



HABITAT OPTIMISÉ, MAÎTRISE DE L'ÉNERGIE & SERVICES



## *HOMES pilot sites Experimentations*

With 5 HOMES cooperators



## 5 pilot sites



Age:  
1890, 1970,  
1990, 2007,  
New



Energies:  
Heat Pump,  
Gas,  
All electric




Size:  
between  
500 and 3000 m<sup>2</sup>



Weather:  
Mediterranean  
Oceanic  
Continental  
Mountain





Capteur CO2/HR/T

Capteur mouvement et lumière

**400 sensors**  
**More than 22 M**  
**measures per year**

# Objective: evaluate the effective energetic performance

## calculations

### Evaluation énergétique STANDARD

#### Calculs réglementaires & label

- > Besoins
- > Usages conventionnels
- > Climats conventionnels
- > Bâtiment & équipements types

## simulation

### Evaluation énergétique PREVISIONELLE

#### Simulations prévisionnelles «affinées»

- > Besoins
- > Usages prévisionnels
- > Climats prévisionnels
- > Bâtiment & équipements types

## measure

### Evaluation énergétique MESUREE

#### Mesures dans la «vraie vie»

- > Consommations mesurées
- > Usages réels
- > Climats réels
- > Bâtiment & équipements réels
- > Prise en compte des défauts de réalisations, de réglages, de fonctionnement et du comportement réel des occupants

# Measurement plan of the HOMES pilot sites

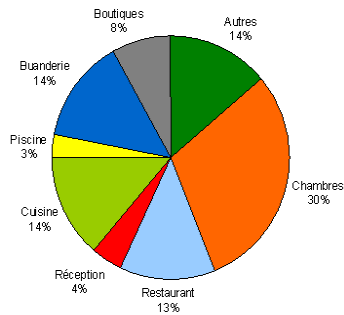


At the building level

How is the energy distributed?

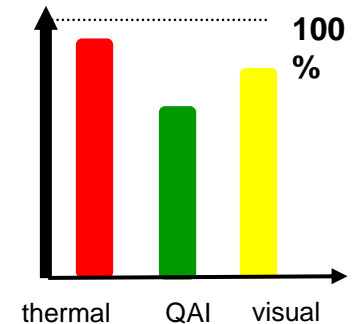
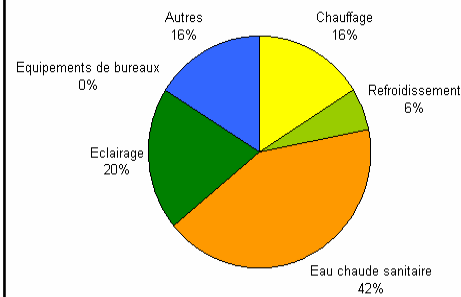
- Electricity
- Hot water for heating
- Hot water
- Air

Where energy is going to?  
In which room?



For each room

For what energy is used? For each service?  
For each comfort? When?



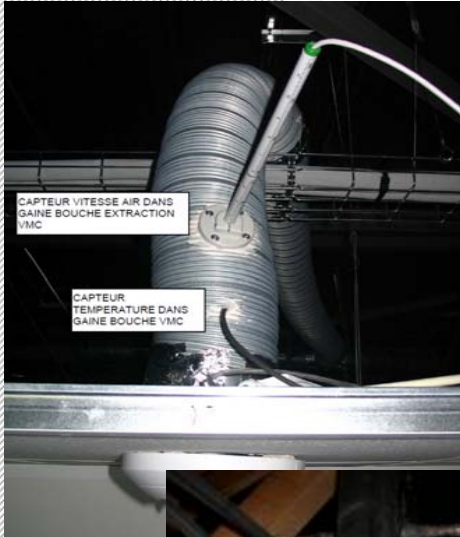
## How pilot sites had been equipped?



- Selection of 5 cooperators (electrical contactors)
- Definition of the measurement plan for each site
- Identification of different equipment (available on the market)
- Implementation, commissioning
- Analyse for each step

# Sensor implementation

## Energies

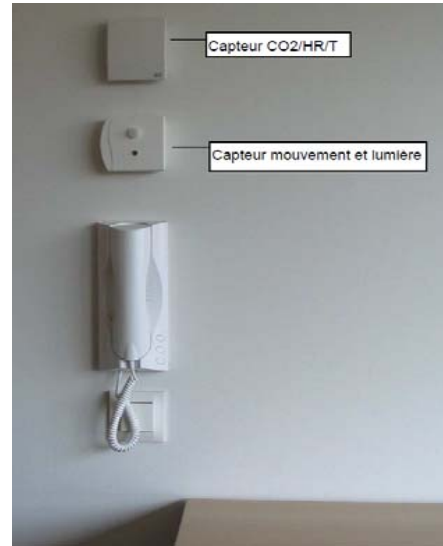


Electricity



Water

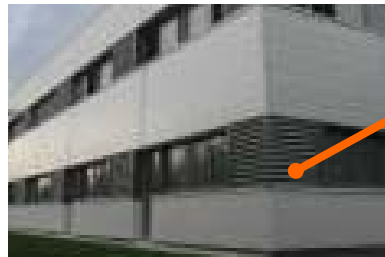
## Comfort & occupation



## Weather

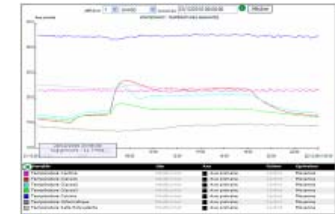


## Acquisition and data concentration system implementation



Data acquisition  
providing by  
sensors by a  
concentrator

GSM network



Platform of data  
centralisation

### Centralised data used for:

- > Designing Interfaces
- > Simulating pilots



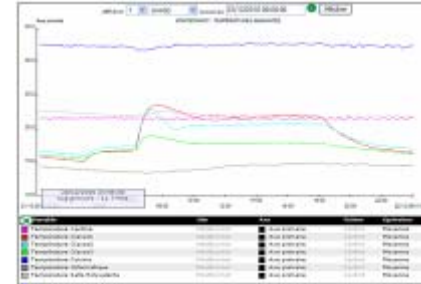
## Next steps

*ented in this document are copyright protected and belong to the members of the the agreements that are binding these members.*

# Simulation of a real site



Discussion with the occupant



Measure



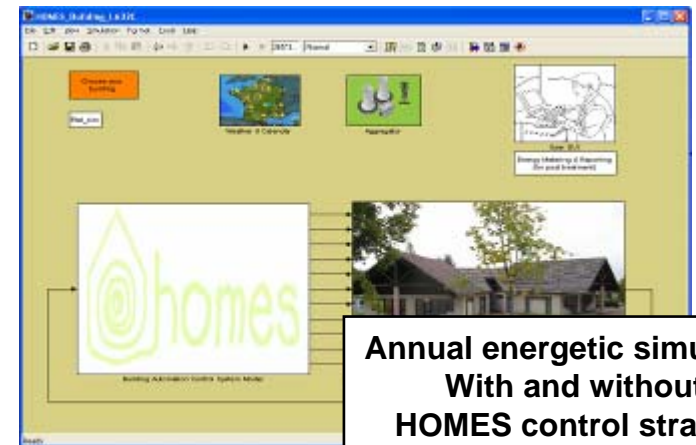
Expertise



Energetic Audit



Building model



Annual energetic simulation With and without HOMES control strategy

## Design of Interfaces

→ Use of real data providing by pilot sites :

- Harvested in real time
- Automatic analyse & layout

→ 3 targets :

- Occupants: information about consumption of their place of living  
Manager: a tool for identifying waste  
Owner: a tool to position the building according to standards