Abstract  On average, buildings consume 30-40% of energy in most countries. As the potential for energy saving is quite large, building energy efficiency has become an important issue in the drive to produce more sustainable buildings.

Sustainable buildings are designed and constructed to high environmental standards in order to reduce energy requirements, minimize water consumption, use materials with low environmental impact or low embodied energy, reduce wastage, protect the natural environment and human health.

By using adapted thermal insulation (in envelope) and energy savings techniques (in building systems), up to 80% of a building’s total energy consumption can be saved. As energy costs rapidly increase, there must be a clear commitment to use renewable energy sources too and to apply energy management.

The chapter “Energy and Sustainability” looks at construction techniques, certification and assessment, energy consumption and thermal behaviour, passive bioclimatic conditions, envelope as energy factor, biomass system, eco-efficiency on façades, cogeneration, standards for green neighbourhoods, simulation and modelling of existing buildings.

Those contributions focus on the main issues while also providing a broad overview of this crucial topic.