



# Smart and Sustainable Buildings

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# ITU-T Study Group 5

- ITU-T Study Group 5 (SG5) is responsible for studies on methodologies for evaluating ICT effects on climate change and publishing guidelines for using ICTs in an eco-friendly way.
- SG5 work encompasses globally agreed methodologies for measuring the carbon footprint of ICTs, to facilitate measurement of the impact of ICTs on emissions and support meaningful reporting and comparisons. ITU's common methodology will help establish the business case to go green and support informed consumer choices and climate-friendly business procurement.

# BOMA Canada

- Largest Trade Association for Commercial and Institutional Real Estate
- Over 3,000 members
- Own and manage over 200,000,000 m<sup>2</sup>
- Canadian Pension Funds rank as five of the top 30 global real estate investors and seven of the world's biggest international infrastructure investors

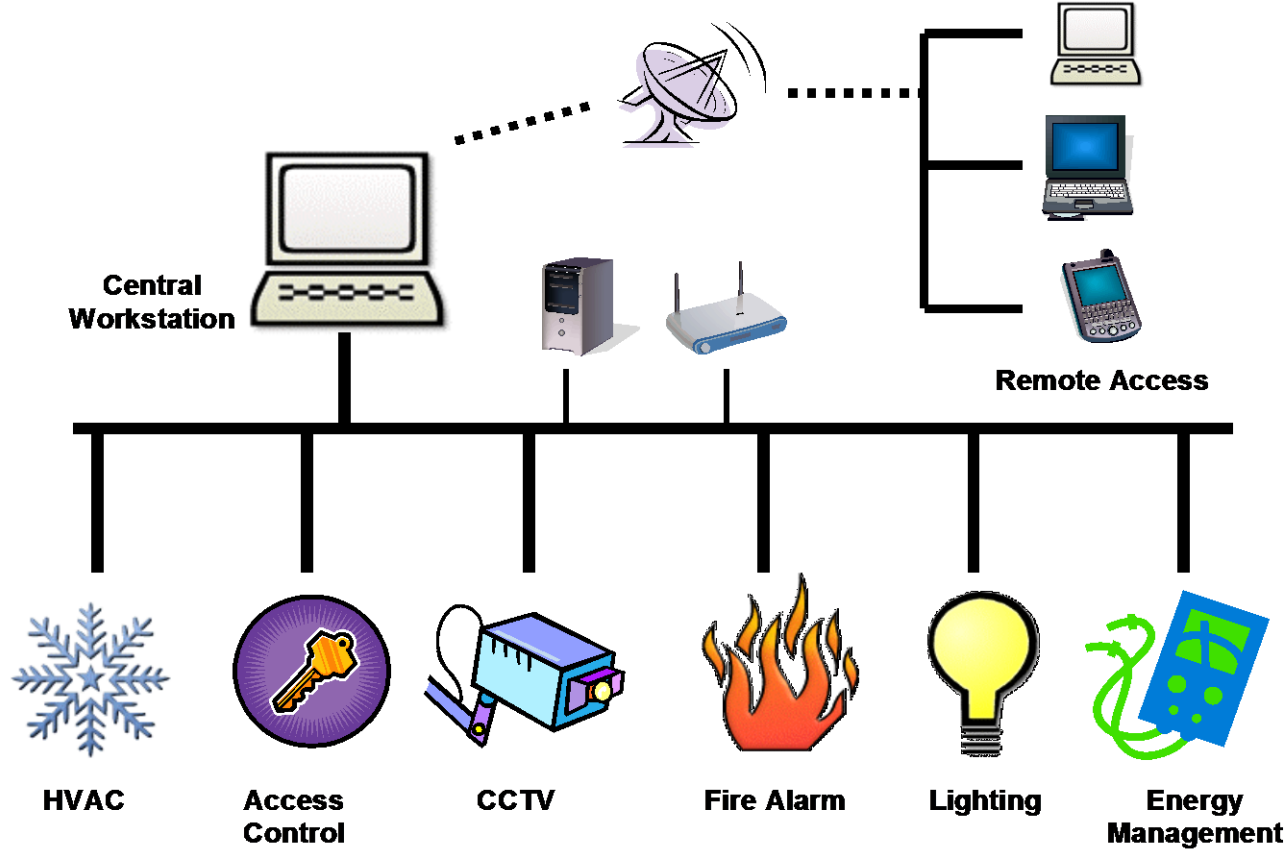
# Smart Building

A Smart Building is an intelligent space that will transform efficiency, comfort, and safety for people and assets.

## Connected Building Segments

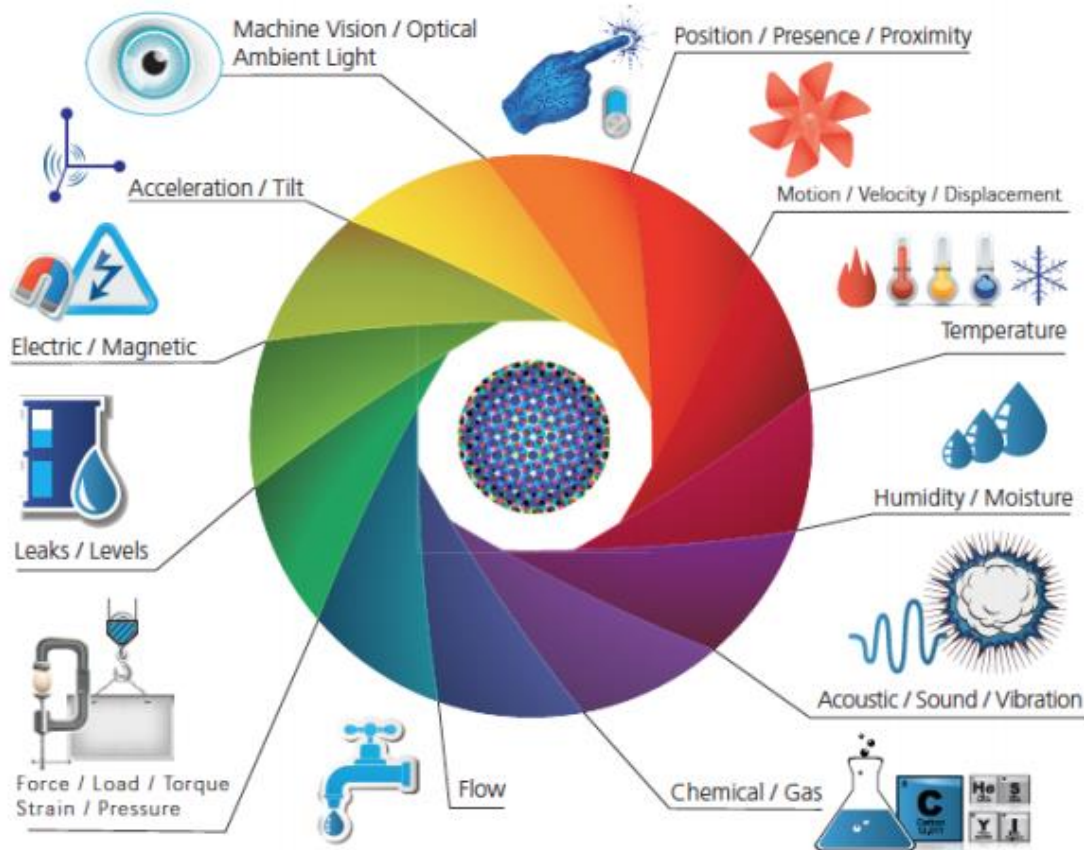


# Architecture of a Building Automation System (BAS)





# Sensors...Everywhere and in Everything - IoT



# Opportunity

Around three quarters of global greenhouse gas emissions come from cities, and the C40/ Arup Deadline2020 report shows that building energy use accounts for over half of total city emissions on average.

This means that decarbonising buildings in cities – by making them more efficient so they use less energy, and by cleaning up the energy that they do use – is one of the most fundamental things that we can do to avoid dangerous climate change

# Opportunity

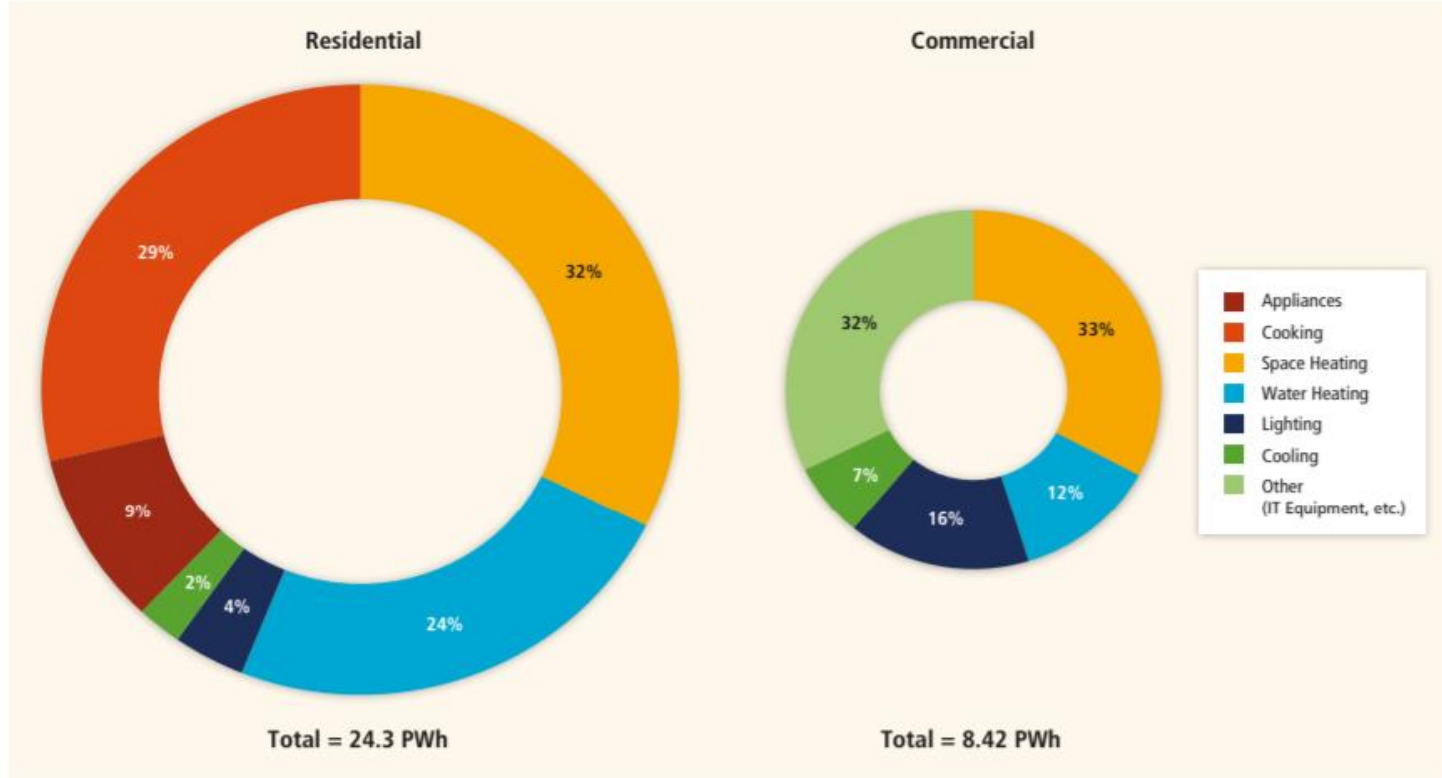
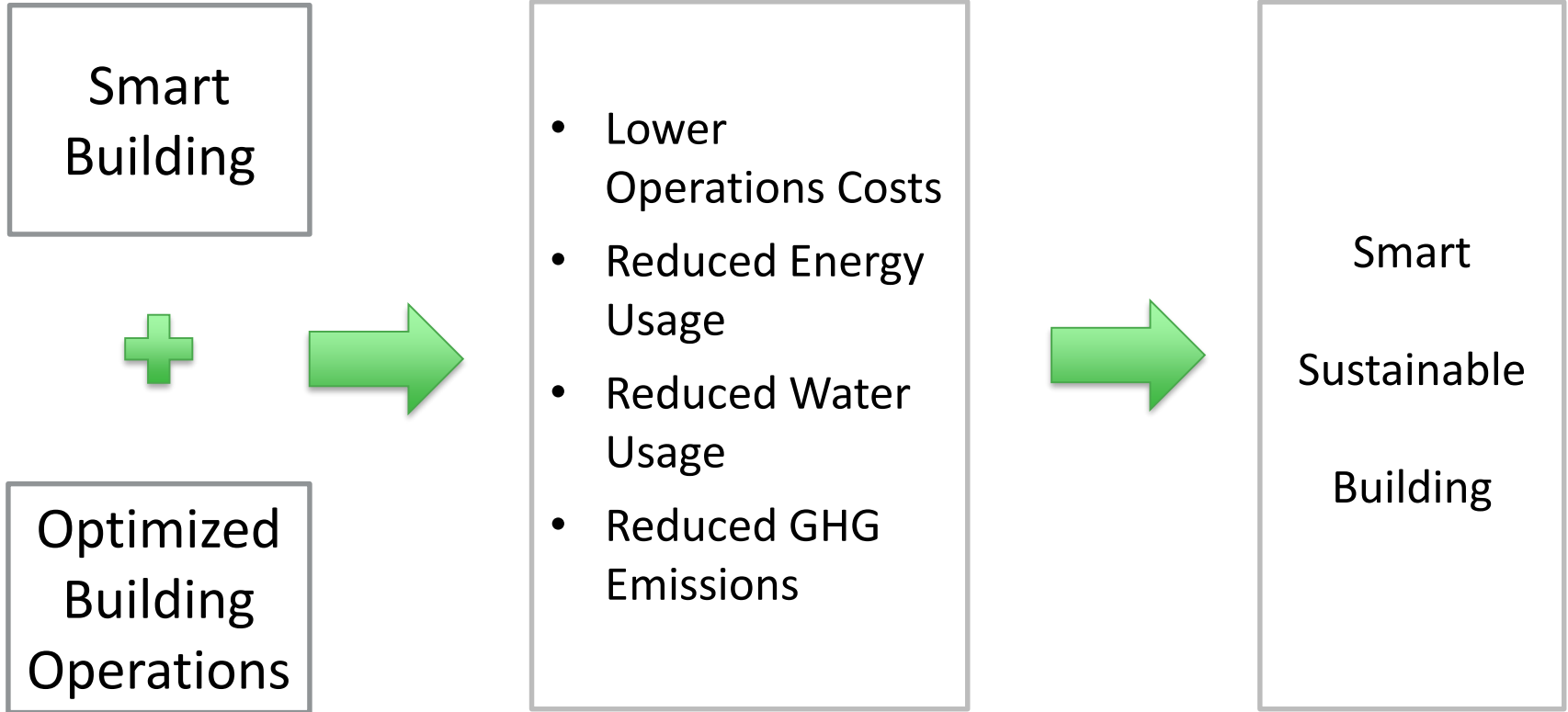


Figure 9.4 | World building final energy consumption by end-use in 2010. Source: IEA (2013).



# Opportunity



# Green Building Assessment Program

- Focused on improving the sustainability performance of buildings
- Reducing environmental impact through ICT and best management practices
- Method for measuring progress and success
- Framework is now a new work item for SG5

# Performance Improvement - Experience in Canada

Buildings assessing over 90%

**save on average \$480,000/ year** in energy costs compared to the average building

Buildings assessing between 80 - 90%

**consume 17% less energy** than the average building

Buildings assessing between 70 - 80%

**consume 15% less water** than the average building