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‘The role the Co-operative Housing sector can play in combating climate change’

**The EU SHE project “Sustainable Housing in Europe”
*bridging the gap between theory and practice***

Alain Lusardi

*Architect PhD, Scientific SHE Coordinator,
Confcooperative-Federabitazione Europe, Rome (IT)*
www.she.coop

Short summary

This paper introduces the objectives of the **five-year demonstration project called “SHE - Sustainable Housing in Europe”, which is lead by social housing organisations and funded under the Fifth Framework R&D Programme of the EC.** The project aims at sending a clear message to all urban stakeholders and citizens that today moving towards an everyday practice of sustainability in social housing sector, involving all stakeholders and especially the final users in the building process, is possible. Its purpose is to explain the methodology applied to social housing sector in order to demonstrate that the **application of basic sustainable principles in the daily practice is not a utopia of the next millennium**, but a commitment that should be attended by everybody and that is worthwhile to everybody. The paper concludes with the **first results and impacts** in the building sector and social housing practices.

Introduction

Step by step, the acceptance of sustainability topics is growing and environmental awareness and commitment of the buildings’ users, designers and developers is also growing. The generation of planners, architects, developers and **social housing organisations working today have a critical responsibility and a vital role as advocates of sustainable solutions** in the building sector and in the urban planning management. As strategic actors for realizing social cohesion and urban sustainable development, social housing organisations lie in the challenge to move the present examples of sustainable housing from the “extraordinary” to the “ordinary”, as well as to improve the link between building and neighbourhood scale. The effective concern and daily commitment of the social housing organisations has led to assume a **holistic responsibility of its actions; balancing investment costs with economic, environmental as well as social benefits.**

Objectives

Based on this life cycle approach, since march 2003, eight social housing organisations together with a team of scientific experts, coordinated by the Federabitazione Europe (Italy), have been working to promote **the inclusion of sustainable housing, of sustainable urban management** in political agenda and policies at national, regional and local levels in 4 countries - Denmark, France, Italy and Portugal.

The SHE objectives are mainly:

- **To develop an integrated approach aimed** 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 catalyse a new vision towards sustainable urban development** in all urban actors and **to prepare the ground for acceptance** of the new vision concepts;
- **To improve energy and environmental performances of social housing** and urban quality of life providing the citizens with a healthy and sustainable environment,
- **To evaluate the degree of satisfaction** of future inhabitants, through a permanent social monitoring;
- **To develop of a “bottom up” approach** through the participation of future inhabitants in the principal stages of the building process;
- in brief, to **activate a cultural process**, to prepare the ground for acceptance, to boost a reaction!

Description of the project

As mentioned above, the main actors of the project are social housing organisations that, due to their institutional calling, are accustomed to involve the future residents. Moreover, a team of experts (from universities and public and private research centres) provides scientific support on specific topics at the different stages of the project, in order to ensure the exchange and homogenisation of the scientific results.

The project will consist in 11 **Work Packages** (WP), which are defined with specific assessment and target evaluation criteria:

- Work Package 1: State of the art
- Work Package 2: Sustainable Diagnosis and design both at the neighborhood and building scale
- Work Package 3: Construction
- Work Package 4: Commissioning
- Work Package 5: Energy and Environmental Monitoring
- Work Package 6: Social and Economic Aspects and Monitoring
- Work Package 7: Participation process
- Work Package 8: Quality Assessment and Guidelines
- Work Package 9: Reporting
- Work Package 10: Dissemination
- Work Package 11: Horizontal Activities

WPs 1 to 5 are defined as **common or core** Work Packages as they concern the individual phases of the demonstration projects. In addition, **“follow-up”** Work Packages (*WP 6,7,8*) have been introduced to support the innovative approach of the project. The WPs “participation” and “social aspects and economic analysis - monitoring and evaluation” are especially aimed to elaborate specific protocols and strategies and tools in order to allow a follow-up to the social situation and to prepare satisfaction inquiries. Monitoring activities are addressed to assess the effects and effectiveness of the technical and socio-economic issues

The partners have identified a series of important cross-projects and cross-national activities focused on technical, social, economic and environmental demands and requirements related to housing sustainability. These have all been included in *WP 11* named **Horizontal Activities**, where a team of experts supplies the required scientific support in those vital topics necessary to implement sustainability and to ensure scientific support organisation, exchange of information and homogenisation within the project, as well as spread applicability of the results to the European scientific community. Horizontal activities are running parallel to the other Work Packages, strongly interacting among the pilot projects to facilitate information exchange on different topics and to optimise the synergies among the members to ensure the project’s optimal outcome.

- WP 11.1: Participation process
- WP 11.2: Site analysis, building and landscape design
- WP 11.3: LCA procedures, safe materials and technologies
- WP 11.4: Water, ground and underground management cycle
- WP 11.5: Waste management cycle
- WP 11.6: Energy management cycle
- WP 11.7: Daylighting and Acoustic issues
- WP 11.8: Energy and environmental simulations and monitoring
- WP 11.9: Social and economic aspects

During the project, results are constantly disseminated (*WP 10*) by means of internet websites, forums, press releases, newsletters, workshops, etc.

Scientific progress made

Up to now, the following specific scientific/technological objectives have been reached:

- Clear and synthetic **overview of the current technological and non-technological needs, constraints and challenges** to sustainable housing policies in each of the participating countries, in accordance with the progress and targets of EU policies and with the on-going development of the *Thematic Strategy on the Urban Environment, DG Environment*;
- Preliminary table highlighting the **minimum sustainability standards** with which each project will have to comply;
- **Set of recommendations and formats** for each of the main sustainability topics, especially participation and social and economic aspects, and their **integration in the everyday practice** of housing organisations to calibrate final targets taking into account the existing running modes and not setting unrealistic targets and to provide a framework to guide technological and non-technological decisions;
- Development, in the **design phase**, of **detailed choices and prescriptions** regarding: architectural, engineering and resource (energy, waste and water) aspects, starting from accurate site analysis and diagnosis to outline a comprehensive design approach, both on the neighbourhood and building scale, involving all stakeholders as the main actors in the building process;
- Enhancement of the **ex-ante participation** during the urban planning and building design and specifically the **post inhabitant participation** for the French case study during the building use;
- **Widespread dissemination actions** - not only for the spreading of information, but also to **involve and convince stakeholders, and overall users, local authorities and housing organisation movements**.

Description of SHE projects

The eight pilot projects provide concrete examples of sustainability and different solutions on how to manage natural resources, including energy, land and water.

The construction of most of the pilot dwellings has now been finalized, the users have moved in, and the energy and environmental monitoring has started.



The Preganziol project – Treviso (IT)
 Social Housing organization: COIPES
 70 eco-dwellings
 Construction: November 2005 / March 2007



The Villa Fastiggi project – Pesaro (IT)
 Social Housing organization: COPES
 130 eco-dwellings
 Construction: November 2005 / May 2007



The Mazzano project – Brescia (IT)
 Social Housing organization: CONSEDI
 40 eco-dwellings
 Construction: May 2006 / December 2007



The Ozzano project – Bologna (IT)
 Social Housing organization: COPALC
 12 eco-dwellings
 Construction: May 2005 / December 2006



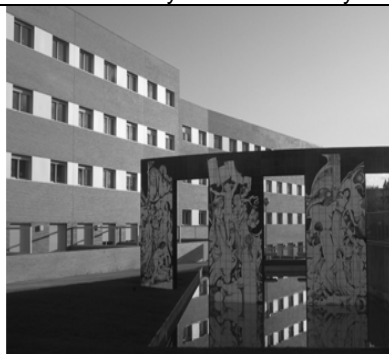
The Teramo project – Teramo (IT)
 Social Housing organization: CCICASA
 60 eco-dwellings
 Construction: April 2006 / September 2007



The Lystrup project – Aarhus (DK)
 Social Housing organization: RINGGAARDEN
 40 eco-dwellings
 Construction: May 2007 / February 2008



The Bourgoin-Jallieu project – Grenoble (FR)
 Social Housing organization: OPAC38
 61 eco-dwellings
 Construction: March 2003 / March 2004



The Matosinhos project – Porto (PT)
 Social Housing organization: NORBICETA
 101 eco-dwellings
 Construction: December 2004 / February 2007

Innovative character

The SHE innovation is primarily based on the experience of the social housing organisations and their ability and potential to pass on information and results both at national (through national

organisations) and EU level (through European organisations which also include the NAS countries) to all urban stakeholders.

Benefits in the short and long-term will be felt and employed not only by the social housing organisations but also by all the members of the national social housing associations involved along with **the European liaison committee for social housing** (CECODHAS), which will represent the best means to disseminate the results to the **new EU countries**.

Moreover, other innovative outcomes will be produced:

- (1) an **integrated roadmap with practical recommendations** aimed at supporting social housing organisation to introduce sustainability in future projects **and to clarify the responsibilities of all participants involved and the design and administrative procedures to be followed in the project management and design process**. This document will be in “**progress**” until the end of the pilot-projects and will be **continuously updated** through a **feedback process** with the other completed or on-going WP’s. We hope that this technical manual will be a useful and vital resource in advancing social housing organization’s adoption and daily practice of sustainable building principles;
- (2) the definition of **new procedures to ensure effective direct participation of all building stakeholders**, especially the final users in the decision-making process thus increasing environmental awareness;
- (3) **a dwelling manual** for each SHE pilot project aimed to educate future inhabitants in the use and maintenance of sustainable dwellings;
- (4) the promotion of long term thinking with the development of a **global life cycle costing methodology for sustainable housing**, in the framework of the WP6 “Social and economic issues”. The SET SHE model “...aims at giving information to the market actors about the real costs of equipments and services by an analysis of the whole life of equipments on the one hand and by an analysis of externalities of the project on the other.[...] The SET SHE model includes: the breakdown of costs and benefits between the stakeholders; the externalities assessment and the direct life cycle costing assessment including investments and postponed costs [...]” (source: preliminary report on the SET SHE model elaborated by La Calade)

Moreover, it’s important to note that the final SET SHE model is planned to be ready at the end of the project (2008) and, up to now, the SHE team have performed some tests on five pilot-projects and reach some partial results, but interesting!, of its potential usefulness in terms of current practice.

We think that the model developed in the SHE framework would be a valuable contribution to (1) **sustainable construction in defining a common methodology**¹ and to (2) **convince the national and local governments to provide innovative financing schemes and incentives tailored to deal with retrofitting or new construction of sustainable buildings based on its social and economical advantages**.

First results and impacts on the building sector and social housing practices.

Up to now, we note that one of the major obstacles to the development of the SHE approach is the need for more progressive urban actors and politicians with courage to set goals and incentives for society to follow. Some countries have given a lead, e.g. Denmark and Germany, having understood the need to reduce consumption and adopt renewable energy sources and reflected this need in the building codes and in their economies. Others, in varying degrees, lag behind. We think that there are no technological barriers to sustainable development, only ones of non-technical character or lack of political will. In fact, often politicians are reluctant to listen. These are serious non-technical barriers. A fresh attitude is required, from the national and local politicians to the bricklayer. It may require financial incentives, or institutional change. But the dynamics are complex and will differ from country to country, so each country needs to go through the cultural and learning process and adapt its current practices itself.

¹

It’s important to remain the last **general invitation to tender n. Entr/05/04** launched by the EC Entreprise directorate general “*Life-cycling costing (LCC) as a contribution to sustainable construction: toward a common methodology*” that outlined that the “EU approach for LCC is intended for both the public and the private

sectors, although it would primarily address contracting authorities. In particular, the outcome from the study would support incorporating LCC in public procurement of large scale projects when the criterion of the Economically Most Advantageous Tender (EMAT) is chosen”.

The EU SHE PROJECT has been met with great interest from both from policy- and decision-makers, end-users and many stakeholders influencing the built environment. Many of them have already formally participated as “facilitators” for the activities and open discussions of the EU SHE project.

The SHE consortium is fully committed to create a broader consensus on sustainable housing and to stimulate the participation of the policy- and decision-makers and main actors of the urban management to produce a “snowball effect” in order to provide an institutional guarantee that sustainability criteria will be incorporated in public and private decisions and investments.

Many municipal land planners have understood that there exists a demand from the bottom and that citizens ask more and more to live in a sustainable neighbourhood and now the establishment of sustainable cities, of sustainable housing is beginning to be considered a benefit both for the private and for the public and the local governments begin to be aware of it.

We can add two considerations to enforce this thinking: The first is that the increased demand of citizens to create a sustainable cooperative (it is important to remember that Federabitazione has created a **network of housing cooperatives called “La Casa Ecologica”**, aimed to capitalize the SHE experience in the national territory) and the second one is that the results of a survey launched by Federabitazione in 2004 about needs and expectations of future social housing users confirm that the sustainability is one of the most important criterions in the choice of a house.

Another impact of SHE project on the **Italian state of art** is that now sustainable housing is being considered a benefit both for the private and for the public and that the local governments begin to be aware of it.

We have concretely verified this trend: **In Pesaro** (one of the Pilot project municipality), the Municipality changed its building regulations – introducing sustainability and participation – and the local technical SHE partner was asked to prepare a manual on sustainable buildings. Another example is from Teramo. It is important to note that municipal technicians have decided **to test the new vision developed in this pilot project in other future experiences** and to **update the municipal building code taking account of the project’s results**. New procedures for the planning, implementation and monitoring are now studied to change the actual decision-making process management and to introduce new standards and guidelines.

In Italy, the preliminary updating of the survey on “the current state of incentives for sustainable building at municipal level”², launched in 2004 by Federabitazione during the 1st Convention on Sustainable Housing, held in Rome on 21st January 2004, confirms the **increased trend of municipal actions for sustainability**. Moreover, after the above 1st Convention, the Minister for the Environment agreed to launch a **roundtable on “ecological housing”**, lead by Federabitazione Europe, with participants of the Directorate General for the Protection of the Environment of the Ministry for the Environment and Territory, environmental associations and other associations and organizations of the Italian housing sector. The Roundtable on the “Ecological House” has produced a draft of national agreement aimed at the promotion of sustainable architecture. The objectives of the agreement are the promotion of sustainable principles in architecture and the dissemination of solar technologies in the construction sector, through raising awareness, communication, training and demonstration activities targeted at both public and private stakeholders. The agreement is one of the first concrete results of the SHE Project dissemination activities aimed at advancing the issue of sustainable construction on the agenda of policy and decision making institutions.

Continuing this synthetic excursus on the impacts of SHE activities, we can highlight three important events:

- In the framework of the first edition of the **Next Energy Award** dedicated to the issues of energy savings and renewable energies in the Italian building sector, organized by Milano Fiere International, with the aegis of the Ministry for Environment and Territory and the Italian Kyoto Club, the SHE project of Pregarziol won this important award for the high level of energy efficiency and quality of the architecture.

² The conclusions of the first survey were presented and they showed that currently 55% of the 249 municipalities had implemented incentives for sustainable housing and that 10% more had considered doing so. Only about 35% had not yet considered making incentives for sustainable housing.

- The recent **Danish energy saving prize**, received by the SHE partner n. 5 Ringgaarden, that awarded the “pioneering project“ architecture and sustainability in Danish housing of which the Danish SHE contribution is part. The judging committee remarked e.g. 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”*.

This is an important success for the Italian and the Danish state of art, and also for the SHE project.

In **Portugal**, the policy branch of Fenache (National Federation of Housing Cooperatives) is now preparing a document on the management principles of cooperatives. This document, named “Declaration for the Quality in Cooperative Housing”, will be adopted by all Portuguese cooperatives and will include the principles developed in the SHE project.

In some of the local areas of the pilot projects there has been a “domino effect” where an increasing number of local actors are interested in developing new housing projects together.

The SHE project has also raised interest in countries that are not participating in the project and delegations of urban planners and social housing organisations from Australia, Poland and Singapore have visited the pilot projects.

At the international level, the SHE project was presented as a best practice example of the European Commission on urban sustainable development at the United Nations HABITAT conference in Nanning (China) in 2005.

In 2007 the SHE project was awarded with the energy prize of the European Commission, in the context of the **Sustainable Energy Europe Campaign 2005-2008, in the category “public-private partnership”**. The prize was motivated by the fact that *“SHE represents a shining example of a public-private partnership where social housing cooperatives on a local, regional and European level have partnered with building companies, scientific institutions and technical organizations to demonstrate the feasibility of sustainable housing and communities. SHE focuses on raising awareness among end-users and wants to improve the lives of citizens by offering healthy and sustainable environments.*

The partnership is demonstrating an integrated approach to the development and construction of sustainable housing by making the extraordinary ordinary. By the end of the project, 600 families in Denmark, France, Italy and Portugal will be living in sustainable dwellings.

SHE will develop best-practices guidelines so that sustainable dwellings can be replicated by others.”

Conclusions

To conclude, sustainable development demands a shift from historic economic models, and the creation of a market that will deliver long-term growth in a way that enhances the environment and social structures. This is already beginning to happen – in the construction sector, and among regulators, clients and suppliers

Now the challenge remains to convince cities that long-term benefits are as important as short-term gains – that they can become attractive, vibrant centres of life and culture which we will be proud to bequeath to our children....but the majority of political and administrative bodies are focused primarily on shaping the present and immediate future!

As explained above, in the SHE project, we are facing different “non-technical barriers”. For example, from 2004 until today, the Danish building market has been overheated because of massive investments in the private real estate sector in the biggest cities first of all in Copenhagen and Aarhus. The result has been a steep increase in the building costs and this has not yet been reflected in the state defined maximum frame per square meter granted the social housing sector. The consequence has been a big decrease in the erection of the social houses in the last couple of years and this will probably be the case until the market stabilizes itself and/or the maximum frame for social houses is adjusted to the actual cost level. This overall situation caused a very bad result for the Ringgaarden tender in February 2006 for the two SHE-aggregated projects (dwelling group A + C). The tender resulted in a deficit of 25% in the building budget and Ringgaarden

subsequently had to cancel the tender and start a revising and saving process. A new tender will be held in the end of November 2006.

For the second time, the City Council of Aarhus has submitted an application to the Ministry of Social Affairs for a special increase of the maximum economic frame for the SHE-project. Finally the 25th. Of April 2007 after many negotiations with the Ministry of Social Affairs and after more than one year of consideration of the case Ringgaarden received the permission of the Ministry to break through the maximum economic frame for the SHE-project. By the 1st. of May all mayor permissions were granted for the SHE-project and the building process has started up the 7th. Of May

... The road to making life better and to building the future remains however long, on all the fronts. Above all the cultural one.

SHE PARTNERS	Country
Coordinator	
Federabitazione Europe- Confcooperative	Italy
Social Housing Organisations	
OPAC38 -Office d'Aménagement et de Construction de l'Isère	France - Grenoble
NORBICETA - União Cooperativas de habitação	Portugal- Matosinhos
RINGAARDEN	Denmark- Aarhus
Consorzio CCI casa	Italy- Teramo
COIPES- Consorzio di Iniziativa e Promozione dell'Edilizia Sociale	Italy- Preganziol
CONSEDI - Consorzio Bresciano per l'Edilizia Economico Popolare	Italy- Mazzano
COPALC -Consorzio Provinciale Abitazioni Lavoratori Cristiani di Bologna	Italy- Ozzano
COPEPES- Consorzio Organizzazione e Promozione Edilizia Sociale	Italy - Pesaro
Scientific partners	
University of Porto	Portugal
Fenache- National Federation of Housing Cooperatives	Portugal
Istituto Nazionale di Bioarchitettura	Italy
Ricerca & Progetto - Galassi, Mingozzi e associati	Italy
Casaqualità	Italy
La Calade	France
Centre Scientifique et Technique du Bâtiment	France
Carl Bro Group	Denmark
National and Kapodistrian University of Athens	Greece
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