



CREST project

living lab Case Study

Temple Sutton Primary School

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Cambridgeshire
County Council



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Aim of that document

This document will allow the partners to understand the way each living lab works and through it, the partners will be able to run the living labs in a common way.

Audience: All the living lab participants.



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1. Building and features

1.1 Description

Temple Sutton primary school is an old hospital which has been transformed into a school during the forties.

The living lab is settled in 3 different classrooms:

- The first one is an old room without any eco-feature,
- The second one has been totally refurbished and retrofitted in 2008.
- The last one is a brand new room built in 2008.

Community Building -- Bâtiment communautaire	Room 1	Room 2	Room 3
Airtight construction -- Étanchéité à l'air	✓	✓	
Cavity wall insulation -- Isolation murs creux	✓	✓	
Condensing boiler -- Chaudière à condensation			
Draft Proofing -- Test étanchéité à l'air			
Electric car charging -- Chargeur voiture électrique			
Food growing -- Production alimentaire			
Flu gas Heat Recovery -- Récupération des gaz			
Green Roof -- Toit végétalisé			
Grey water recycling -- recyclage eaux usées			
Ground floor insulation -- isolation par le sol			
Heat pump -- pompe à chaleur			
Heating controls -- Thermostat	✓	✓	
Double or triple glazing -- Double ou triple vitrage	✓	✓	
Lifestyle changes -- Changement des usages	✓	✓	✓
Low energy appliances -- Appareils basse consommation	✓	✓	✓
Low energy lighting -- Eclairage basse consommation	✓	✓	
Loft insulation (270mm+) -- Isolation des combles	✓	✓	
Low water goods -- Réducteur de débit d'eau			
MVHR -- VMC	✓	✓	

Natural materials -- Matériaux naturels			
Passive solar -- Solaire passif			
Rainwater harvesting -- Récupérateur eau de pluie			
Solar PV -- Panneaux solaires			
Solar thermal -- Solaire thermique			
SWI external -- VMC extérieure			
SWI internal -- VMC intérieure			
Underfloor heating -- Chauffage sol			
Woodburning stove -- Poêle à bois			

1.2 Types of sensors

Capteur de température / humidité <i>Temperature, humidity sensors</i>	5
détection de mouvement occupancy sensors	4
Capteur de luminosité Illuminance sensors	5
indicateur d'ouverture/fermetures des fenêtres/portes <i>open/lock door or window sensors</i>	6
Consommation prises Consumption plugs	10
Coordinateur + passerelle <i>coordinator + gateway</i>	1
PC	1
capteur t/h extérieur <i>outside humidity/temperature sensor</i>	3

1.3 Plan and rooms equipment - users

The following rooms are monitored and are occupied by:

- Classroom 2LS : Mrs Lucy Springall, year 2 teacher.
- Classroom 1B: Mrs Erica Bromiley, year 1 teacher.
- Classroom FSJ: Mrs Sally Jordan, EYFS teacher.

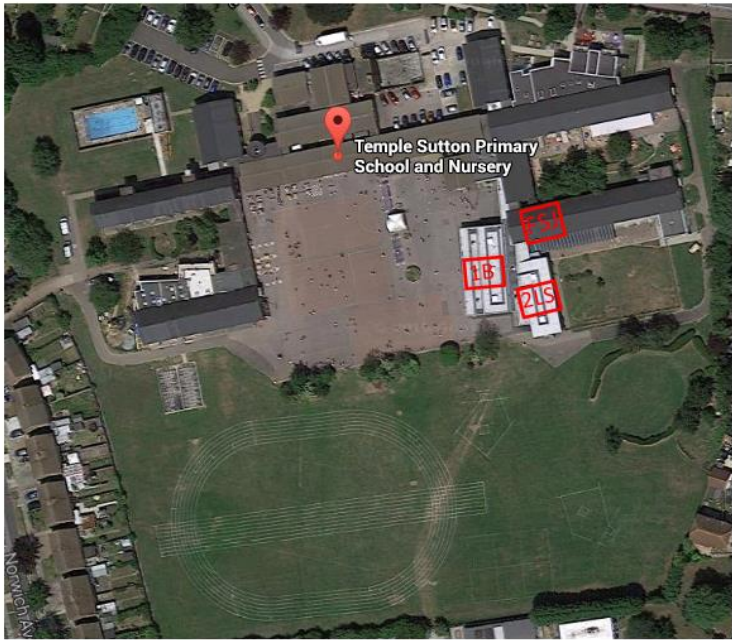


Figure 1: Satellite view of Temple Sutton Primary School and the 3 classrooms equipped with sensors

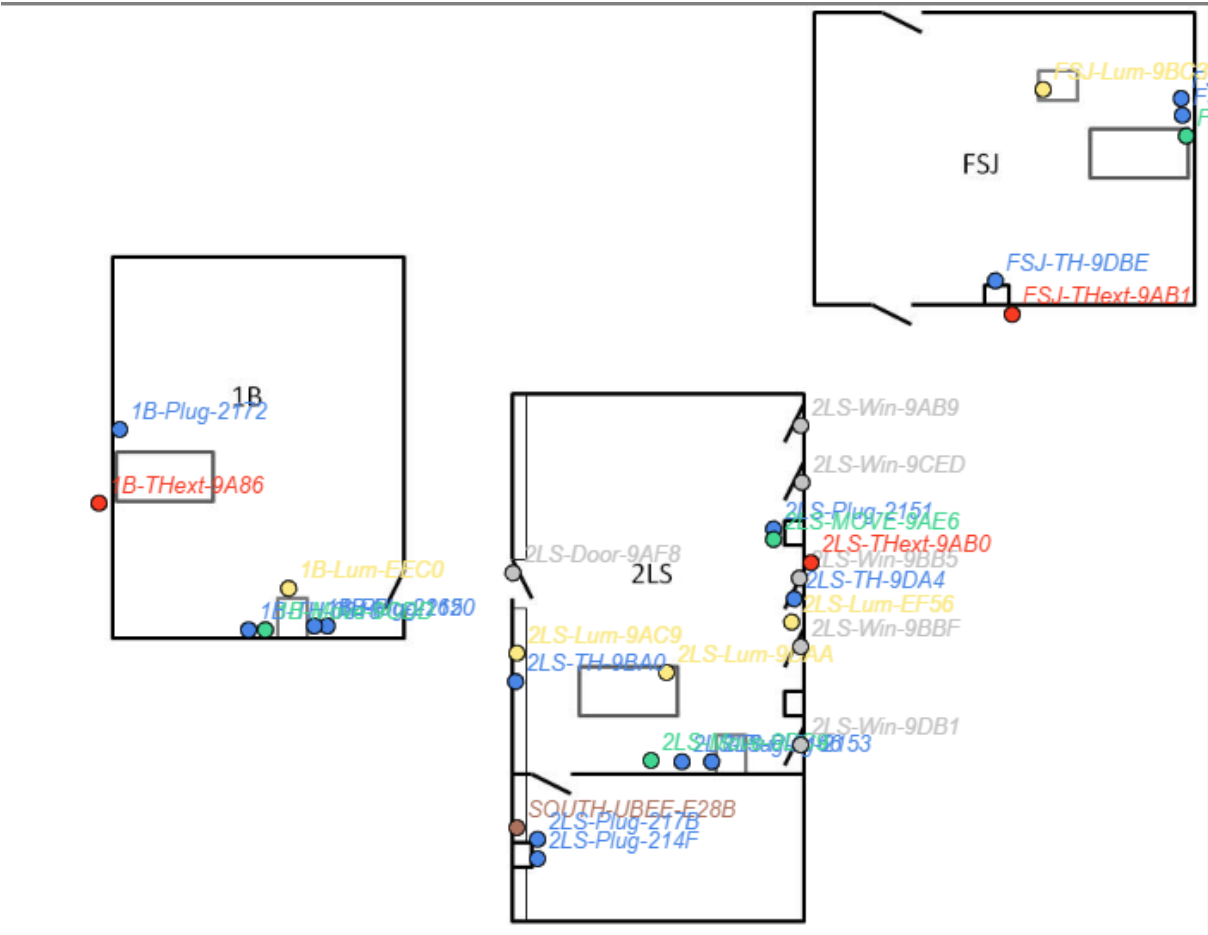


Figure 2: 3 classrooms monitored.

2 Contribution

Original responsible group / structure in charge : Southend On Sea Borough Council

2.1 Aims

The living lab in Temple Sutton Primary Schools aims to monitor and understand the energy consumption and usage in different types of classrooms within the same school. This living lab will allow the school to have a better understanding on the effect a refurbished or a brand new insulated classroom can have on energy waste compared to an old one.

Different types of event could be proposed to the pupils to make them understand the importance of energy savings. These data can even be reused for other Working package in CREST like the CREST LESS CO2 schools.

2.2 The living lab steps

- When did you start this living lab project? **March 2014**
- When the sensors have been settled in the different rooms? **8th and 9th of September 2014**
- Depuis combien de temps avez-vous créé votre groupe énergie? **September 2014**

2.3 People involved

Southend On Sea Borough Council: 3 persons???

- 1 Project manager
- 1 Project coordinator
- 1 Project coordinator-translator

Temple Sutton Primary School:

- 3 teachers
- 1 IT staff member

2.4 Groups characteristics

Southend Borough Council

- *Characteristics:*

Age range: 20-30 – 2 men

Age range: 30-45 – 1 man

Temple Sutton Primary School

- *Characteristics:*

Age range: 30-45 – 1 woman/1 man

Age range: 45-60 – 2 women



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3 Governance

3.1 Steering Committee

- Etudes et chantiers : 1 project manager
- SCIC ENR : 2 project coordinators
- Southend : 1 project manager, 1 project coordinator
- CESI : 1 technician

The steering committee will deal with the following points: Living lab steps, product tests and experimentation, venue specifications where the experiments will be realised, Technology and information to communicate, actions in the different living labs, sharing experience and feedbacks, building a common protocol...

Meeting schedule: 2 meetings per month.

3.2 Monitoring committee

Composed by the "resource-energy persons", it will follow the living lab on site.

Meeting schedule : 1 meeting per month

4 Material and Methods

4.1 The devices website

This website aims to show the data recorded and figures. The event runners will be able to use it to settle their experiments or their presentations. For example, electric consumption of a laptop over several days if whether it's turned off or not.



We can see the Laptop has been switched off between 17h42 and 23h42.

The website is available following this URL: <https://85.12.80.62/CREST/home>

The user guide is: **CREST - Devices site - Guide utilisateur – v1.0.docx**.

4.2 Occasional needs of data extraction

If the website does not answer the user's needs, the CESI will be available. The CESI will extract the data in an excel format in order to give an easy to use content for the users.

To go a bit further in living lab understanding, read the following file: **CREST - Methodologie Living Lab.docx**.

5 Design / Achievements

5.1 Sensors website

A first version of the website has been settle on the 8th of September while the sensors were installed in Southend.

6 Innovations / Impacts

Data extracted from the living lab are often extracted and used during workshops helping raising awareness on energy usage and savings, specifically during CREST LESS CO2 workshops in UK and France.

7 Contacts

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