

Managing Innovations *from Universities into Markets*

Studio iSPACE - the4bees project

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20.04.2017



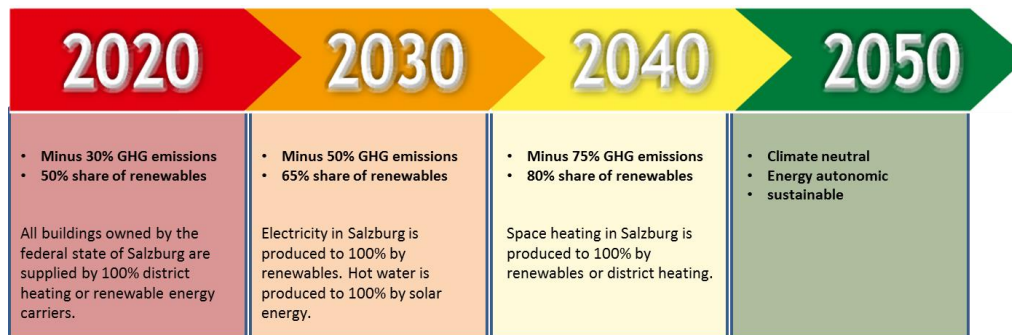
Research Studios Austria
Forschungsgesellschaft

Goal?

Interreg
Alpine Space



- master-plan for climate + energy 2020
 - reduction of 30% of greenhouse gas emissions
 - share of renewable energies at total energy consumption of 50%



- Raising „energy consumption awareness“ using IT tools & storytelling (m)ap(p)s



Austria CoCreation Labs Who?

- RSA iSPACE
- School of education, University of Salzburg
- Teacher IT: Dr. Anton Hofmann – HTL Salzburg
- Teacher physics: Angela Lindner – HTL Salzburg
- Teacher physics: Roman Gloning – BORG Oberndorf
- Teacher Geography: Michaela Fally-Lindner - BORG Oberndorf
- Students of 2 classes of HTL Salzburg, 1 class BORG Salzburg



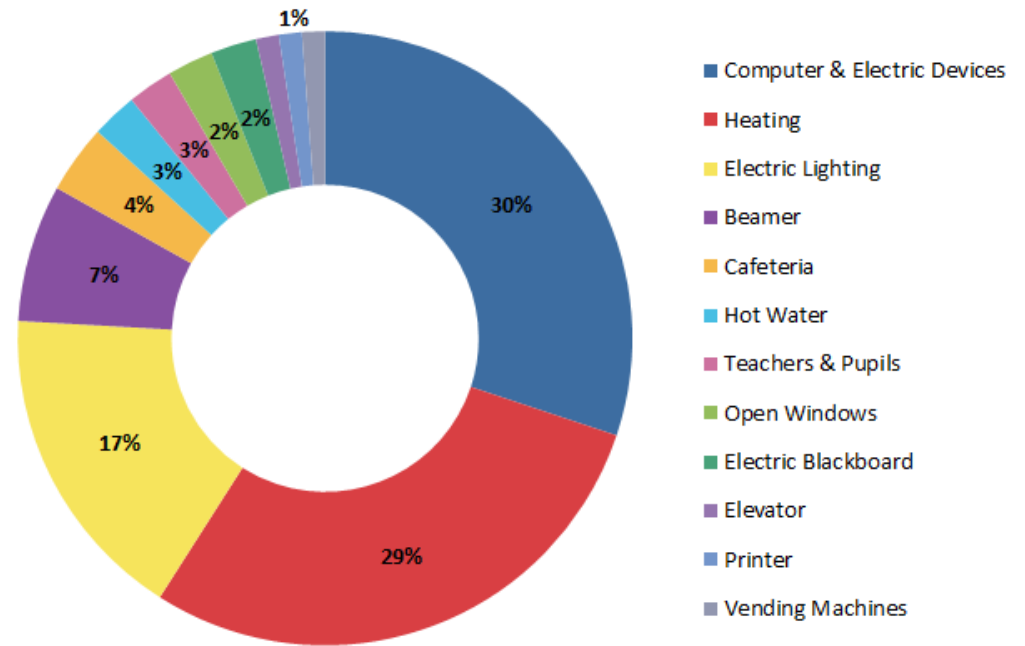
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energy is consumed by people rather than by buildings

Energy consumption in schools: What are the biggest consumers?

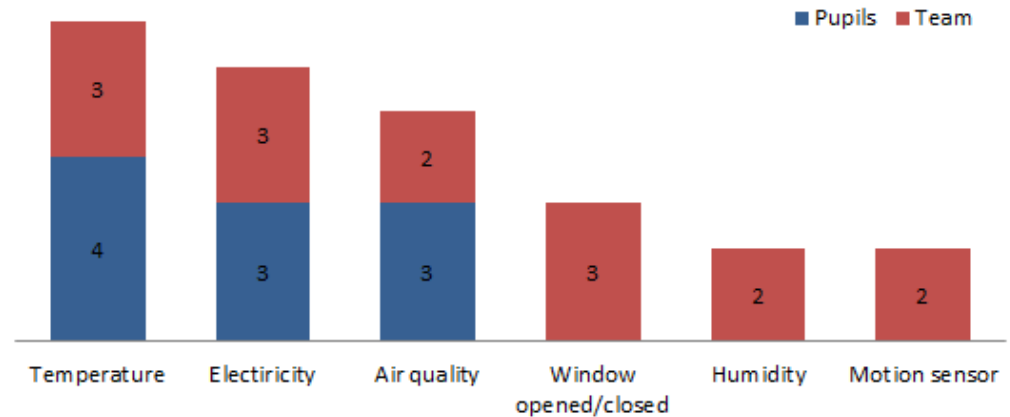
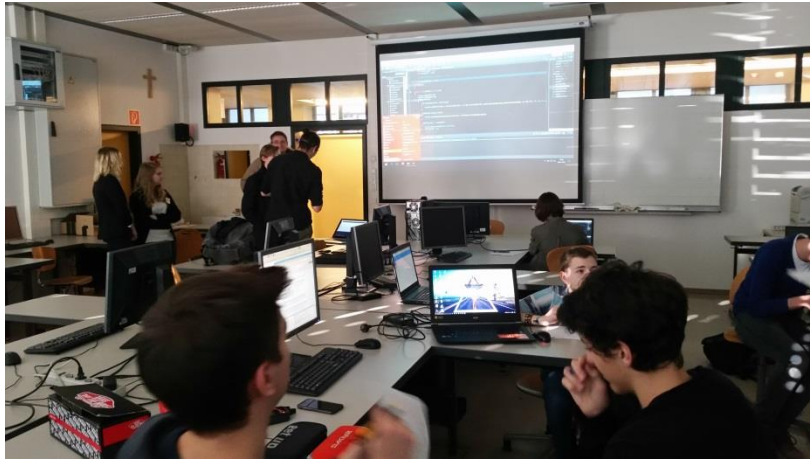


Unconference @ GIS-Day Salzburg 2016-11-16



[Storytelling Introduction BORG Oberndorf](#) ; [Storytelling THE4BEES](#)

iSPACE :: the4bees - HTL Salzburg – January 2017



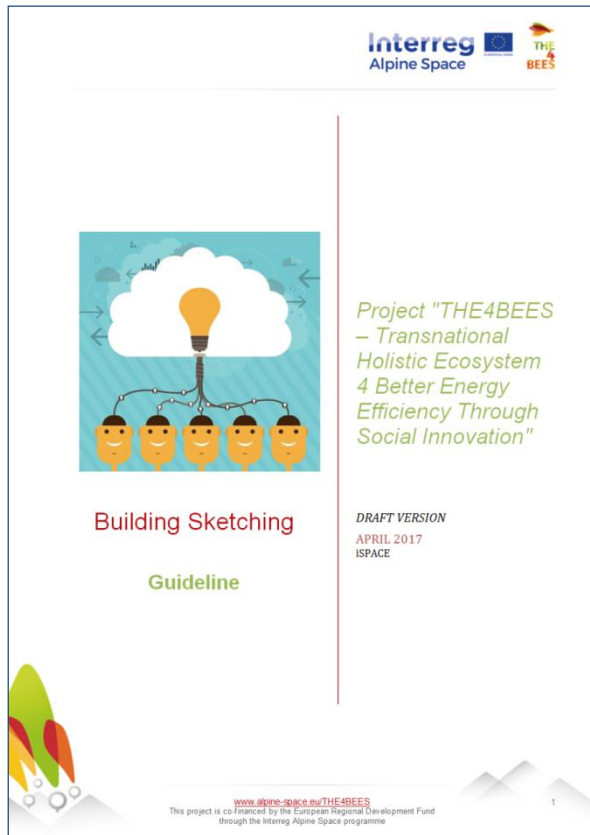
Kind of data that should be measured from the sensors in classrooms (n = 7)

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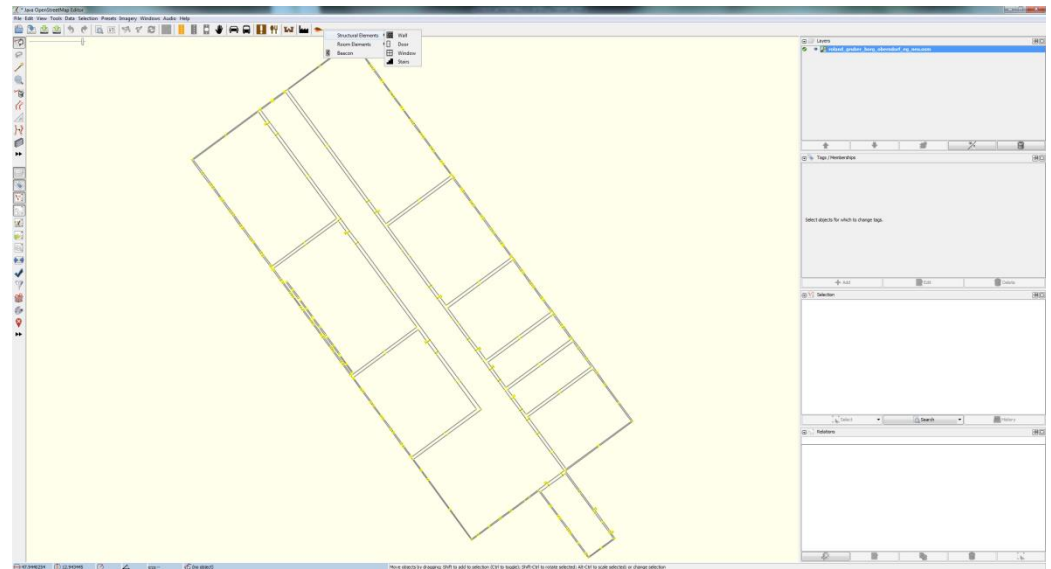
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Workshop: JOSM model of pupils



Pupils create their own school building in JOSM using a predefined guideline during the first Workshop in BORG Oberndorf.

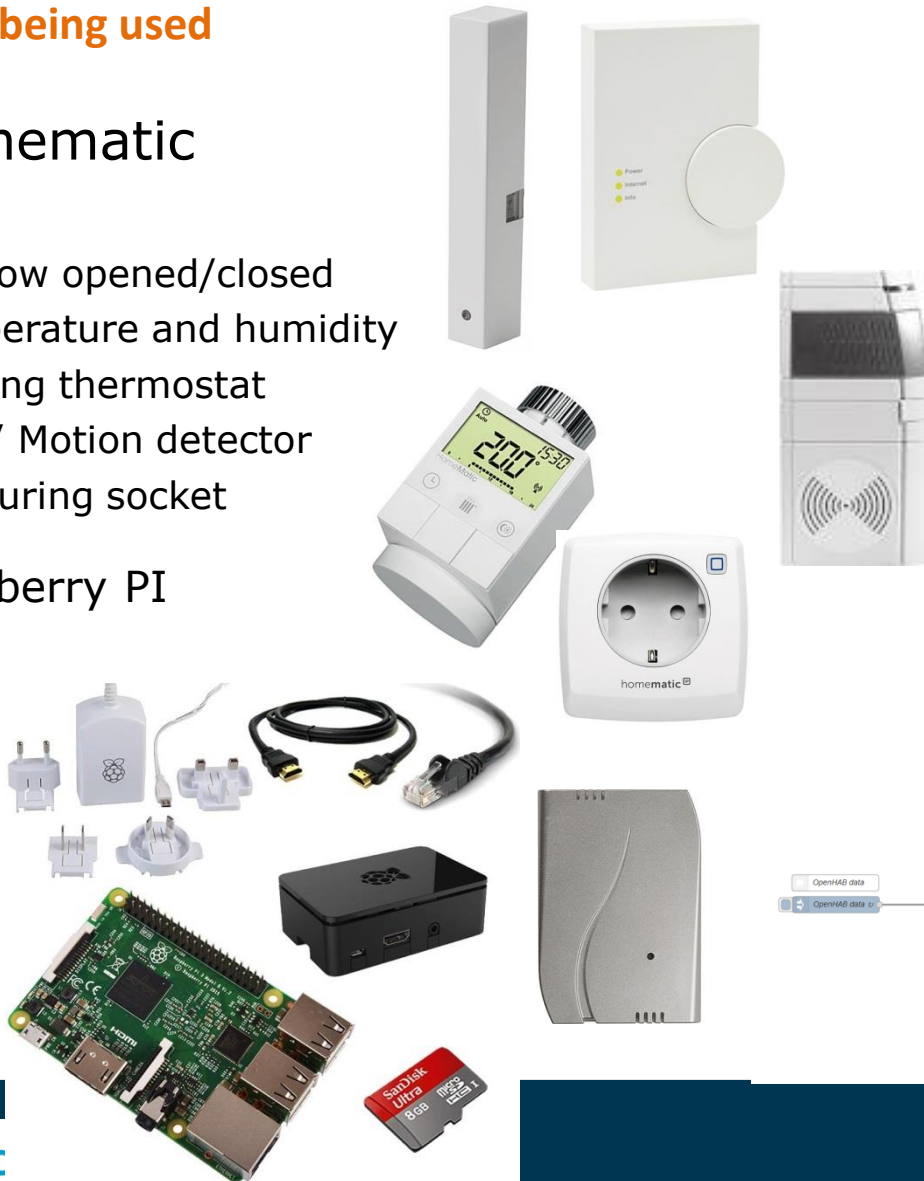
This building model is used for further processing to visualize it in a 3D storytelling map



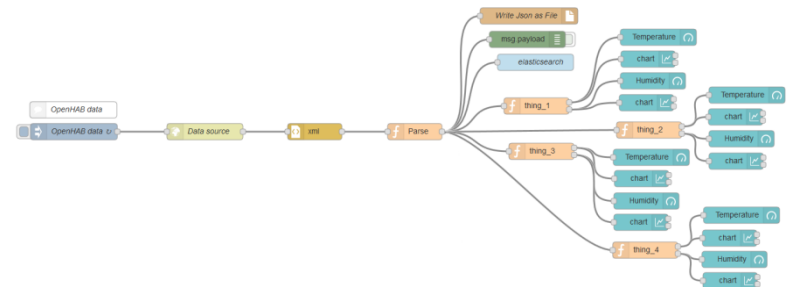
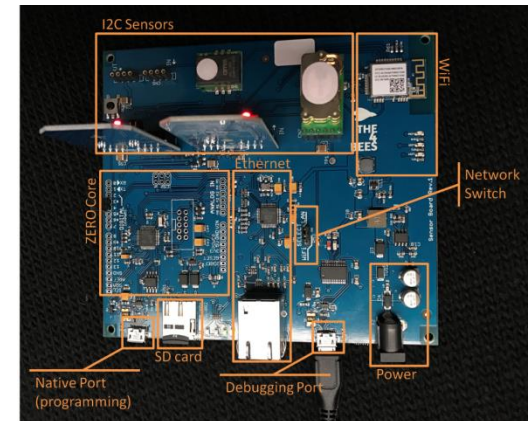
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Sensors being used

- Homematic
 - › Base
 - › Window opened/closed
 - › Temperature and humidity
 - › Heating thermostat
 - › LUX / Motion detector
 - › Measuring socket
- Raspberry PI

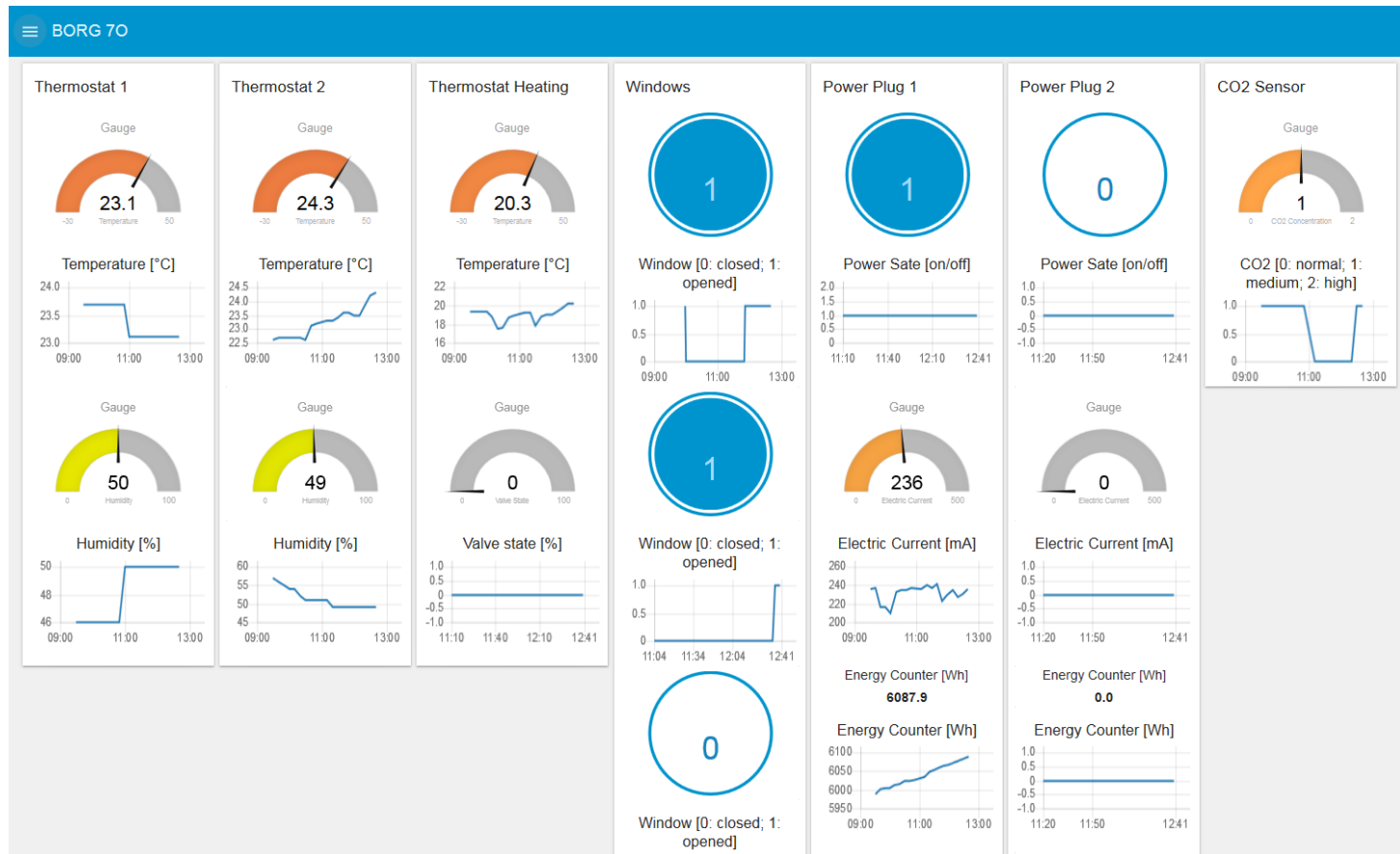


- the4bees Haladin
 - › Temperature and humidity
 - › Lux
 - › CO2



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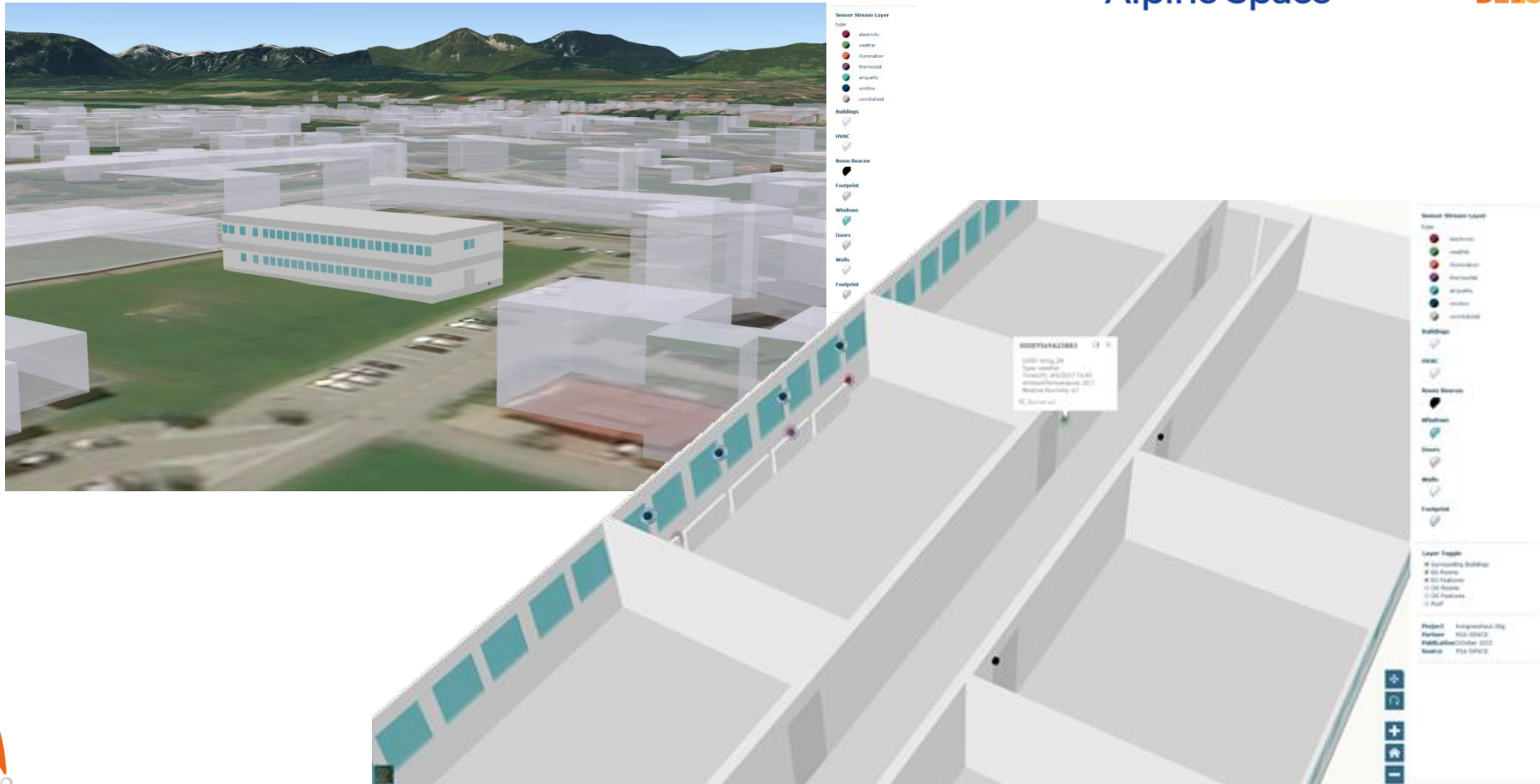
Dashboard



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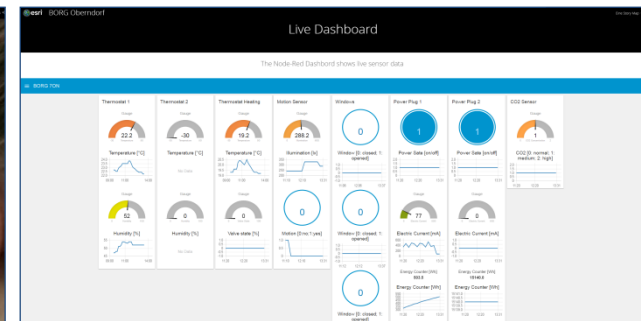
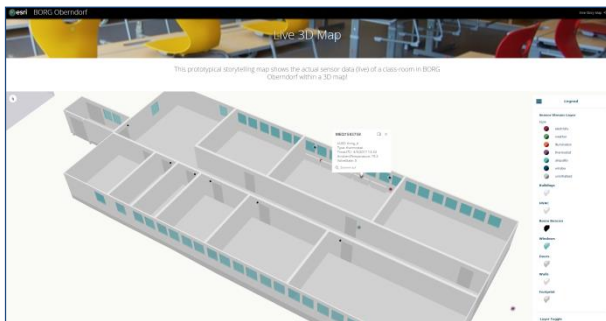
3D visualization: BORG Oberndorf

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storytelling 3D map prototype



<http://ispace.maps.arcgis.com/apps/Cascade/index.html?appid=18043588376242cb94a4ec1470a81866>



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the4bees feedback app

