

Some thoughts what brings end of this century to building sector, to life stile, inside and outside living conditions

Branislav TODORVIĆ, Belgrad, Serbia

Professor of University Belgrade,
Doctor Honoris Causa of Timisoara University,
Member of Russian Academy of Building and Architectural Sciences,
Member of Serbian Academy of technical Sciences,
ASHRAE life member, also the member of Hungarian scientific society,
Honorary editor of International Journal Energy&Buildings

Abstract:

This article presents various information of many official and unofficial thoughts of different authors, also of building and furniture producers, planers, UN statistics and IT engineers and their plans regarding the development of smart cities and direction where may the world go in coming future. English will be dominant language.

Key words: building sector, life stile, living conditions.

1. The smart city

The smart city makes use of automated technology to gather data, and then uses that data to regulate and control any number of municipal systems. These systems range from transportation to education, but also include complex networks of buildings, roads, bridges and electric grids. Making cities smarter means making them aware of the inputs that contribute to how these various systems operate, then using technology automatically make things more efficient.

The goal of a smart city is to cultivate a more sustainable environment and be sustainable city. One with less waste and inefficiency. This isn't limited to just non fossil fuel forms of energy production, either. Smart cities are making use of waste management facilities that can convert garbage, and even sewage into usable electrical energy. And the waste that cannot yet be converted into fuel is being better sorted into recyclables or in waste. For example, Barcelona is consistently known as leader city for various metrics used to analyze city intelligence. Despite being one of the oldest and most storied cities in the world, they have managed to implement city wide upgrades to their electrical grids, smart traffic and parking systems, even street lights that are properly timed and use low energy bulbs and solar power for operation. Such changes can be slow to adaptation due to the grand scale with which such transitions must happen on.

“Smart” doesn't necessarily point to the automated, artificial intelligence of these different systems, but can simply refer to the way in which planners, architects, and city officials approach any number of ubiquitous issues. Being smart about urban design and architecture means understanding economic growth, density and zoning,

and how the existing network of roads and grids can be better. It has almost everything to do with the people who live in and are moving to these cities, and what sort of cultural underpinning they represent. Those societal values are vital to determining the direction a city is heading, and how smart it ultimately becomes. In addition a smart city is a self-aware city, filled with self-aware people who are willing to take on the conscience that comes with being sustainable. Those people understand the impending environmental and social issues facing our future, and understand that if we do not start putting a plan in place to change how we live, things could get bad and they could get bad fast.

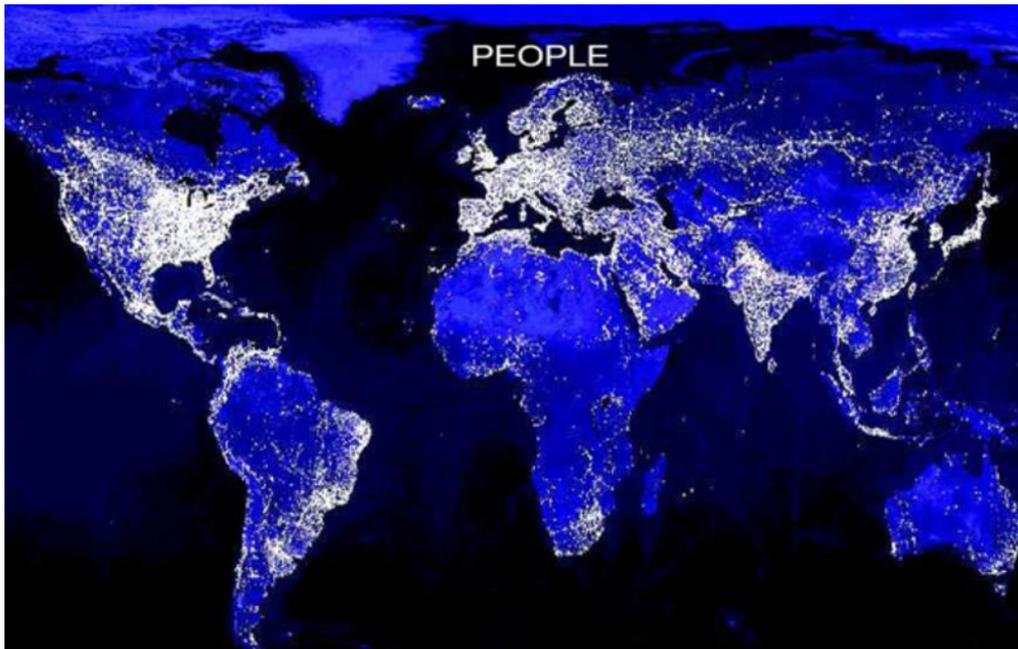


Fig. 1. The distribution of the world population

The number of Earth population is now about 7 milliards and each day this number is increasing. The UN experts have done projection how the world could look in 2100. The prediction is, world population could increase to 10 milliard and 80% will live in cities. The experts believe due to increase it the result will be in so called Mega Cities with population, over 20.000.000 as now are Delhi, Mexico City and Beijing, some USA cities.

2. A vision of future lifes and buildings

The life of new generations will be changed and indeed, it is today already changed. The people will be mostly living in cities and staying indoors. The new buildings will mostly be in new towns. All Existing buildings will be renovated in next 100 years.

The new future buildings are going in the high and will have following characteristics: optimized systems for personalized environment and improved health and wellbeing, personalize comfort provision. Occupants have to learn behavior and expectations, quantify and improve health and wellbeing, building systems will be

Some thoughts what brings end of this century to building sector, to life stile, inside and outside living conditions

modular, durable construction and interoperable adaptive building components will consist of modular systems, embrace intelligent envelopes, composed of programable and interoperable components. Also utilities, transactive networks and distributive solutions for high efficiency and resilience, integrated centralized and decentralized networks, connected to transact services and resources.

Community will have multifunctional and diverse services to support community cohesion, adopt to changing needs, connected by multi modal transportation network, measure and disclose holistic performance.

Environment: samples interaction of human and natural systems in the built environment. Fully harvest onsite resources, tied from health influencers, monitor environmental influences.

In next three decades there will be smart sleeping beds which will be adjusted to how much sleep would a person need, how long to rest. Also are predicting automatic color changes of furniture, walls, floors, curtains in rooms.

3. Dying lanuages

Today there are about 7000 languages and a lot of them will no more be in use. Dominant language will be English.

4. Length of mens lifes

In 2010 average life length of world population was 65 years what was about 22%. In 2100 average life would be 81 years. But it was not taken as possibility improvements of medicine and also negative influence of hunger, new illnesses, consequences of nuclear wars, depleted uranium and also consequences of global warming.

Energy sources as naphta, gas and coal will not exist if we are going to use as now. It is expected increased use of Hydro energy and wind, solar and another renewable energy sources.

5. Hunger and Water

Even today there are about one million of hungry people and grow of population would this problem make more serious. About one million people are hungry. Maybe the global warming producing drought increases this risk. Also consequences of using so called “depleted” uranium which has dangerous left long period of consequences to health.

6. How great firms and institutions define smart buildings

IBM: „Smarter buildings are well managed, integrated physical and digital infrastructures that provide optimal occupancy services in a reliable, cost effective, and sustainable manner. They help their owners, operators, and facility managers improve asset reliability and performance, what, in turn, reduces energy use, optimize how the space is used, and minimize the environmental impact of their buildings“.

American engineering and design firm LLC: „A smart building is the integration of building, technology, and energy systems. These systems may include

building automation, life safety, telecommunication, user systems, and facility management systems.

“Smart buildings provide actionable information about a building or space within a building to allow the building owner or occupants to manage the buildings“.

The European Commission has the following definition: „a smart building means a building empowered by information and communication technologies in the context of the merging Ubiquitous Computing and the Internet“.

Siemens has this version: “only solutions which create the greatest synergy between energy efficiency, comfort and safety and security will be sustainable over the longer term solution that turn buildings into living organisms: networked, intelligent, sensitive and adaptable“.

3. Conclusion

For smart and cities and towns are important educated, and intelligent people use our buildings. Siemens has this version:

“Only solutions which create the greatest synergy between energy efficiency, comfort and safety and security will be sustainable over the longer term solution that turn buildings into living organisms: networked, intelligent, sensitive and adaptable“.