Monitoring data and supporting the energy behavior change in existing and new buildings

Online Seminar
01.10.2020
Stam is an engineering firm with a technology-first approach to problem solving. Sustained by a transversal set of skills, the company can support their clients through all stages of ambitious projects.
### WHO IS STAM

<table>
<thead>
<tr>
<th>Key statistic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>23</strong></td>
<td>Years in business</td>
</tr>
<tr>
<td><strong>500</strong></td>
<td>Projects Delivered</td>
</tr>
<tr>
<td><strong>40</strong></td>
<td>Engineers and Technicians</td>
</tr>
<tr>
<td><strong>35</strong></td>
<td>Average employees’ age</td>
</tr>
<tr>
<td><strong>60k</strong></td>
<td>Engineering hours/year</td>
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<tr>
<td><strong>2,5</strong></td>
<td>M€ 2018 Turnover</td>
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<tr>
<td><strong>4</strong></td>
<td>Industrial Patents</td>
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<tr>
<td><strong>4</strong></td>
<td>Operating Offices in Italy</td>
</tr>
</tbody>
</table>
WHO IS STAM

- Simulation of blast effects on vehicles and structures
- Risk assessment and cost benefit analysis of countermeasures
- Crowd modelling
- Toolbox for security resource planning

STAM

- Design of space mechanisms, power transmissions and hermetic sealing
- Technology Transfer from space to earth
- Technologies for active debris removal
- Design of MGSE for handling and testing space systems

- Insulating technologies
- HVAC control
- European energy mapping
- EE solutions database
- Building retrofitting collaborative platform
- Decision-support tool for smart-grid design
- BIM-based tool for TLC assets management
- Waste water treatment and microalgae goods

- FEM/FEA and numerical modelling
- Design of mechatronic devices
- Sorting solutions for CDW recycling
- Control systems based on data or physical model
- Biomedical solutions for rehabilitation
- LCA/LCCA for new products and processes
Innovative energy efficiency assessment methodology

H2020-EEB-03-2016
Building and district thermal retrofit and management solutions

Smart DHC-aware multi-scale retrofitting approach

POR-FESR – Sardegna 2017
"PROactive system for optimizing energy efficiency and COMFORT in buildings"

IoT systems for monitoring energy, internal comfort and harmful gases in buildings
Smart DHC-aware multi-scale retrofitting approach

Geo clustered building typology aware heating and cooling technology catalogue: create a Library of state-of-art technologies for heating and cooling that best suit for different geo-clustered building typologies.

- Best suit for different geo-clustered building typologies, addressing both technological and non-technological aspects.
- Classification will be based on multiple parameters, organized in homogeneous layers and sub-layers, with the identification of virtual trans-national areas where strong similarities are found in terms of climate, construction typologies, energy prices and regulations.
- This library will be structured to be easily imported in modelling and simulation environment.
Web-based platform for an educated access to organized technology information. Seamless integration with other software tools.
A innovative energy efficiency assessment methodology, which provides all the instruments for the evaluation of the buildings energy demand, has been developed. It presents a coherent set of thermodynamic calculations, related to the energy use in space heating and cooling, heating and cooling system losses, heat recovery and the use of renewable energy sources and is linked with a machine learning tool.

Building energy balance

Global
intrinsic

Calculation of renewable share through Global and intrinsic efficiencies
COMFORT AND AIR QUALITY

- Humidity
- Air Speed
- Clothing Insulation
- Air Temperature
- Radiant Temperature
- Metabolic Rate

HUMAN COMFORT

- CO₂
- Formaldehyde
- Radon
- CO
- VOC
- Fine powders

AIR QUALITY
1. Temperature
2. Humidity
3. Atmospheric pressure
4. Air speed
5. CO₂
6. VOC
7. CO
8. Formaldehyde
9. Fine dust
1. Temperature
2. humidity
3. Air speed
4. 1/0 sensor
5. WIFI group
6. Vibration
CONSUMO
2.7 kW

Non ottimale
(la temperatura è troppo alta)

MIGLIORA IL COMFORT

Apri la finestra
Livelli di radon troppo alti

Spegni il condizionatore
Temperatura non ideale

STATISTICHE

MIGLIORA IL COMFORT

Apri la finestra
Livello di CO₂ troppo alto

Spegni il condizionatore
Temperatura non ideale

STATISTICHE
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<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Phone Number</th>
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<tbody>
<tr>
<td>GENOA</td>
<td>Piazza della Vittoria, 14/11, 16121 Genova</td>
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<tr>
<td>BARI</td>
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<td>+39 366 4895107</td>
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Thank you for your attention!

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