa Ognissanti

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The plan of Villa Ognissanti is made of 3 separate buildings placed on the west axis. They are not suitable for a new purely medical function.

REVIVAL project deals with the old pavilions, with integrated strategies related to winter and summer reduction of energy consumption and comfort improvement.
The building as it will be used

Villa Ognissanti

The old pavilions of the Villa Ognissanti will be retrofitted to host:

- Hospital administration and direction
- University offices and studios
- Surgeries and medical rooms
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The building as it will be used

Villa Ognissanti

In front of the villa, facing south, there’s the old garden with wide lawns and impressive masts. There is an alternation between light and shade, ideal for walking.

- **Old trees** and existing roads will be maintained:
- New **400 parking places** will be create inside the park.
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The building as it will be used

Villa Ognissanti

“Villa Ognissanti” - GROUND FLOOR

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The building as it will be used

Villa Ognissanti
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The building as it will be used

Villa Ognissanti

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Building size: around 6000 m²

The energy technologies

Villa Ognissanti

Innovative energy technologies to be used (to achieve 30% savings):

Building Improvement
- Roof insulation
- External solar shading
- Advanced double glazing
- Replacement of windows

Use of passive techniques
- Night ventilation
- Use of ceiling fans

Electric light improvement
- Use of daylight compensation systems
- Use of Low Energy Lighting
- Lighting control
- Improvement of daylight use

HVAC system improvement
- Use of BMS for advanced local control
- Use of condensing boilers
- Use of radiant heating and cooling

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The Meyer’s greenhouse is a structure which is:

- not heated or cooled by mechanical means;
- southern exposed in order to maximize the collection of winter sunshine;
- attached to and accessible from the three buildings, but separated from adjacent spaces by means of walls or glazed openings.
The energy technologies

Villa Ognissanti

Amenity value of the greenhouse space: 960 m²

From the point of view of the materials and the constructive techniques this greenhouse project aims to use eco-compatible materials:

- **cork** for roof insulation and
- **wood** for structural elements
Contribute to the parent building in the form of energy savings by:

- Providing a protective thermal buffer
- Supplying fresh air for room ventilation (opening area > 40% of the greenhouse area)
- A net heating effect on sunny days in spring or autumn
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The greenhouse Villa Ognissanti
Meyer’s greenhouse is a particular kind of space. The design objective has considered also social impact:

- to create a pleasant and “socialising” space which can be used for semi-outdoor activities through much of the year
- a social space well integrated with the adjacent green park.
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**The time scale**  
*Villa Ognissanti*

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**Project planning and timetable**

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