

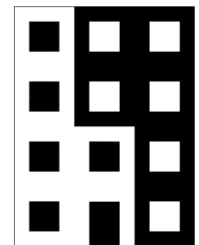
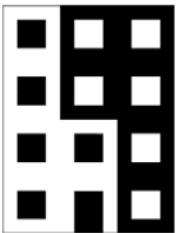


# **Social & Cooperative Housing fighting Climate Change**

**Carbon offset revenue for retrofitting**

**Brian Emmott**

**Member of UNECE  
Real Estate Market Advisory Group  
(REM)**





# Social & Cooperative Housing fighting Climate Change

*Quotes from UNEP: The Kyoto Protocol, The Clean Development Mechanism,  
and The Building & Construction Sector, 2008*

“Buildings are responsible for more than one third of total energy use and associated greenhouse gas emissions in society, both in developed and developing countries”.

“Despite the obvious need and opportunities for reducing energy consumption in buildings, the potential remains largely untapped in most Countries”.

“Out of more than 3,000 Clean Development Mechanism (CDM) projects in the pipeline (as of May 2008) only six seek to reduce energy demand in Buildings”

“As opposed to many other sectors, the buildings sector does not present a few big emission reduction options, but requires many small interventions in a very large number of buildings”.





# Social & Cooperative Housing fighting Climate Change

## ONE SOLUTION USING STRUCTURED PANELS





# **Social & Cooperative Housing fighting Climate Change**

**Commissioned research by Ove Arup & Partners**

## **Findings – UK (Thames Gateway)**

The overall GHG saving obtained from the Structured Panel house in comparison with the traditional house is 3.5 tonnes CO<sub>2</sub> representing a 34% saving on the traditional build.

## **Findings – Lithuania (Vilnius)**

The overall GHG saving obtained from the Structured Panel school in comparison with the traditional school is 5.4 tonnes CO<sub>2</sub> representing a 40% saving on the traditional build.

This only represents savings in manufacture and construction and does not include ongoing and sustainable GHG savings which would be considerable and also attract certificates





# Social & Cooperative Housing fighting Climate Change

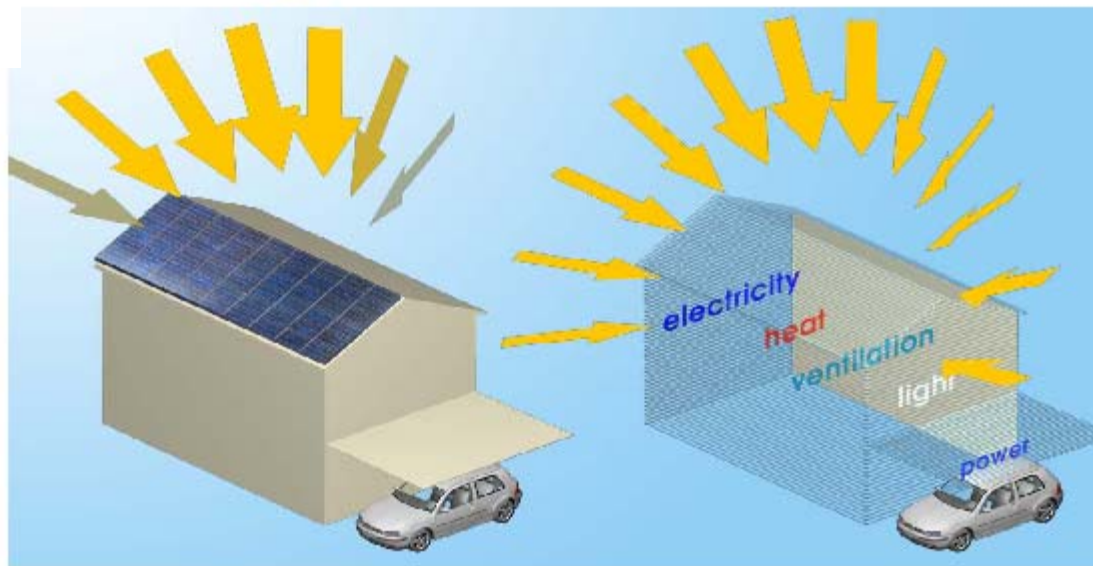
## EXAMPLE OF A COUNTRY UTILISING ITS CARBON ALLOWANCES CZECH REPUBLIC

- March 2009 Japan signed deal to buy 40 million tonnes of unused carbon permits  
– estimated value Euros 350 million
- Under Kyoto Protocol the Czech Republic committed to reduce emissions by 8% by 2012  
- already achieved 24% resulting in 140 million surplus units of carbon credits
- Will retain 40 million units for Czech industry
- Money will be used to boost the energy efficiency in Czech households and support all types of heat production from renewable sources
- Expects to create or save 30,000 jobs whilst green measures expected to affect 200,000 households



# Social & Cooperative Housing fighting Climate Change

## Energy: The EmpowerHouse



Unlike conventional solar panels (*left*) which typically use only the south facing roof surface, SolarBrane can generate PV electricity from any face of the building that sees the sun

The captured energy sustainably provides the 'EmpowerHouse' (*right*) with electricity, heat for hot water and space heating together with energy saving through daylighting, ventilation and shading



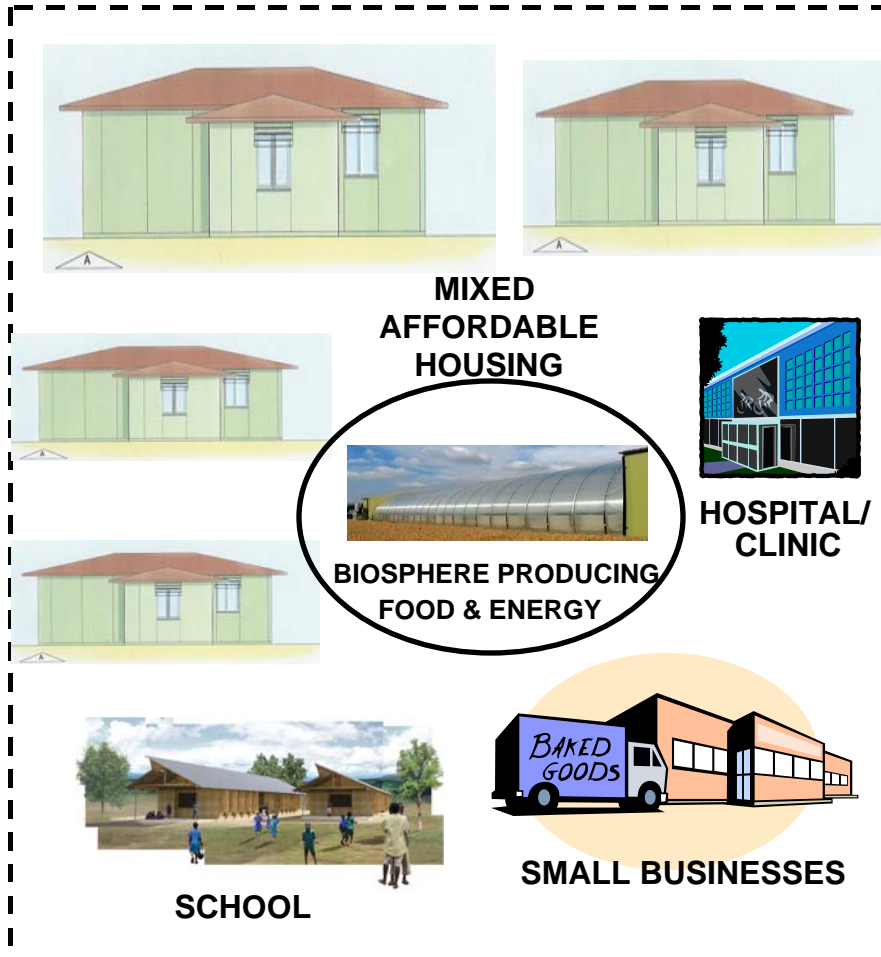


# Social & Cooperative Housing fighting Climate Change

## UNITED NATION SUSTAINABLE COMMUNITY PROJECT



**STRUCTURED  
PANEL FACTORY**



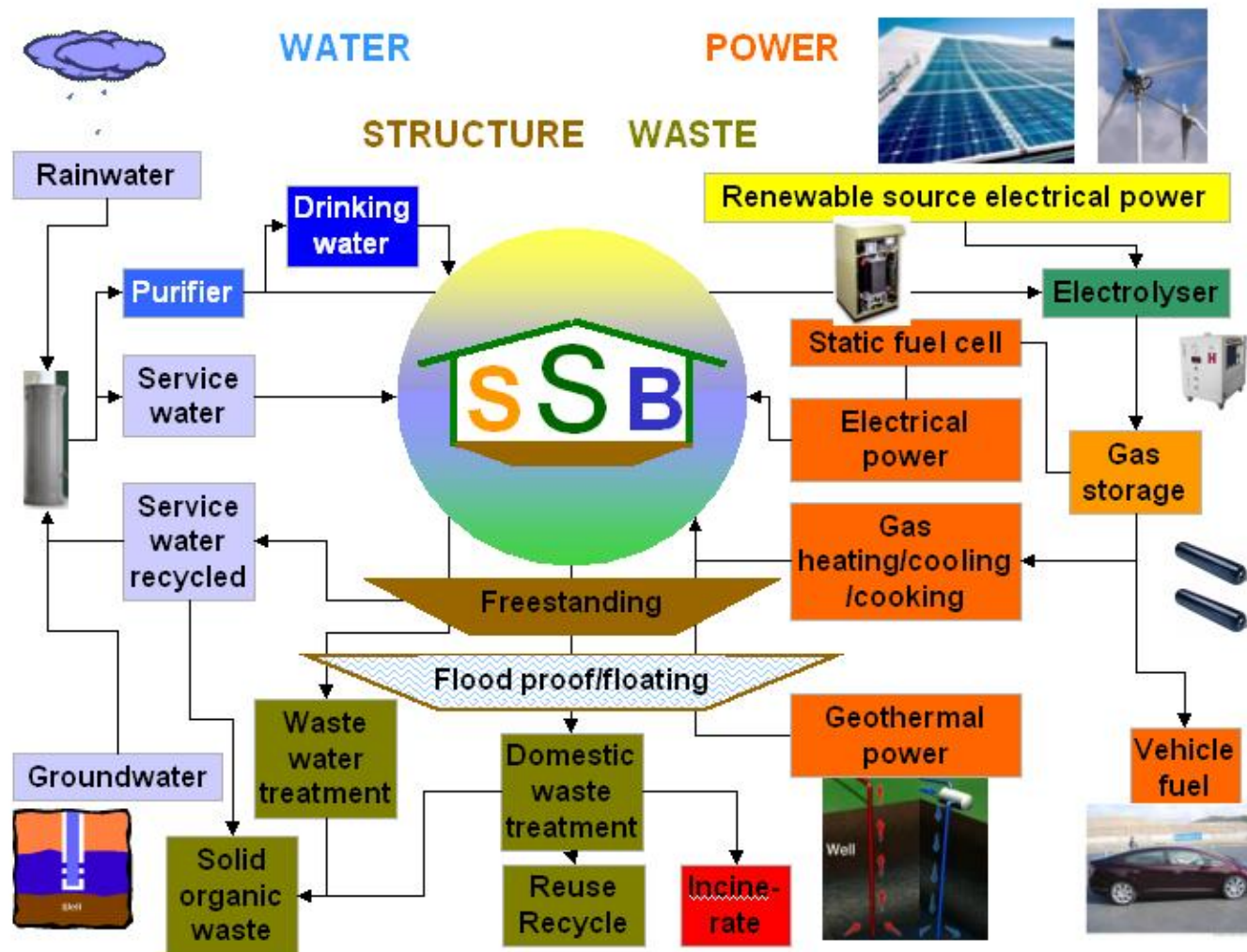
**FINANCIAL  
INSTITUTION -  
MICRO  
MORTGAGES**





# Social & Cooperative Housing fighting Climate Change

## SOME OTHER TECHNOLOGIES AVAILABLE



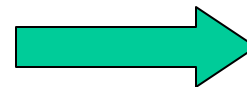
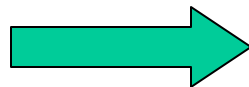




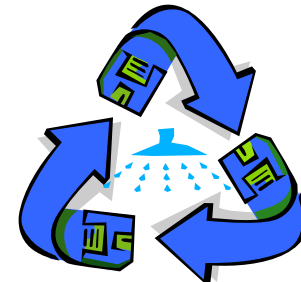
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## REQUIRED INTEGRATION – MACRO TO MICRO

### MACRO



### MICRO





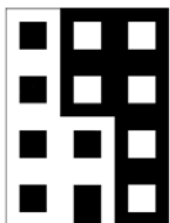
**UNITED NATIONS**  
**ECONOMIC COMMISSION FOR**  
**EUROPE**



**UNECE**

**First Workshop on Energy Efficiency in Housing**

**Sofia, Bulgaria, 21-22 April 2009**



**Facing the financial crisis: Rethinking real estate markets:**

**Sound rules towards social and economic benefits**

**Rome 3-4 June 2009**



**Climate Neutral Cities**

**Geneva 23 September 2009**



**Second Workshop on Energy Efficiency in Housing**

**Vienna, 23 -25 November 2009.**