# BuildSys 2013 Call For Papers

## 5th ACM Workshop On Embedded Systems For Energy-Efficiency In Buildings

**November 13-14, 2013 – Rome, Italy | co-located with ACM SenSys 2013**

## Workshop Theme

The world is increasingly experiencing a strong need for energy consumption reduction and a need for efficient use of scarce natural resources. Official studies report that buildings account for the largest portion of the world's energy expenditure and have the fastest growth rate. Clearly, energy saving strategies that target energy use in buildings and surroundings can have a major impact worldwide, driving the current energy market toward self-sufficiency and self-sustainability. This calls for effective techniques and methods that enable accurate carbon foot printing, monitoring and control of appliance activity, energy auditing and management in buildings and surroundings and the generation of energy awareness.

Wireless sensor networks (WSNs) play a key role in enabling energy-saving systems in buildings and surrounding spaces by providing a reliable, cost-effective and extensible solution that can be placed in existing as well as new structures and can be controlled via the Internet. In fact, WSNs allow the monitoring of the energy consumption in near-real time and, as such, they are an essential tool in the control loop that will be used in future structures for the generation and usage of diverse types of energy. BuildSys is a venue for incubating new directions in this area.

## Topics of Interest

Successful papers will clearly demonstrate how much energy is reduced by the authors' contribution, either through real-world results or credible simulation and analysis of an energy problem. Many papers should consider the entire energy system, including any effects on occupant behaviors, production efficiency, peak load and smart grid architectures, sustainability, pollutants, and total energy usage.

We are particularly interested in contributions related to:

- Increase energy awareness and reduce consumption by leveraging on sensing systems, social networking, smart phones, novel visualization, and various forms of media to convey relevant information to users;
- Systems that can influence building occupant behavior towards a more parsimonious usage of electricity, gas, heating, water, etc.;
- Sensing and actuation of electrical loads in residential, commercial and industrial settings
- Novel wireless sensor networks and sensing applications that enhance building energy efficiency and meet occupant comfort;
- Control of alternative energy sources aiming at an increase of production efficacy;
- Use of distributed generation, renewable sources and energy storage in buildings;
- Model, simulate, optimize, and control heating, cooling, lighting, ventilation, water usage and other energy flows in buildings and surrounding spaces;
- Innovative approaches to building control using embedded devices and new architectures (e.g., agent-based systems);
- Novel techniques to reduce building energy consumption, electricity demand during utility peak periods, or energy costs;
- Create innovative tools to model and visualize energy expenditure and production (from, e.g., solar panels, wind turbines);
- Integrate sensor-based systems to improve grid operation and energy distribution (electricity, gas, water);
- Systems that integrate buildings with the emerging smart grid to provide demand response and ancillary services;
- Sensor systems for the identification of appliances in industrial, commercial and home environments, which can be used to measure or estimate the energy usage and to predict future demands;
- Emerging communication standards for the collection of data from smart meters and the control of HVAC systems.
- User studies, human factors, or user feedback in building energy management

## Submissions

We solicit the following types of original submissions: regular papers for oral presentation (8-pages); poster papers describing work-in-progress (2 pages). Paper reviewing is single-blind and submissions should list author names on the front page. **All accepted regular, poster and demo papers will be included in the workshop proceedings and the ACM digital library**.

## Important Dates

Paper/Poster submission: August 6, 2013 (**firm; no extensions)**
Notification: September 15, 2013
Camera Ready: October 7, 2013
Workshop and Demo Session: November 13-14, 2013

## Organizers

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