



Contract N°.
EVK-CT-2002-00104



“From the Extraordinary to the Ordinary”

Demonstration project partly financed by the EU Commission in the 5th Framework Programme: Energy, Environment and Sustainable Development

Key Action n°4: City of Tomorrow and Cultural Heritage

Project duration: March 2003 - February 2008

www.she.coop

This European R&D project, led by social housing organisations and coordinated by the Italian Federation of social housing cooperatives, Federabitazione Europe, aims to demonstrate the feasibility of sustainable housing for all social groups by involving a wide range of stakeholders, focusing on the end-users, through a series of pilot projects (about 600 eco-dwellings) in 4 countries: Denmark, France, Italy and Portugal.

The project consortium is highlighting the wider benefits of sustainable housing, evaluating and developing new methodologies and technologies, and drawing up a set of best practice guidelines.

The project's key goals are:

- To develop an integrated approach aimed to move sustainable housing “from the extraordinary to the ordinary” and to reduce the distance between what we know is to be done to obtain more sustainable buildings, cities and lives, and what is normally done,
- To improve energy and environmental performances of social housing and urban quality of life providing the citizens with a healthy and sustainable environment,
- To encourage the inclusion of a sustainable building approach in policies at national, regional and local levels and to raise the awareness of sustainability issues of all urban development actors, particularly concerning the global costs and the direct and indirect benefits of sustainable construction, and
- To assess the degree of satisfaction of the tenants through social and economic monitoring.



SOCIAL AND ECONOMICAL ASPECTS OF SOCIAL HOUSING

The analysis of the Life Cycle Cost of housing is the main tool for raising the awareness of the importance of eco-housing: Based on the social advantages, national and local governments should provide incentives for sustainable housing. The SHE consortium, with the support of the partner La Calade, is currently evaluating sustainable housing in terms of costs and benefits. This innovative Life Cycle Cost approach is a crucial tool for evaluating the importance of sustainable housing benefits and to convince the national and local governments to provide incentives for sustainable housing based on its social and economical advantages.

The SHE demonstration projects are now testing and validating an important and comprehensive, but not complicated, sustainability and economic tool based on the "Overall Life Cycle Costing (OLCC)" which can serve as a monitoring and decision aid tool, if it is used from the early stages of the construction process. As elaborated by La Calade, OLCC includes externalities and induced impacts making the project "shared" between different actors.

Externalities include environmental and social impacts, which do not have a market value. The OLCC methodology requires determining the value of pollutants and CO2 emissions, noise nuisances, and health and comfort impacts. The impact of these criteria can be discussed among the actors and this participatory approach will contribute to the sustain-

able development. Induced impacts regard the indirect impact of a project. For example, a local sewage system on the plot will reduce the needs at the local level and could therefore obtain funding from the water company. The OLCC provides new means for the negotiation among the actors.

Many social elements are qualitative and contribute to the quality of life. In the SHE project, the social aspects are considered for residents, neighbours, workers during the construction phase, as well as for the society as a whole.

For the inhabitants, a sustainable construction means i.e. quality, comfort, well-being, health, safety and accessibility (to services, public equipment and public transportation). The social capital becomes an important indication of the quality of the relationship among the residents.

For the land planner, sustainable construction means i.e. user satisfaction, minimization of environmental impacts, contribution to social equity, social redistribution (through the analysis of the combined "rent + service and maintenance charge" for example), and also local economic development (construction and maintenance).

The objective of the SHE project is to work out and apply a new specific methodology using both economic and social impacts as assessment tools for obtaining sustainable buildings or housing.

NANNING INTERNATIONAL CONFERENCE ON SUSTAINABLE URBAN DEVELOPMENT



In November 2005, the SHE Project was presented at the International Conference on Sustainable Urban Development in Nanning, capital of the Chinese Guangxi region. 350 delegates from 36 nations participated in the conference. The SHE Project had been chosen by the European Commission as a best practice example for bringing sustainable housing from the extraordinary to the ordinary. In fact, the conference theme was "from research to action", a slogan that expresses the need to address the overwhelming urban expansion in Asia with criteria of sustainability. The conference, which was organized by the European Commission, the Chinese Government and UN Habitat, addressed among other issues the situation of sustainable development, land use, human settlements and ecological mobility.

VISIT OF UNIVERSITY DELEGATION FROM SINGAPORE

"Asian Network for Global Urban Sustainability" on tour to the most significant realities of Federabitazione Europe

Director Lee Siew Eang and Dr. Lim Guan Tiong from the University of Singapore have been given the task from the Government to study urban sustainability methodologies in order to improve their city's quality of life. The objective of the research is the creation and enhancement of an Asian Network (China, Japan, Singapore, South Korea and Thailand) named "Asian Network for Global Urban Sustainability".

The researchers are touring the world to learn about the best practises and the SHE project was picked as a good example for demonstrating that sustainable housing and respect of the environment are compatible with the housing market requirements. Federabitazione Europe organized the visit, which included a meeting at the Confcooperative offices with the SHE Coordination, visits to the eco-house of Milan and to the Municipalities and construction sites of Pesaro (SHE pilot project) and Senigallia (aggregate to SHE).



NEWS FROM THE SHE PARTNERS

In order to achieve the important goal of involvement and awareness of national and local authorities, EU Member States, social housing actors, citizens and other stakeholders, the SHE partners planned and organized various activities and obtained valuable results.

Denmark – Energy Saving Prize 2005 (October 2005)

On 31st October 2005 the Housing Association Ringgaarden was awarded the Danish Energy Saving Prize at a Conference held by the Municipality of Copenhagen and the British Embassy. The Environment Mayor of Copenhagen, Mrs. Winnie Berndtson, presented the prize, which was awarded for the pioneering project “Architecture and Sustainability in Danish Housing” of which the Danish SHE-contribution is a part. The Judging Committee remarked i.e. that: “The Prize is given to the tenant elected Board and the Managing Director, Mr. Palle Jorgensen, of the Housing Association Ringgaarden in Aarhus for the visionary courage and for showing both local and global responsibility for the environment... The displayed courage to impose extremely high demands for the energy and environmental quality in a housing project can be a great inspiration for other housing associations as well as private and municipal clients.”



Sustainability... ?
attractive
vital
social
Merzig + Partner

Turin, Italy - International SHE Meeting (May 2005)

In the context of the SHE dissemination activities, Federabitazione Europe was asked by CECODHAS to organize a convention in Turin, with the participation of EU social housing representatives as well as Italian sustainable housing stakeholders. The meeting preceded the two-day Assembly of CECODHAS.

The convention aimed to inform on the details of the project's particularity, more specifically on the economic aspects.

Key interventions were those of Prof. Eduardo Maldonado on the Application of the Energy Certification, Matheos Santamouris on the Natural Cooling of the Cities and Philippe Outrequin on the Social and Economical aspects of the SHE pilot projects. The presentations are available on the SHE web site.

Lisbon, Portugal – “Sustainability in Housing Construction” at the National Institute for Housing (July 2005)

Key actors of the urban management and building sector participated in this meeting: Architects, engineers, technicians of several municipalities, representatives of the Public Housing Secretary, the Superior Board of Public Works, the House Group and the National Laboratory of Civil Engineering.

NORBICETA's SHE Project and the future cooperative buildings, which will adopt the SHE approach, were presented. The policy branch of FENACHE is preparing a document on the new management principles of cooperatives. The document is named Declaration for the Quality in Cooperative Housing and it will be adopted by the Portuguese Cooperatives and, eventually, by the Portuguese Government.

This Declaration is a voluntary approach of FENACHE and an instrument of promotion, affirmation and dissemination, aiming at achieving a better organization, development and importance of the sector. The document takes into consideration the principles of sustainability in the housing construction as defined by the SHE Project.



Brussels, Belgium - European Social Housing Week (October 2005)

The first European week ever dedicated to social housing, to its present and future, took place in Brussels in October with the participation of CECODHAS members, Ministries and many other stakeholders. From the 10th to the 14th an important exhibition was exposed in the European Parliament, Altiero Spinelli Building. The exhibition illustrated how the social housing sector contributes to social cohesion, sustainable development of cities and access to services for all. The SHE project was presented to disseminate the idea that respect of the environment and of the people is the only way to reach the European target of sustainable development of cities. The exhibition was organized with the support of MEP Struan Stevenson and launched by the chairman of the Urban and Housing Intergroup of the European Parliament, and the President of CECODHAS, Angelo Grasso.

SHE STATE OF ADVANCEMENT

| Work Package | 2003-2004 | 2004-2005 | 2005-2006 | 2006-2007 | 2007-2008 |
|--|-----------|-----------|-----------|-----------|-----------|
| STATE OF ART | | | | | |
| SUSTAINABLE DIAGNOSIS AND DESIGN | | | | | |
| CONSTRUCTION | | | | | |
| COMMISSIONING | | | | | |
| ENERGY AND ENVIRONMENTAL MONITORING | | | | | |
| SOCIAL AND ECONOMIC ASPECTS AND MONITORING | | | | | |
| PARTICIPATION PROCESS | | | | | |
| QUALITY ASSESMENT AND GUIDELINES | | | | | |
| REPORTING | | | | | |
| DISSEMINATION | | | | | |
| HORIZONTAL ACTIVITIES | | | | | |

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THE SHE PILOT PROJECTS

Each of the 8 pilot projects provides concrete examples of ways of integrating sustainability by means of long-term management of land, water, waste, energy and natural resources in social housing and of integrating close participation of citizens in all the decision-making phases of urban management.

The Teramo Project

by **CCICASA CONSORTIUM - Teramo, ITALY**

- Active solar systems (photovoltaic and thermal)
- Strong thermal inertia masonry
- Acoustic insulation
- No toxic natural materials
- Reduction of electric and electromagnetic fields
- Natural and night ventilation
- Centralized and radiant heating system with high efficiency boiler
- Reuse and recycle water systems
- Low consumption lighting system



The Preganziol Project

by **COIPES CONSORTIUM - Venice, ITALY**

- Orientation of buildings
- Active solar systems, photovoltaic and thermal solar panels
- Centralized cooling which also uses geothermal energy and low radiant temperature air-conditioning systems
- Optimization of the energy relations with the surrounding environment by means of architectural design (bioclimatic architecture)
- Acoustic insulation
- No cars in common spaces, distinct walk-bicycle ways and use of stabilized earth instead of asphalt for car ways
- Water recycling and grey water phytodepuration
- Reshape and use of small river for summer cooling

The Ozzano Project

by **COPALC CONSORTIUM - Bologna, ITALY**

- Active solar systems (photovoltaic and thermal)
- Strong thermal inertia masonry
- Acoustic insulation
- No toxic natural materials
- Reduction of electric and electromagnetic fields
- Centralized and radiant heating system with high efficiency boiler
- Reuse and recycle water systems
- Low consumption lighting system
- Natural and night ventilation
- Solar shielding
- Individual consumption metres



The Lystrup Project

by **RINGGAARDEN - Aarhus, DENMARK**

- Energy frame: Less than 30 kWh/m²/year
- Optimal daylight without overheating problems
- Internal veranda as thermal buffer zone
- PCM (Phase Change Materials) heat storage system
- Natural ventilation strengthened by wind towers
- Renewable and environmentally optimised materials
- All known water saving systems

The Villa Fastiggi Project

by COPEL CONSORTIUM - Pesaro, ITALY

- Participatory design process and building user manual
- Support to develop a new local regulation on bio-architecture
- Independent walk and cycle ways accessible by visually impaired people
- Urban improvement: Connection between inner and outer pathways
- Acoustic insulation at district and building scale
- Reduction of electromagnetic fields
- Water cycle management at district and building scale, including reuse of rainwater and reduction of domestic flows
- Sun-Air impact control: Winter solar gains and passive cooling strategies, shading devices, natural ventilation, high thermal mass and insulation
- New urban park which respects the landscape features and kitchen gardens
- Light pollution control, improvement of natural light within indoor spaces
- Centralized low temperature heating system and high efficiency boiler integrated with solar collectors



The Brescia Project

by CONSEDI CONSORTIUM - Brescia, ITALY

- Active solar systems (photovoltaic and thermal)
- Strong thermal inertia masonry
- Acoustic insulation
- No toxic natural materials
- Reduction of electric and electromagnetic fields
- Centralized and radiant heating system with high efficiency boiler
- Reuse and recycle water systems
- Low consumption lighting system

The Porto Project by NORBICETA - Porto, PORTUGAL

- Active solar thermal systems for water heating
- Strong thermal inertia masonry
- Optimized treatment of the envelope to avoid thermal bridges
- No toxic natural materials
- Low consumption lighting system
- Control of the working wastes and selective refuse process
- Water saving systems: Double flow flush 3/6 litre, flow reducer and roof and garden rainwater collector
- Waste management: Taking into account the local selective households' refuses
- Controlled exhaust ventilation (VMC)



The Bourgoin-Jallieu Project by OPAC38 - Grenoble, FRANCE

- Harmonious relationship between the building and its surroundings
- Control of the working wastes and selective refuse process
- Strong thermal inertia masonry, use of clay bricks
- Creation of sunspaces in dwellings for passive solar energy
- 60 m² thermal solar panels and 20 m² photovoltaic panels
- Hot water provided by central natural gas heating
- Controlled exhaust ventilation (VMC)
- Electricity saving systems both for private and public areas
- Water saving systems: Double flow flush 3/6 litre, flow reducer and roof rainwater collector
- Waste management: Taking into account the local selective households' refuses
- Repair and maintenance management
- Visual comfort: Natural lighting for dwellings/common areas