

POWER HOUSE EUROPE

The big green
housing exchange

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POWER HOUSE
Platforms Updates

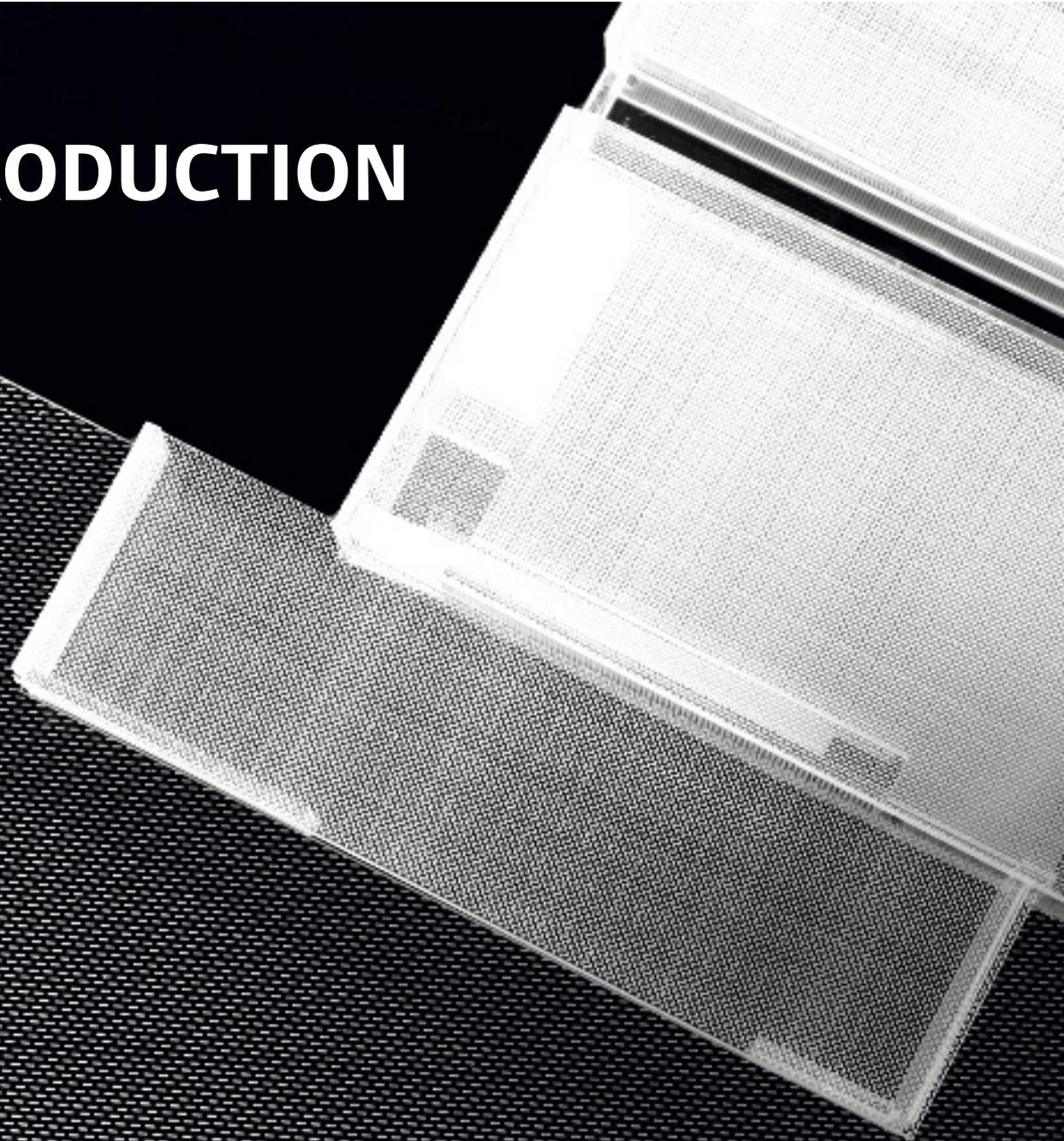
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INTRODUCTION



POWER HOUSE EUROPE – ‘The big green housing exchange’ will serve to aid the 45 federations and 32,500 public, cooperative and social local housing providers throughout the EU in the strategic management of the homes they provide with the aim of providing maximum support for the people they house in the face of future volatile energy prices. It is an important element of the ‘**CECODHAS-Housing Europe**’ Climate Change Strategy. This booklet gives a snapshot of the strategies already in place at national level and some samples of work being done on the ground.

- Claire Roumet, CECODHAS - Housing Europe Secretary General, Advisor POWER HOUSE EUROPE

*“Members of **CECODHAS -Housing Europe** can play a leading role in improving the energy efficiency of existing homes in great numbers, not only increasing quality of life for less privileged people, but setting the right example for private and commercial house owners and authorities. Governments and local authorities should finally prioritize energy efficiency over increasing energy supply and the buildings sector has the largest potential. **POWER HOUSE EUROPE** will help speed up the process by facilitating transfer of practical know-how and strategic advice between housing providers which are at very different stages of advancement in this field around the EU. ”*

- John Hontelez, Secretary General, European Environmental Bureau

*“In the past years, the European Parliament has always considered energy efficiency in the housing sector as an opportunity which was not sufficiently considered by EU policies. The recent changes in eligibility criteria to structural funds, allowing energy improvements in housing to be supported as requested by the Parliament, will partly fill this gap. The **CECODHAS -Housing Europe** Copenhagen Offer could surely be a step forward in using this new opportunity. The **POWER HOUSE EUROPE** project will draw on existing know-how and skills in this domain and, by facilitating exchange across the EU, will have a key role to play in capacity building and strategic support for housing providers.”*

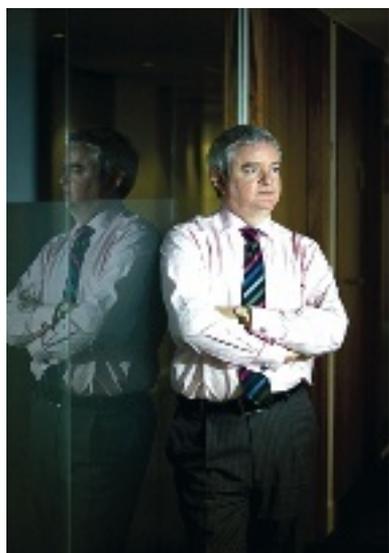
- Jan Ollbrycht, Chair Urban Intergroup, Member of the European Parliament

*“**POWER HOUSE EUROPE** will act as a gateway for professionals working in social and cooperative housing organisations, giving them access to the support they need to start building today the energy-efficient homes of tomorrow. It’s a key project in our portfolio of actions supporting energy-efficiency in Europe’s buildings.”*

- Patrick Lambert, Director of the European Commission’s Executive Agency for Competitiveness and Innovation (EACI). The EACI implements the Intelligent Energy Europe Programme under which POWER HOUSE EUROPE is financially supported.

FORE WORD

David Orr



David Orr
CECODHAS - Housing Europe President

With the backdrop of Climate Change and the UN Climate Change negotiations, **POWER HOUSE EUROPE** activities have increased in relevance due to the large potential energy gains and green house gas cuts to be made in residential properties. With 12% of Europe's housing in the EU 27, public, social and cooperative housing providers have a key role to play in achieving this potential. In advance of last year's climate summit, in their 'Copenhagen Offer' CECODHAS-Housing Europe members called on authorities to ensure that the right financial and regulatory conditions are in place to support them in triggering a refurbishment boom of their stock. This boom would require a rise in the refurbishment rates to 4% to reach the EU-wide target of 8 million homes by 2020. This could result in an estimated 20% cut in emissions thereby significantly contributing to national emission reduction and energy saving targets. The **POWER HOUSE EUROPE** project will help CECODHAS members and local housing providers to draw on the wealth of practical and strategic know-how from their counterparts around the EU to help meet those goals.

What led CECODHAS to take this initiative?

A number of factors led CECODHAS-Housing Europe to launch the **POWER HOUSE EUROPE** initiative.

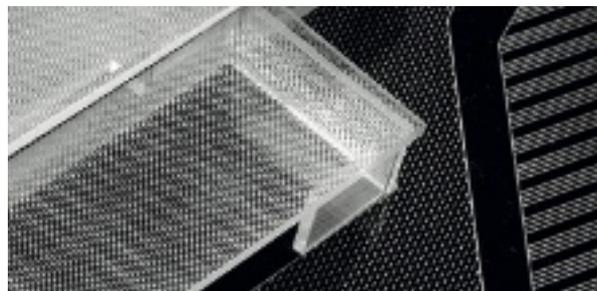
> **An increasing number** of EU legal acts such as the EPBD, the eco-design products directive, end-use energy services directive, EU renewables directive and the liberalization of energy markets, and the European Emissions Trading Scheme which have a direct impact on the daily ac-

tivities of housing providers. Throughout the EU our members are dealing with the same regulatory obligations and opportunities. This makes a regular dialogue between housing professionals at EU level useful.

> **Energy poverty** results from a combination of low energy efficiency standards in buildings, low incomes and high, volatile energy prices. Addressing the energy performance of buildings is the obvious step to be taken by housing providers. Some are also reducing the price for end-users through bulk purchasing from energy suppliers.

> **Insufficient awareness and take-up of resources which has been gathered at EU level.** Under the European research framework, the Leonardo programme and the Intelligent Energy European Program, a wide range of projects have been completed. Of particular relevance to **POWER HOUSE** work is the strand entitled retrofitting of social housing which has resulted in a catalogue of potentially useful resources. For a number of reasons including lack of awareness and language barriers, these resources have not been assessed or utilized fully. **POWER HOUSE EUROPE** will give an opportunity to housing federations to review these resources and communicate the most relevant ones to their affiliated organizations on the ground.

The support provided by the Intelligent Energy Europe programme enabled the kick-off of this initiative over one year ago. This booklet gives an overview of some of the work carried out to date.



POWER HOUSE EUROPE

An overview



The **CECODHAS**-Housing Europe **POWER HOUSE EUROPE** initiative, supported by the European Commission's Intelligent Energy Europe programme, will serve to accelerate empowerment of residents and the up-skilling of professionals working to reduce the carbon footprint of the social housing sector. This is being done by drawing on the existing pool of know-how and resources and facilitating the exchange of success stories and lessons learned throughout Europe.

POWER HOUSE EUROPE can be considered a knowledge base at European and national or regional levels providing the information practitioners need and allowing building professionals from Social Housing Organisations from all over Europe to contact each other and to access information on best practices on all aspects of energy management.

The project revolves around three key interlinked elements: Toolkits, **POWER HOUSE** Platforms, the Website and Exchange.

Toolkits

The starting point of the project are resources which have been produced by projects already supported by IEE under the Vertical Key Action "Retrofitting of Social Housing". **POWER HOUSE EUROPE** will maximize the impact of these projects through the creation of tailor-made toolkits designed on the identified needs at national, regional or local level.



The project is also securing an active hands-on targeted dissemination and knowledge exchange campaigns to promote the maximum deployment of these toolkits and to boost the introduction of optimal intelligent-energy practices at all operational levels of social housing organisations. This will pave the way for similar developments in the wider residential sector.

The Platforms

POWER HOUSE EUROPE national or regional platforms have been established by each partner in order to build the capacity of their members, the local housing providers, and create synergies with those bodies which will optimise the dissemination and deployment of project outputs. **POWER HOUSE** aims to encourage all the enablers of the energy transition from all sectors to work in partnership at national and European level and to diffuse the toolkits to relevant stakeholders.

The Website

POWER HOUSE EUROPE website (www.powerhouse-europe.eu) is a window to case studies from public, co-operative and social housing organizations and the most interesting resources and ideas to help housing providers improve their energy strategies. The site will also be a source of updates on relevant EU policy developments and a strategic way to help housing providers find partners for EU projects through a customized forum where they can also get advice or tips from other organizations around the



EU. The site will also be the link to members own national or regional energy platform pages. The **POWER HOUSE EUROPE** site will work in connection with the European Commission's BuildUp site, an initiative of which **CECODHAS-Housing Europe** is a Partner.

Exchange

To move from isolated pockets of best practices to large-scale take-up will require a structured and continued exchange between professionals. This will be fostered through study visits, bilateral contact and study visits fostered through **POWER HOUSE**.

The exchange component of **POWER HOUSE EUROPE** is supported by The Building and Social Housing Foundation (BSHF).

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What is slowing progress in the increase of energy efficiency and the use of renewable for housing providers?

Key results of the POWER HOUSE EUROPE needs analysis which will help POWER HOUSE platforms to establish their priorities and form their strategies at national and local level.

When work began on **POWER HOUSE EUROPE**, partners already had a good idea of what might be preventing housing managers from taking up the energy challenge in a systematic and ambitious way. However, to fine tune and direct activities within the project at local and European level, our member federations conducted a needs analysis survey to identify the key factors which local organizations perceive as being the main obstacles.

Background

We asked local, cooperative and social housing organizations throughout the EU what it would take to help them to radically reduce energy consumption and increase the use of renewable energy in the homes they build, own and manage. We asked them to outline what they perceive to be the key challenges and the main obstacles blocking progress in this field. Not all organizations answered however over 300 organisations did take the time to provide feedback.

Diversity

The responses came from a diverse group of local housing providers which is in fact representative of the diversity of the social housing sector in the EU in terms of differences of size (they range from owner/managers of 25 to 50,000 homes). The samples coming from Sweden, England, Italy, France, Spain, Estonia and Bulgaria also represents quite effectively the different climate zones in the EU. The types of organization is also widely varied and includes condominiums of individually owned apartments, municipally owned rental apartments, housing association which engage in equity shared ownership and rental, housing companies which build affordable housing destined for private ownership and a large proportion of cooperative housing companies. In terms of financial options available to the organizations, the range is also quite large where in some states, co-ops have

been opened with energy efficiency as priority while in others poor owners are left to their own devices in crumbling blocks.

The representativity of the sample means that the challenges and solutions shared between the organizations will potentially cover the whole spectrum of Europe's energy and housing issues in terms of financial resources, ownership structures, climate, stock characteristics and building traditions.

Cross-cutting needs

The needs differ greatly between providers depending on their size, location, legal status, in-house staff profiles; however there were a number of cross-cutting issues that figured highly across Europe.

Finance

With higher costs of meeting standards, access to finance was one of the key issues seen as an obstacle. In addition to high costs, cost misperception and lack of knowledge on cost recovery calculations is to be addressed. Another observation was the huge impact of tax incentives or grants in shaping the providers refurbishment planning (e.g. if renewable energy grants are available then this will be used even if insulation is not optimal) clearly showing that any public funding or incentive scheme must be well planned.

Information

Lack of time, insufficient neutral adapted information about new techniques and technologies, lack of long-term performance and maintenance data and lack of trained energy experts were also cited as being stumbling blocks on the path towards more sustainable housing. Another obstacle in many cases is the lack of energy awareness within the building profession with builders unwillingness to perform a familiar task differently and a lack of understanding of new techniques and technologies among installers, residents and housing provider staff.

Added value

For all types of housing providers there is a great interest in learning from European counterparts through technical visits and also finding out how to access European funding, whether directly through project financing or indirectly through the European Regional Development Fund. In some cases, where ambition was lacking, the federations also see a role to encourage their members to take more sustainable options. Federations also have a role to play in encouraging cooperation along the building chain to pave the way towards an up-scaling of eco-efficient refurbishment from building to neighbourhood scale.

From obstacles to action

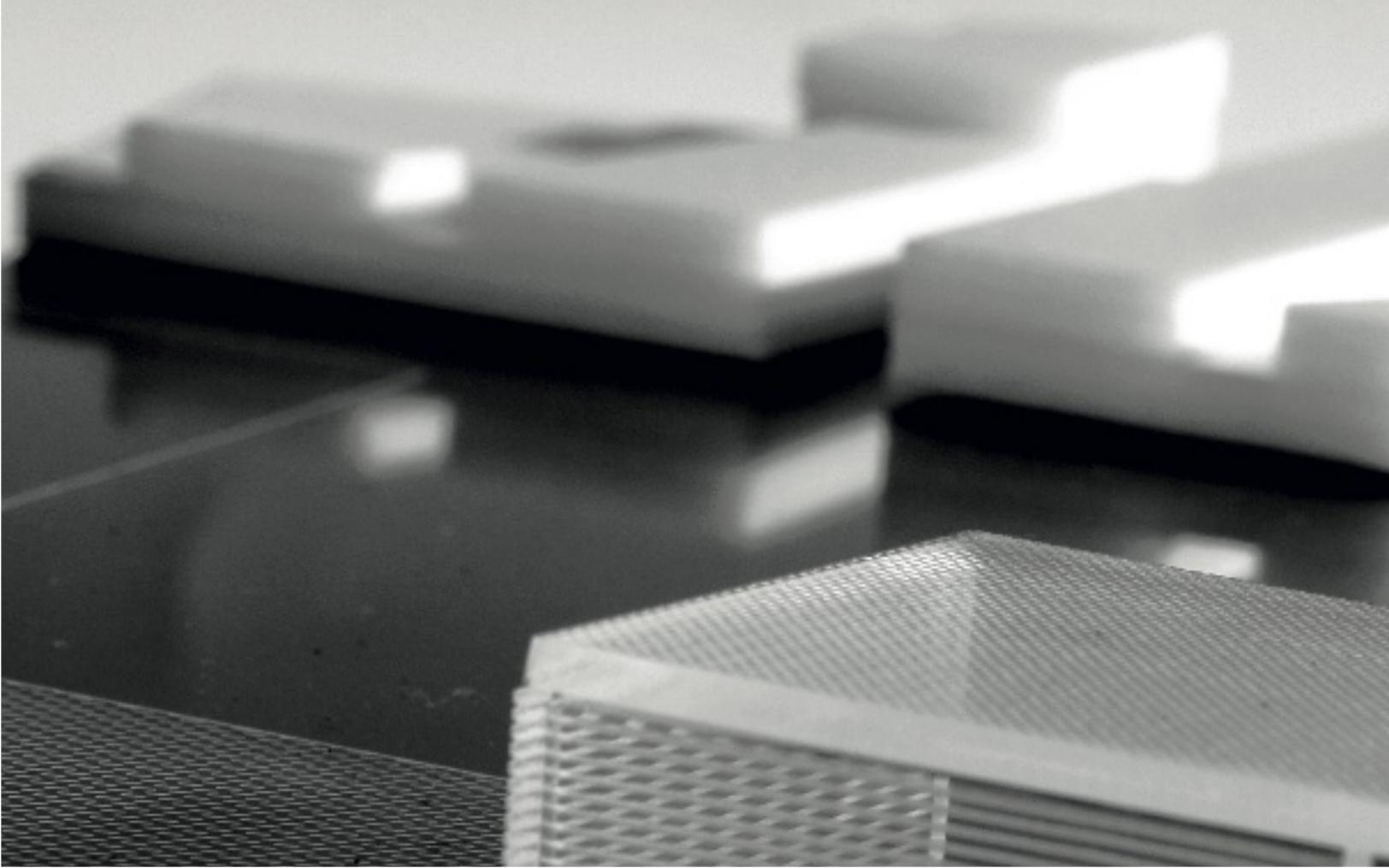
The results of the needs analysis have helped the **POWER HOUSE** Housing Federations develop their local communications strategies towards their members. Although there are broad common obstacles the process also revealed that the more local the level the more varied the needs are as they are determined by many different factors. The Federations will draw on the resources generated in European projects and case studies of interest from around Europe to put together a tool kit to aid their members in improving the energy performance of their stock in a systematic way.

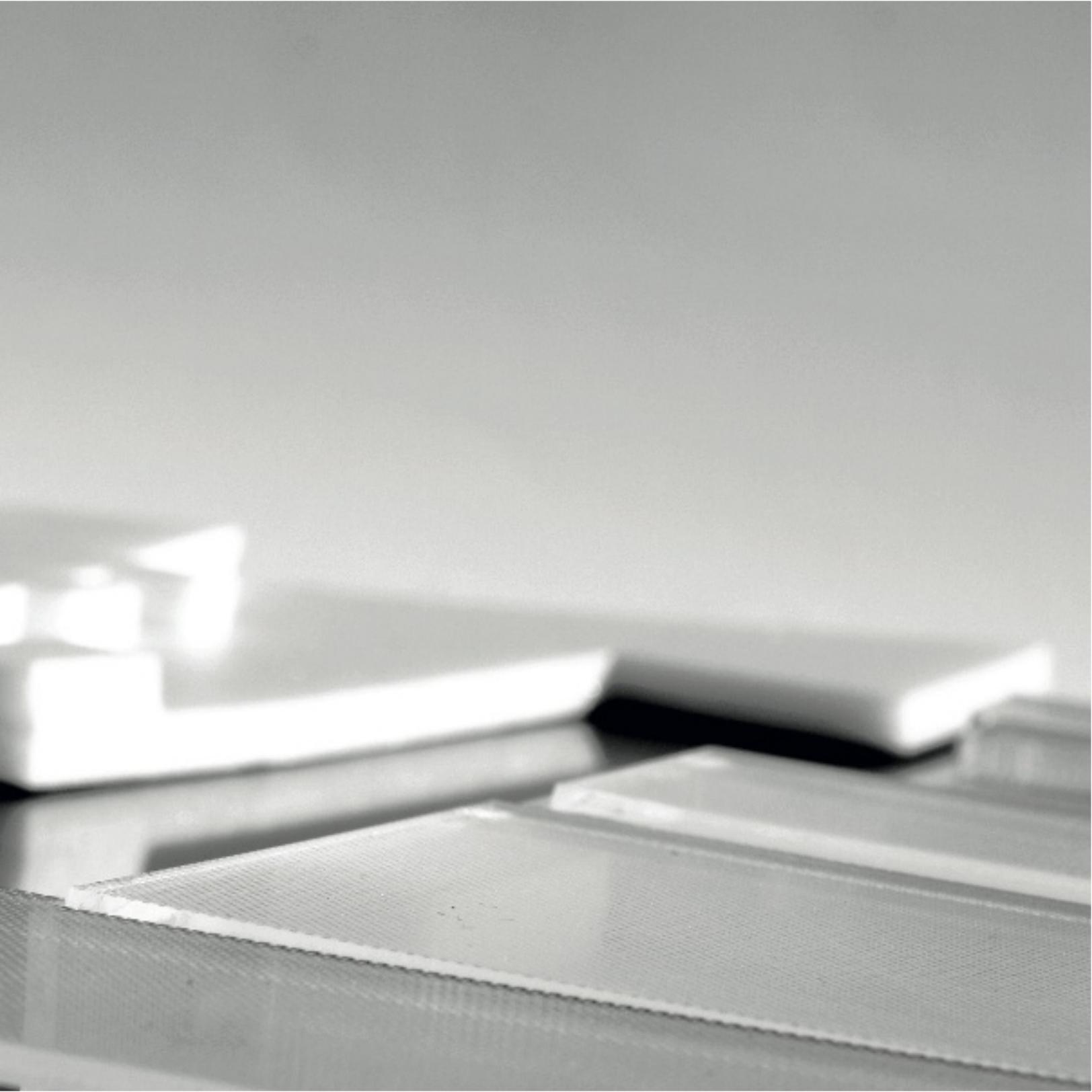
The following profiles give a snapshot of the strategies of each platform as determined by their member surveys and some samples of the completed or on-going work of their member organizations.



POWER HOUSE EUROPE

Activities





POWER HOUSE EUROPE activities in Bulgaria are led by BHA



BHA, the Bulgarian Housing Association, established in 1994 works to participate in the implementation of the National Housing Strategy and in governmental institutional, financial and legal reforms in the housing sector, to support the establishment and further development of a network of non-governmental housing organizations in Bulgaria where the national level of private ownership currently stands at 97%, to promote best practice in the maintenance, management and renovation of the housing stock in compliance with the contemporary requirements and European standards and to help the homeless and vulnerable social groups.

Platform Mission

The Bulgarian National POWER HOUSE Platform involves national and local policy makers, energy agencies and funds, national associations of construction companies in housing renovation and companies in production and import of construction materials for housing renovation, national branch organizations of architects and engineers, and the national union of homeowners' associations. The members of the National Platform are involved at different levels and in different ways in accordance with their role in increasing the importance of energy issue for housing and in order to build efficient partnerships in disseminating the results of EU projects and to find with them adapted solutions. The National Platform works in organizing various dissemination campaigns and providing easy access to information on state of the art developments in the field of energy efficiency and the use of renewable energy in the residential sector from throughout the EU. The work of the Platform will work to support measures outlined under the National Housing Renovation Program which aims to reduce current heating requirements by 30-40%.

"For the Bulgarian platform, the priority is to find ways to create legally and financially feasible scheme and models for the renovation of condominium buildings in private ownership which account for 97% of the building stock. Homeowners associations involved in **POWER HOUSE** report that information delivered to them on energy efficiency and renewable energy is commercially driven and lacking in detailed information on cost, maintenance and savings. It is often provided by producers of individual components by different companies and therefore the integrated approach which is needed to achieve whole-building approaches is missing. The survey revealed that top priority for home owners are basic energy efficiency measure with the highest return in terms of savings with limited interest in renewables. Home owners associations in Bulgaria have expressed a need



for customised training events. Also needed is information and know-how about the available financial sources and the dissemination of information on completed pilot projects.”

- Mr George Georgiev, Bulgarian POWER HOUSE Platform coordinator.

Case studies

Organisation Name: BHA - Bulgarian Housing Association

Project: Zaharna Fabrika Housing Estate - Sustainable Management of Condominium Buildings in Bulgaria

Location: Sofia, Bulgaria

Overview:

Since 2004 the Bulgarian Housing Association implemented a pilot renovation project in Sofia – Zaharna Fabrika Estate, in order to investigate possible solutions for a sustainable and efficient renovation and a subsequent management of the renovated condominium buildings. The project efforts were directed in tackling three main issues:

- Lack of know-how about energy efficiency in housing;
- Lack of adequate organisation of homeowners for building management;
- Lack of affordable financial tools for renovation of existing buildings.

The project was supported by two Dutch housing associations (De Nieuwe Unie and Woondrecht) and involved limited income homeowners of existing condominium buildings.

Main results or outcomes:

The pilot project achieved the following main results which have a decisive importance for the intended larger scale of energy efficient condominium buildings refurbishment that is planned under the National Housing Renovation Program:

- _The first legally established homeowners association was created;
- _Energy audits before and after renovation of the buildings were made;
- _Energy needed for heating of the buildings after renovation decreased by 50%;
- _Lower level of subsidizing the project leads to longer payback period (Renovation of block 10 with a “soft loan” has to be repaid in 20 years period);
- _Using of long term soft loan is based on the principle of constant running costs for the building – savings from the heating bills after refurbishment are directed to repayment of long term renovation loan;

The following obstacles were revealed during pilot implementation:

- _Subsidies for renovation are limited and application procedures are not clear;

_Lack of necessary regulatory framework for organizing and financing the renovation activities – better regulation is needed with regard to forming of homeowners associations and as well as the provision financial incentives for end users.

In order to be feasible energy efficient renovation measures for existing condominium housing have to be:

- _Decentralised by creating appropriate structures at local level;
- _Tenants organisations of tenants (homeownership associations) have to be created in order to assure the proper level of involvement in renovation activities;
- _Sufficient financial incentives (subsidies and tax relieves) have to be secured.

Particular attention must be paid to the end users – the apartment owners and the newly emerging associations of apartment owners.

The Project was distinguished with ENERGY GLOBE World Award – Prague 09 as National Leader Award.

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POWER HOUSE EUROPE activities in the UK are led by NHF

**NATIONAL
HOUSING
FEDERATION**

The National Housing Federation represents **1200 not-for-profit independent housing associations** and is the voice of affordable housing in England. Our members provide **2,5 million homes to 5 million people**.

Housing associations also provide much-needed neighbourhood services such as education and training schemes or financial inclusion services for the benefit of the whole community and are in business for neighbourhoods. The Federation supports and promotes the work that they do and campaign for better housing and neighbourhoods.

Platform Mission

“For the Federation, POWER HOUSE adds a useful European complement to on-going work to assist housing associations in developing and implementing energy efficiency and renewable energy strategies, serving as a channel for exchange of useful advice, case studies and contacts. POWER HOUSE is also a source of information on wider legislative developments such as rent restructuring, already implemented in other EU countries, and likely to have a significant effect on financing retrofitting for housing associations if implemented in Britain. The Members survey showed that the associations want information on the benefits and advantages of different approaches to meeting the UK code for sustainable homes, in particular they also want to hear about experiences in improving hard to treat properties and better ways of communicating technical data to residents”

- Olivia Powis, National Housing Federation - POWER HOUSE platform

“Difficulty in obtaining grants coupled with high costs of meeting standards is an obstacle for members therefore mobilisation of public funds for energy efficiency in social housing is central to the role of the platform. Meetings organised so far have all served to promote public and private investment to housing associations, with a particular focus on accessing European Regional Development Funding. These meetings have been followed by individual lobbying of the Regional Development Authorities who manage ERDF funds to ensure that the funds are made available to retrofit social housing stock.

- Corine Meier, Olivia Powis, National Housing Federation - POWER HOUSE platform



Case studies

Organisation Name: Radian Group Limited
Project: Generation Homes, Woodfields
Location: Kingsley, Hampshire – South East, England

Overview:

The project, undertaken with the support of the Energy Savings Trust, was to demonstrate how a minimum 60% reduction in household CO2 emission post refurbishment can be achieved by employing a systematic package of energy efficiency measures to a small neighbourhood of homes.

The six 1950s off gas network homes, 3 x 3 bed two storey semi and 3 x 2 bed semi bungalows, were in 2007, the first grouping of homes refurbished to meet the 'Generation Homes' standard in UK.

Main results or outcomes:

Provisional findings suggest that carbon savings achieved have been in the range of 49-83% against modelling of 75% and that running cost savings are in the range of nil – 50%.

Organisation Name: Places for People
Project: Whitechapel Twenty Fifty
Location: Oakenhead Close, Whitechapel, Preston, Lancashire, England

Overview:

The objective was to deliver 80% carbon reductions in mainstream housing using established solutions that work for the people who live in them. We wanted to:

- _ test the mix of measures and technologies;
- _ identify the real world carbon saving they produce;
- _ test the supply chains for carbon reduction measures and technologies,
- _ develop a clear cost base for achieving significant carbon savings;

- _ create replicable solutions for mainstream housing;
- _ deliver savings that do not rely on the commitment of householders.

Main results or outcomes:

The project is giving the opportunity to look closely at the barriers that exist in creating a low carbon scheme. We will use the data from the project to create new financial models to fund schemes across the UK. We will be able to understand the contribution that existing programmes can make as well as ones that are just now being developed such as Feed In Tariffs.

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POWER HOUSE EUROPE activities in Estonia are led by EKÜL



The Estonian Union of Co-operative Housing Associations is an organization uniting co-operative housing associations all over Estonia. Each co-operative housing association is a self-financing non-for-profit organisation managing one multi-apartment building. Membership of EKÜL is voluntary and there are more than **1400 members of EKÜL today. Our cooperative housing stock accounts approximately 15% of the national co-operative housing stock.** EKÜL represents Estonian co-operative housing associations on local, national and international level. Our partners are state institutions, municipalities, universities, private companies and NGOs.

Platform Mission

The Estonian POWER HOUSE platform is led by EKÜL with involvement of The Ministry of Economic Affairs and Communications, Tallinn City Administration, The Credit and Export Guarantee Fund KredEx. EKÜL work in close collaboration with KredEx to encourage the take up of loans. The loans have a low interest rate subsidies from the European Regional Development Fund and a loan from the Council of Europe Development Bank. As EKÜL members are volunteers without high-levels of training in building management, accessibility is a priority for all material delivered through the platform.

“Home owners major needs in this field are for technical advice and financial support. Energy efficient ventilation and lighting, renewable energy at the top of the list. The first major event organised within the Estonian POWER HOUSE platform was an event to promote the continued mobilisation of public funding, particularly the European Regional Development Fund. This was targeted at homes owners not only in Estonia but also in the Lithuania and Latvia. Moving forward EKYL see the need to develop the potential of the internet as a source of information on financial and technical issues as it is currently being under-utilised.”

- Estonian POWER HOUSE platform coordinator, Anu Sarnet



Case studies

Organisation Name: Co-operative Housing Association Saha tee 2

Project: Retrofitting of multi-apartment building Saha tee 2 (2003–2008)

Location: Saha tee 2, Loo (PK 8), 74201, Jõelähtme vald Harju-maa (Harju county), Estonia

Overview, Main results or outcomes:

The agreement of all owners in the apartment association was needed to carry out energy-saving refurbishment works on this apartment block.

The building is situated in the centre of the village of Loo, so the newly refurbished façade held to give the whole village a facelift and will serve as a good example for the other multi-apartment buildings in the village.

The project illustrated the importance of carrying out elements of the work in the correct order and of involving all apartment owners in the preparation and decision-making.

Organisation Name: Co-operative Housing Association Turu 12A

Project: Retrofitting of multi-apartment building Turu 12A

Location: Turu 12A, Tapa, 45107 Lääne-Virumaa, Estonia

Overview:

The renovation was started in 1997. The aim was to achieve energy saving 35% and retrofit the building. Preparations and planning took 5 years. The complex renovation was financed by apartment owners and a KREDEX bank loan.

In the first phase of the project (more than two years), the aims and plans were discussed with all 60 apartment owners who had to invest to the project. This helped the homeowners to understand the process of retrofitting and ideas of energy saving.

Main results or outcomes:

Approximately 33% energy saving was achieved. The appearance of the building was improved. The main positive outcome for the board of the apartment association is that the apartment owners are satisfied with the results of the project.

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POWER HOUSE EUROPE activities in Flanders are led by VMSW



The VMSW is mainly charged with the implementation of the Flemish housing policy priorities. It does so by planning, assisting, and financing the activities of **102 SHM's (sociale huisvestingsmaatschappijen - social housing companies)** which build, promote, construct, refurbish, let and sell social housing, both rental and ownership. It also provides technical, legal and financial assistance (VMSW operates as a bank in that it finances these operations and also grants mortgage loans to private buyers of social houses) and collects existing data in order to feed into and assist in the future policy making.

Platform Mission

The VSMW platform has established an energy first-aid 'hotline' service which provides their members with practical advice and information on all energy related issues. The service has three thematic pillars: the first on all issues related to rational use of energy, such as grants available for energy efficiency, fuel poverty. The second on all certification-related questions and the third on renewable energy, best practice examples and technical queries. The Platform hosts workshops and seminars to boost communication towards between partners. Direct platform partners are the members of VMSW with cooperation extending to the social housing federations throughout Belgium. The platform will also rely on expertise from the education and private sector and extend collaboration to the policy makers and partners in the construction sector.

"Our members are being faced with a number of challenges and obstacles. They include the fragmentation of funding instruments in the region which is confusing for those wishing to access grants. Authorities also have placed a strong focus on low energy new-build as opposed to existing housing. Members want more information on long-term performance, maintenance needs remarking that this type of information is not available once a pilot project has been completed. The issues of residents' energy related behaviour is also insufficiently dealt with. With this platform we will start by ensuring that our members have enough information on what their obligations are in terms of energy certification, financial assistance available at regional level. We will highlight good practices and work towards the



integration of energy performance data in our stock databases. In the longer term we aim to provide a one-stop-shop on all energy related issues for our members and advance collaboration with other social partners.”

– **Flemish POWER HOUSE platform Coordinator:**
Mr Bernard Wallyn

Case studies

Organisation Name: CV Zonnige Kempen
Project: St-Antoniuspleintje
Location: St-Antoniuspleintje, Westerlo (Zoerle Parwijs), Belgium

Overview:

The target of the project was to contribute to the renewal of the centre of the town of Zoerle-Parwijs and to implement an ‘extreme energy’ concept, not typical of the social housing sector. The project included the following elements:

- _ Reduction of heating requirements (compact design, insulation);
- _ Use of renewable energy from the sun (directly and indirectly);
- _ Optimal conversion of energy (high performance);
- _ Measuring, monitoring, evaluating, adjusting;
- _ Guidance for tenants;
- _ Communication of results.

Main results or outcomes:

The project was, and still is, a learning process where more experimental techniques are put into practice and evaluated with the support of different technological Institutes and universities.

Organisation Name: CV Zonnige Kempen
Project: Waterstraat
Location: Waterstraat, Hulshout (Houtvenne), Belgium

Overview:

This project demonstrates energy efficient design and building in Belgium and promotes energy efficient technologies in (social)

housing. In the past, these techniques were dismissed as too expensive. The average annual energy consumption of a ‘standard’ Belgian home is 220 kWh/m². The target for this project is 50 kWh/m².

Other project objectives :

- Integration of solar energy;
- Lower water consumption;
- Maximum use of healthy and sustainable materials.

Main results or outcomes:

A reduction of the energy use by 70 % for space heating and 50 % for domestic hot water was possible by well considered actions and decisions during design and construction.

A compact architectural concept makes collective heating and hot water more efficient than individual systems.

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POWER HOUSE EUROPE activities in France are led by USH



The guiding principles of USH are solidarity and housing quality. Its main activities are construction, acquisition, management and financing of housing, urban planning, city planning and services to the local communities. USH manages 5 million homes for rent and sale and has about 850 members with various legal statutes (public bodies, anonymous societies, cooperatives), but all are non-for-profit organisations.

Platform Mission

The USH-led French Power House Platform will work to support their members in the application of the French National Climate Change strategy 'Grenelle de l'environnement'. The objective of the social housing movement in the context of the Grenelle is to bring the most inefficient housing currently rated 'E', 'F' and 'G' up to a 'C' rating. And to establish the right technical and financial framework to bring the 'D' rated housing up to a 'B' rating. The Platform will work in partnership with industry to develop the best approaches to energy efficiency and renewable energy in housing. The POWER HOUSE France site will be linked with the European site and will provide social housing managers with information on legislation, finance and social issues related to energy efficiency. The platform aims to collaborate strategically with bodies such as the National Energy Agency ADEME, the State Bank (Caisse des Dépôts et Consignations) the National electricity and gas companies (EDF & GrDF).

"Local housing providers want to get strategic energy action plans in place within their organizations to achieve their targets. They see a huge learning potential in having a structured exchange with their French and European counterparts on issues related to choice of products, sources of finance and new technologies. Members want to learn more about experiences gained through completed projects, in particular they report a lack of information on costs of investment in energy efficiency, costs of maintenance, resulting energy savings made. The platform will work to help members access the information they need and will assist them in getting involved in European projects. Study visits



will be an important component of the work. The French POWER HOUSE team will also work to ensure that information on EU funding streams such as the European Regional Development Fund (ERDF) will reach those who need it at local level”(147)

– **Carine Puyol, French POWER HOUSE coordinator**

Case studies

Organisation Name: Le Toit Vosgien, Housing Association
Project: New Positive Energy Housing in France
Location: Les Héliades –Z.U.S de Saint Roch-Saint Dié (2007-2009)

Overview Main results or outcomes:

The construction of 30 wood frame energy positive social rental homes in multi-family building. The homes will have high levels of insulation (320 and 310 mm of mineral wool in the walls and roof respectively, triple glazed windows, double flux ventilation with electric backup, production of hot water via solar panels, micro-co-generation boilers .

In preparation for this project, the Toit Vosgien team visited a number of projects in countries with most experience with positive energy housing. Total energy production in the homes is forecasted to be greater than consumption, with an average surplus energy of 38.2 kWh/m². 20% of the costs of the construction were covered by the organisation’s own funds which means that the replication difficult. The project would be replicated in social housing as it ensures low running costs for tenants.

Organisation Name: CILIOPEE Hermitage
Project: J’éco-gère
Location: Department of Lot-et-Garonnes (France)

Overview:

The project aims to prevent social housing residents from falling

into debt as a result of unpaid utility bills, in particular energy bills. Under the scheme there are two levels of activity. There are general briefings aimed at informing residents on average levels of consumption and exchanging best practice. Interested residents are invited to attend additional ‘level 2’ meetings which give them an opportunity to investigate particular themes in more depth and to examine more closely best practices.

Main results or outcomes:

Since September 2008, nearly 1,200 people have been invited to attend meetings of level 1 and 2. In general, meetings are opportunities for lively exchanges and play an important role in the social life in the new residences. New resident can get to know each other around a glass of juice. The issues are addressed using simple materials and accessible language which promotes learning and in addition, the fun atmosphere of the meetings encourages public speaking.

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POWER HOUSE EUROPE activities in Italy are led by CECODHAS Italia



CECODHAS Italia gathers the three main Italian social housing federations: Federcasa (representing 108 public corporations which build and manage approximately 770,000 social homes for low-income groups), Federabitazione-Confcooperative (representing 3,500 non-profit cooperatives providing 15,000 new dwellings per year for sale or for rent for low-mid income families) and Legacoop Abitanti (representing 867 cooperatives with 418,050 members with 30,000 dwellings with 30,000 still owned by cooperatives). The three organizations together, representing the public and cooperative sector, have 6300 members and manage about one million Social Housing dwellings across Italy.

Platform Mission

Led by CECODHAS Italy, the Italian POWER HOUSE Platform will work to mobilize actors in the energy transition in the residential sector. The work of the Italian platform is divided thematically into 3 themes, social technical and financial. The aims are to increase the number of homes which are retro-fitted annually by 20% in comparison to year 2007, to decrease household energy bills by 10% in comparison to 2007 and by the end of 2020 decrease the energy consumption and the production of CO2 by 20% compared to 2007. The platform facilitates collaborations with other key actors such as the public administrations, trade associations in the construction sector and environmental organisations.

For Federabitazione-Confcooperative, the needs analysis survey revealed low interest in high-tech solutions with members favouring passive architectural solutions such as natural ventilation. Information on efficient water management is also in growing demand. The survey also showed the need for training of managers of the cooperatives in Life-cycle-costing as a way to combat cost-misperception. The Cooperative Federation also sees the need for the creation of increased demand on behalf of residents through awareness raising on the advantages of sustainable low-energy living. Federcasa's members showed a high interest in learning about refurbishment project management and financing and on the technical side, management of heating systems, new heating systems, renewable energy and ventilation were the 'hottest topics'. The cooperatives affiliated to Legacoop Abitanti expressed a demand for low cost customised training



courses providing neutral information. For both cooperative federations, while new housing is being built to high energy standards, because the large majority of their stock is owned by the co-operators, the challenge is to re-build a relationship with residents to promote refurbishment and asset management strategies.

Case studies

Organisation Name: COPES, Consorzio di Cooperative (Member of Federabitazione-Confcooperative)

Project: The Villa Fastiggi SHE Project

Location: Pesaro, Italy

Overview: The eco sustainable project of Villa Fastiggi neighbourhood combines the protection of natural environment and elements of bio-architecture with the renewal and renovation of the present handicraft industrial and commercial areas close to the site of intervention.

Main results or outcomes:

Participatory design process and building user manual

- Support to develop a new local regulation on environmental design in buildings.
- Independent foot and cycle paths 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 the re-use 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
- Area dimension: 150,000 m²
- Building area: 23,000 m²
- Number of dwellings: 333

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POWER HOUSE EUROPE activities in Italy are led by CECODHAS Italia



Organisation Name: Coop Casa sc (Member of Legacoop Abitanti)

Project: Botticino Mattina - Abitazioni Solari

Location: Botticino Mattina, Via De Gasperi 62,64,66 - 25082, Brescia

Overview:

This building marks the beginning of the path of Coop Casa towards the construction of buildings with low energy consumption and high living comfort houses.

The ultimate goal of this course is to develop solutions to be adopted as construction standards for low environmental impact and high living comfort houses.

The construction site of this building was particularly suitable, as it was possible to place the main façade toward south, free from shading, hence ideal in order to exploit the solar radiation actively and passively.

Particular attention was given also to the economic aspect: construction costs were kept low, with no significant changes in relation to a building with standard features.

Main results or outcomes:

The building has been occupied since 2004. Coop Casa has been monitoring the energy consumption, which have confirmed the effectiveness of the chosen energy efficiency solutions: the energy need for heating is approximately 60 kWh/m² year, while the overall cost for heating and domestic hot water is about €430 per apartment per year.

These results are particularly favourable when compared to the average energy need for space heating in existing building in Italy, which is 140 kWh/m² year. It has been also very important to inform residents about the correct operation of thermal systems, especially in the case of floor radiant heating systems, where the "heat source", it is not physically identifiable and the response time (inertia) is much higher than in the case of the traditional radiators.

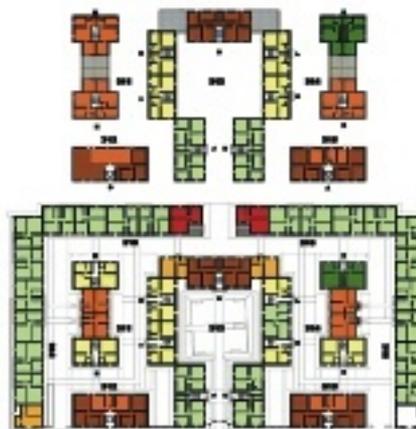
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Organisation Name: ERAP Ancona, public housing provider (Member of Federcasa)

Project: Senigallia, The Villa Aosta neighbourhood, 'Insieme appassionatamente' (together- with passion)

Location: Senigallia, Ancona, Italy. (2009-2010)

Overview:

This on-going eco-efficiency renovation of 80 appartments their environs, and district heating system dating from the 1930s in Ancona, Italy is of particular interest due to the 50-50 mix of owner-occupiers and tenants, the particularly deteriorated conditions of the buildings and the role the project plays in improving community relations. Several planning meetings were held between residents where discussions resulted in a cost sharing agreement. The €4 million cost is split between the housing providers own funds (40%), the province of Ancona (40%) and the residents themselves (20%). In addition to natural shading and insulation improvement, 150 m² solar panels have been added to supply hot water needs and photo voltaic panels to supply 15 kW energy for common spaces including the new low energy LED light bulbs.

Main results or outcome:

Improved community relations and living comfort, with residents no longer blaming housing providers and authorities for inadequate living conditions. Reduced energy consumption through increased efficiency and micro-generation.

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POWER HOUSE EUROPE activities in Spain are led by AVS

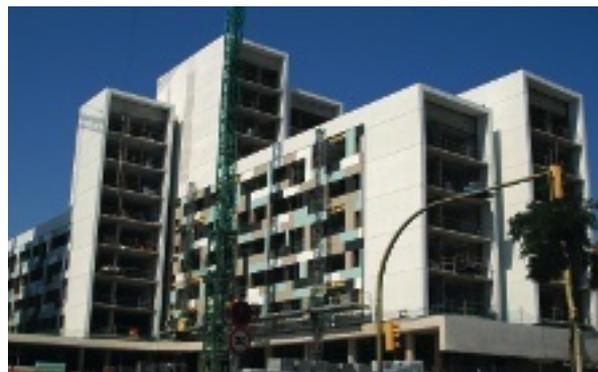


AVS is a national body representing **164 public housing which provide social housing for owner occupation and manage a total rental housing stock of 249.339 units**. AVS aims are to urge the public authorities to provide the necessary condition to increase the productive public housing to help implement the right to housing as listed in the constitution, to boost sustainable development through sustainable urban policies such as the regeneration of historic neighborhoods and city centres, and to promote sustainable construction and the reduction of poverty and social exclusion.

Platform Mission

The Spanish Platform's mission is to deliver services to build the capacity of their members in the field of green construction. Currently 17 regional housing companies are active participants in the Spanish POWER HOUSE platform. At national level the Platform collaborates strategically with the Spanish Ministry for housing, the CENER (National Renewable Energy Centre) and the Spanish branch of the International Initiative for a Sustainable Built Environment. The platform will also work with authorities at the level of the autonomous communities in Spain as this is the level at which laws governing buildings standards are formed and implemented.

"The results of the POWER HOUSE needs analysis survey made clear that one of the Spanish power house platform main tasks will be to overcome the current information mis-match which is slowing progress at local level. Much of the available data and information on technologies, construction techniques and project management is not adapted to the Spanish context as it is produced with different climatic conditions in mind, often only available in English and not adapted to the context within which Spanish social housing providers operate. Access to appropriate financial tools will also be a focus of platform communications activities via workshops, seminars, conferences which AVS will coordinate over the coming two years. The platform will also be a useful forum for speeding up market development by providing a forum for collaboration with private sector actors which



may lead for example to large scale performance guarantees for new renewable energy systems which would reduce the risks associated with investment.”.

- **Carlos de Astorza, Spanish POWER HOUSE Platform Coordinator**

Case studies

Organisation Name: Habitatges Municipals de Sabadell, S.A. (VIMUSA) Sabadell local authority housing agency

Project: New Construction of rental housing units and development of urban space

Location: Sabadell, Catalonia, SPAIN

Overview & Main Results and Outcomes

_ This development of 168 social rental housing units, due for completion in march 2010, in blocks of 6 to 10 stories has been received an 'A' rating under the LIDER and CALENER schemes.

_ A central geo-thermal heating and cooling system using efficient heat-pumps and boilers which will eliminate the need for inefficient air-conditioning systems now a major energy consumer in Spain.

_ Passive energy saving features were included at design stage to ensure that all of the homes receive sunlight, to optimise natural ventilation, suncreening and shading. A continuous insulation method which eliminates cold bridges was applied.

_ Photo-voltaic panels have been installed and rain water is being re-used. The energy use in the housing and the library and service centres in monitored and managed in real time

Organisation Name: Sociedad Municipal Zaragoza Vivienda

Project: Pilot Renovation of 1960's apartment blocks

Location: Zaragoza, Spain (April 2009 – May 2010)

Overview & Main Results and Outcomes

_ By insulation of the entire building envelope and replacing heating systems, the Zaragoza municipal housing agency aims to bring these 3 apartment blocks built in the 1960 up to the standards required for new social housing in terms of comfort, accessibility and energy efficiency. The work is a pilot project and will be replicated in 30 additional blocks containing 656 homes as part of plan to refurbish entire district.

_Apartment owners in the buildings concerned are mainly elderly and on low-income which means that the project falls under a scheme whereby the planning, management of financial assistance, technical assistance, social assistance are the responsibility of the public housing agency while tenants take charge of some tasks to which they contribute between 20% and 30% of the cost.

Main Results and Outcomes

- Solar energy will supply an average 60% of the annual water heating needs while highly efficient condensing gas boilers will be added.
- This pilot scheme revealed that there is a need to urgently address factors which are slowing progress and causing delays such as excessive time needed for planning permission, delays in reaching the necessary agreement between residents and insufficient access to private financial instruments.

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POWER HOUSE EUROPE activities in Sweden - HSB



HSB is a cooperative housing association founded in 1923, formed and organised on central, regional and local level, representing 33 regional co-operative associations who in turn have 3,903 cooperative local housing societies as members. HSB-cooperative housing stock amounts to 316,000 with 20,500 rental units. Other managed housing stock amounts to 30.200. With 648 new dwellings built in 2008. HSB members are committed to contribute to a sustainable environment and climate-smart energy consumption and usage. By doing this they intend to become the most respected actor in housing. HSB is also taking an active part in international cooperation through our membership in ICA, CECODHAS-Housing Europe and NBO. In cooperation with the Swedish Co-operative Centre we participate in housing development projects in for example South Africa and Vietnam.

Platform Mission

“POWER HOUSE EUROPE is a part of HSB Climate strategy. The strategy sets target for HSB Cooperatives of 40% reduction in CO₂e (CO₂ equivalent) by the 100th anniversary of the organisation in 2023, with 2008 as a base line. Calculations of HSB’s climate impact are made annually based on a common methodology and are integrated into HSB sustainability reporting. HSB National Association, HSB regional associations and HSB companies have already signed up to the HSB Climate Agreement and started to calculate their climate impact. HSB members see POWER HOUSE EUROPE as a good opportunity to exchange experiences and new ideas and compare progress in different countries. The POWER HOUSE survey revealed an interest in finding out more about all technical building and heating system improvement related information but also in energy efficient appliances. ”

- Mia Torpe, HSB Environmental Manager

Case studies

Organisation Name: Tenant Owner Association (TOA) Rönnedal

Project: Heat recovery

Location: Rönnedal, Sweden

Overview:

The Tenants Owners Association Rönnedal consists in total of 7 buildings of which there are 23 ground floor dwelling built in



rows with 2-4 apartments in each row. Built in 1992, the buildings are heated by district heating and have mechanical exhaust ventilation system with fans placed in each apartment. In Spring 2006, it was decided to build a recovery culvert for the association premises between the boiler room and the homes.

The outdoor air ventilator is located above the window, there is no recovery system. Compared to the Swedish 'Nils Holgersson' benchmark report, the consumption was 27% higher than it should have been so the assembly decided to introduce individual meters for heating and domestic hot water to reduce use. The meters revealed that there was still 50% heat loss rate. The board initiated a study which results in recommendations for a continued energy savings plan including the downsizing of water meters saving SEK 11,700 (€1,100) in fixed charges.

Main results or outcomes:

This project which was managed by the residents succeeded in using waste heat to heat the homes. In the first year there was an average drop of 13% drop in heating consumption and 42.7MWh in energy savings. The investment saved SEK 42,000 (€4,000) in one year and raised environmental awareness among the residents.

Organisation Name: Tenant owner association Pyndaren

Project: Energy efficiency

Location: Pyndaren, Sweden

Overview:

The tenant owner association Pyndaren consists of a total of 55 storey buildings with 135 apartments constructed in 1977. The overall heat area A_{temp} is 15,795 sq m. (A_{temp} = floor area intended to be heated to more than 10°C) The buildings are heated by district heating with conventional regulation for heat and domestic hot water.

The TOA Pyndaren made the decision at the end of 2006, to make the following energy efficiency measures:

- Replacement of FTX-units with plate heat exchangers (Supply air/Exhaust air/ Recovery) to rotating heat exchangers, with carbon filters on the supply air in case of any exhaust air leakage.
- Water saving measures: Replacement of aerators and shower heads in all apartments. Check and repair of any leakage in all apartments.
- Computerisation of district heating plant: Control of heating and hot water.
- Water treatment without chemicals: Cleaning of radiators and tap water systems.
- Continuous operation and energy optimization/Adjustment of heating and ventilation systems.

Main results or outcomes:

Investment costs of approximately SEK 2.6 million (€250,000) which gave a saving of approximately SEK 400,000 (€38,000) /year. This resulted in reduced energy usage in 2008 compared with 2006 as set out below: District heating: Rad/Ventilation/ Hot water 379 MWh. NOTE! (Hot water share approx. 38 % = 57 MWh included in the total for heating)

Electricity: Lower consumption fan operations 147,571 kWh / Property electricity/

Cold water: Water consumption 2,157 m³

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POWER HOUSE EUROPE activities in Sweden - SABO



SABO - the Swedish Association of Municipal Housing Companies - is the organisation of the public housing companies in Sweden. The approximately **300 companies affiliated manage some 730 000 dwelling units and house one in 4 Swedes**. This is about 20 percent of the total housing stock in Sweden and about one third of all dwelling units in multi-storey houses. SABO provides expertise in different fields, exchanges experience between its members and cooperates with national authorities and organizations. SABO also arranges conferences and takes on consultancy assignments.

Platform Mission

The SABO platform focuses their activities on a common goal between their members entitled the 'SABO Energy Challenge'. The challenge began in February 2008 when directors of SABO members agreed to sign a declaration committing their organizations to reduce energy consumption by 20% between 2007 until 2016. So far, 99 companies have taken the challenge which obliges them to report their actual energy consumption to SABO once a year. These companies together own over 370, 000 apartments. SABO assists them in achieving the 20 percent energy reduction goal through platform activities such as technical workshops and seminars, conferences, study visits and access to an information service to answer their technical questions. A publication identifying the 'top 10 energy thieves' has been produced, giving technical advice to members on how to tackle the top 10 causes of energy waste in apartment buildings owned by SABO members, these include wasteful practices in the laundry rooms, excessive heat escaping through roofs and unnecessary heating of garages. SABO also hold an annual competition between their members and awards a person with high efficiency gains. After the first year of the work, figures reveal that the average energy use has dropped from 149 kWh/m² in 2007 to 144 kWh/m² in 2008, which amounts to an average saving of 2.3%.

"Approximately 380,000 housing units in SABO's members ownership were built between 1960 and 1975 and many are in need of refurbishment. The POWER HOUSE survey showed that our members find that there is a lack of competent energy experts and in some cases a need for up-skilling and a clear demand for more information on pay-back on investments and maintenance costs. There is also a lack of financial resources within the companies.



The platform will encourage exchange of best practice and knowledge between SABO members and the POWER HOUSE platform will make the link with the our European counterparts to help overcome these obstacles”

- SABO POWER HOUSE Platform Coordinator: Therese Rydstedt

Case studies

Organisation Name: Owned by municipal housing company, Karlstads Bostads AB, (KBAB)

Project: Orrholmen Façade Renovation

Location: Karlstad, Sweden

Overview:

The renovation of these 630 seven-story apartment blocks built in the 60's in the residential area of Orrholmen near the centre of Karlstad was carried out by the Karlstad municipal housing company between 2004 and 2009. The works served to cut energy use while eliminating discomfort caused by temperature variations, drafts from windows and balcony partitions. Measures included:

- The removal of unnecessary electrical equipment, including seven large fan units which supplied the garage with preheated exterior air.
- air-tightness and insulation improvements served to seal against wind loads, improve soundproofing and reduce cold bridges between the apartments and towards the exterior.
- New glass partitions and doors with good U values were added to balconies.

Main results or outcomes:

Increased comfort > reduced energy bills

A small charge supplement has been added to the rent, but according to KBAB's estimates, the energy measures are profitable. Considering energy price increases and annual reduction of energy and power costs this means that there is a repayment period for the measures of about 12 years.

Organisation Name: Municipal housing company Alingsåshem AB

Project: Refurbishment

Location: Brogården housing estate, Alingsås, Sweden.

Overview:

Alingsåshem AB has undertaken refurbishment work to reduce the energy consumption of 1970's Brogården housing estate, to bring it to passive house standard. Since works began in 2005, Brogården has attracted 500 groups on study visits and Alingsåshem believes that the area has inspired many. One reason for this may be their holistic approach which combines economic, environmental and social objectives, which is not yet so very widespread in Sweden. Works are set to continue until 2013. Individual meetings with residents to inform them on plans and progress have been arranged on a weekly basis in addition to the delivery of a newsletter.

Main results or outcomes:

- Alingsåshem has obtained almost one million from the Swedish Energy Agency for the rebuilding of Brogården. The housing company estimates that the repayment period will be ten to twelve years.
 - The forecasted energy savings are estimated at 60%. The energy use is estimated to reduce from 216 kWh to 92 kWh per square metre, which is higher than new building standards.
 - In the longer term, the refurbishment should also ensure that older people can remain living in the area for as long as possible.
- Future plans:
- Investments will also be made in a solar power plant connected to the district heating.

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POWER HOUSE EUROPE activities in Wallonia are led by SWL



The SWL (Société Wallonne du Logement – Walloon Housing Company) is a public utility organisation with 68 members (local public housing companies) managing a rental housing stock of 103.000 units. Through the renting, acquisition or building of housing, its major mission is to provide decent housing for all, in particular for citizens from a modest background

Platform Mission

In September 2009 SWL decided to establish a Regional POWER HOUSE Platform in collaboration with the Association of Walloon Housing and Public Services Companies (AWAL), the Association of Walloon Advisory Committees of Tenants and Owners (AWCCLP) and the Walloon Confederation of Construction (CCW). The main mission of the platform is to disseminate the results of European projects on energy efficiency by promoting the exchange of best practices both at local and at European level. Particularly, the platform aims at raising awareness of owners and tenants in order to improve energy efficient behaviors and prevent fuel poverty.

Case studies

Organisation Name: SWL - Société Wallonne du Logement

Project: Programme Exceptionnel d'Investissements (Exceptional Investment Programme)

Location: Walloon Region, Belgium

Overview:

In 2003, the Walloon Government provided funding for over 1 billion € - partly financed by the EIB through a 500 million € loans - to finance an extensive refurbishment program in the Walloon Region named Programme Exceptionnel d'Investissements (PEI). The program led the renovation of



34,605 dwellings and the demolition of other 1,748 over a period of five years.

Main results or outcomes:

Despite the efforts, about 70,000 dwellings still need to be refurbished.

Follow-up :

European Investment Bank

The EIB agrees to partly finance the continuation of the EIP with an amount of up to approximately 250 million euros, provided that the SWL integrates the concepts of energy efficiency in his projects, including the issuing of energy audits.

Council of Europe Development Bank

The concept of sustainable development in social housing has been presented to the C.E.B. in order to obtain funding for providing quality housing. As a matter of fact, SWL has already begun a process to inventory the public housing societies' park in order to optimize the programming of interventions for energy improvements (heating, ventilation, condensation...). In any case thinking of the impact of an early programmed work in homes without considering insulation, ventilation, etc. could be catastrophic for the sustainability of housing (ventilation, condensation, asbestos ...). Notwithstanding the technological approach in housing, other factors must be considered such as environment, the human aspects (mixed population, the family composition, the social and financial situation ...).

Organisation Name: SWL - Société Wallonne du Logement

Project: Habiter malins – Charges en moins – Lower charges and increased comfort

Location: Walloon Region, Belgium

Organisation Name: SWL - Société Wallonne du Logement

Project: Habiter malins – charges en moins ‘ Lower living expenses’

Location: Wallonie Region, Belgium

Co-funded by Europe (Objective 1 - Phasing out) and the Walloon Region, the project involves eight sites in seven local public housing companies (SLSP). On the one hand, it is to reduce the burden of social tenants intervening on the equipment in 209 dwellings: more efficient, lower consumer, solar energy, installation of control equipment and measuring fuel consumption, etc... On the other hand, the project aims to educate tenants and managers to the RUE (Rational Use of Energy).

The project aimed to raise awareness mainly among tenants and owners in social housing on energy efficiency but also to carry out practical demonstrations of energy conservation during the various phases of construction of a building.

Main results or outcomes:

From 2003 to 2007, many training sessions were organised in order to raise awareness among social tenants on the theme of energy use. Information sessions were also organised for the stakeholders in the field of social housing.

Achievements were also carried out in many local public housing companies (heating system, new boilers more efficient).

During the project, a dvd was directed to the attention of the social tenants : a simple presentation of many tips for saving energy.

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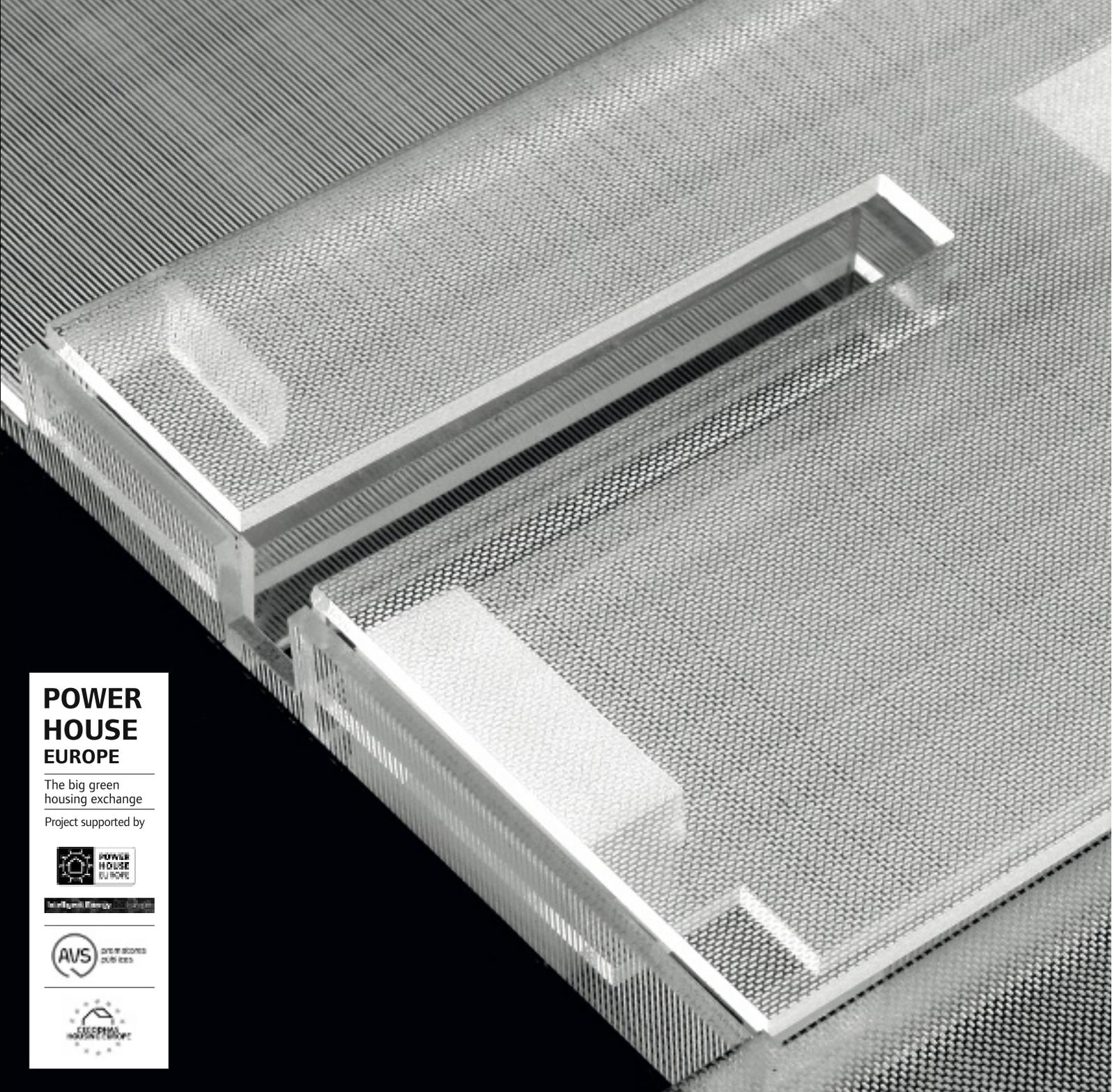
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CECODHAS is the European Committee for social and cooperatives housing, a network of national and regional social housing federations gathering 4.500 public, voluntary housing organisations and 28.000 cooperatives housing. Together the 45 members in 19 EU members States manage 25 million dwellings. **CECODHAS** members work together for a Europe that provides access to decent and affordable housing for all in communities which are socially, economically and environmentally sustainable and where all are enabled to reach their full potential, The European Union should in the future:

- Invest in social innovation; local social capital and social infrastructure by promoting all forms of enterprises and local initiatives
- Lead the green industrial revolution by promoting energy efficiency and renewable energy in housing
- Commit to ensuring all citizens have access to a decent and affordable home and a life in dignity by actively promoting policies to implement it.

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Communities. The European Commission is not responsible for any use that may be made of the information contained therein.



POWER HOUSE EUROPE

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