

LIVING IN THE TECHNOLIS: BETWEEN REALITY AND IMAGINATION

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Perceived as one of the possible reflections of the contemporary society, the technopolis (or the 'techno-city') integrates the latest technology, various modernist and anti-modernist elements, as well as numerous 'utopian' features which should facilitate our lives and underline aspirations for the future. Consequently, our world, composed of overlapped digital and physical realms, flexible spaces and transformable webs, is balancing between utopia and anti-utopia, progress and decay, geography and non-geography.

The stunning, but also horrifying images of the present create tension and confusion, while their fast-changing scales and modes additionally complicate the latest morphing and charting of the global world and its urban nodes. Obviously, the city, as always, depicts the technological background of the society, demonstrating its potentials, paradoxes and threats. However, the modern cities, whose spaces and buildings often represent the wonders of technology, are facing numerous problems. Placed between material and virtual reality, their landscapes are blended and distorted, but colored by similar imperatives and demands. Therefore, the purpose of this paper is to define and analyze the outcomes of the urban/architectural interventions which explicitly or implicitly used modern technologies, generating a stage for the 21st century technopolis.

INTRODUCTION

The city of the 3rd millennium has definitely accepted the new rules of modeling which transform its built environment as well as its social landscapes. The application of advanced technologies has gradually erased previous concepts of space and time relations, setting up a set of parallel realms which overlap and ignore classical notions of social distances, public/private areas and borders. As a result, a new typology of spaces is created causing drastic physical, technological and social transformations readable in the recent patterns of behavior.

The structure of cities is redefined, introducing and superimposing new layers of technology on the inherited urban spaces. The number of actors and entities is multiplied, interaction is increased, while the powerful telecommunication systems impose their own logic and regulations to this newly created techno-backup. The role of space, its functions, forms and dynamic are shifted, leaving behind almost tangible confusion with melted bubbles of public and private spheres. Therefore, people

are challenged by over-stimulation and over-protection, while the requirements for simultaneous integration and isolation are underlined.

The numerous faces of technology are embedded in complicated systems that facilitate and coordinate our everyday life. They provide an incomprehensible mixture of worldwide extensions, junctions and ever-changing scenery. The speed and flexibility of flows are increased providing almost limitless capacity and polyvalent connections - between places, people and information. Consequently, the urban space and its architectural expression have become polymorphous chimeras, able to provide overlapping of digital and physical realms, electronic mediation of its elements and (im)material framework for contemporary activities. Having a new structure, concept, users, appearance and scale, these activities directly or indirectly mold our environment and direct our civilization towards contradictory goals.

The contemporary technopolis is still searching for its perfect mode of functioning

and representation. It simultaneously supports radical as well as moderate architectural techno-outlook and uses technology as an urban activator and/or generator, a tool, a back up or an icon of the further development.

THE ROLE OF TECHNOLOGY

It is obvious that the existing technology, with its various applications and implications, has become a vital ingredient of the modern urban culture. However, the specific urban situation has also an important influence on the design of technology and its performances. Therefore, the interaction of city, society and technology is more intensive, which in return causes, stimulates and promotes urban and technological innovations.

The advanced technology could indeed affect contradictory feelings, confront opposing viewpoints and drastically change our physical and psychological experience of the surrounding. At the same time, the rising power of technology provides uncountable possibilities which saturate our ephemeral existence and create false image of human

supremacy. Thus, the relation between new models of behavior, physical structure of cities and the latest phase of ICT development defines new rules of urban transformation which could upgrade (or degrade) social interactions and totally alter perception of space and time parameters.

Focusing on the role of obduracy/inflexibility in urban socio-technical change, Anique Hommels (2005) presents three different conceptions applied in urban and technology studies, which are dealing with this problem - concept of frames, embeddedness and persistent traditions.

According to Hommels, the concept of frames could be applied to situations in which architectural, planning and technology experts, as well as users, are limited by the rigid ways of thinking and interacting. Therefore, this model is often used in the urban planning and (re)design, when actors, with their needs, are identified and involved in the planning process. Simultaneously, their interactions are developed and conducted within a specific technological frame which directly and indirectly moulds their problems and goals. The same frame affects the professionals, shaping their theories, strategies, procedures and methods which should offer acceptable solutions and solve identified problems.

The concept of embeddedness explains tight relation between technology networks and socio-technical systems, actor-networks and socio-technical ensemble. It could be used for various kinds of urban analyses - stressing the importance of interlinked social and technical elements which create a well known tension between the stability of built environment, transportation, water/waste networks and mobility of people, information and capital. The model explains heterogeneous nature of city and its networks, taking into account the technological inflexibility of urban systems or their elements.

The model of persistent traditions emphasises the role of shared cultural context, its values and traditions in the process of technological (and urban) development. The concept also tends to explain the dynamics of technological change and to clarify the relation between technological determinism and social constructivism within the urban system. It takes

into consideration categories such as 'shared visions' and 'archetypes' focusing our attention on structural, cultural and symbolic factors which influence the inflexibility of urban structure and its technological background.

In spite of numerous benefits, new technology always brings uncertainty. However, its role in the contemporary city is undeniable since it instigates a chain reaction which should lead and support further development, transformation and regeneration. It therefore comes as no surprise that various initiatives and programs, oriented towards the urban future and its representation, reveal the crucial position of technology.

THE WORLD AT HAND?

The contracted space and time distances, high connectivity, increased efficiency and broadly accepted logic of networks have gradually reduced the importance of 'the place' which caused a new multiscale reading of cities. Today, they represent an improved concoction of spatial, functional and technological ingredients, folded in a multi-tasking space-time continuum, with multiple centers, but without visible confines. Acting as more or less independent nodes, cities pulsate, periodically imploding or exploding, while their citizens - often confused and threatened by electronic and media over-stimulation, are trying to anchor themselves somewhere in the whirl of technology and globalization. Floating between places, 'non-places'¹, links, intersections, the periphery and the center, people adopt and adjust to the imposed dynamic and rhythm.

However, there are some attempts to map our disintegrated and fuzzy reality and the most promising seems to be the set of five Atlases of City Network Connection, made by Jared Lang and his associates. Using the Peter Taylor's concept of World City Network and GIS, they created an interesting visualization which represents the contemporary 'landscape

of globalization², with new space relationships. The authors selected the top 123 cities, analyzed their global network connectivity and established a 'space' with orbits, structured upon connections. Disregarding the geography as we know it, the new landscape reveals the relative city locations based on connectivity values - the cities closest to the center are the best connected (London, New York and Tokyo), the cities on the edges are least connected while the city's z-value describes the strength of the world city connection.

Seemingly, the world at hand is not just a phrase or figural speech anymore, but the reality which offers a remarkable number of possibilities and challenges. Consequently, while making the limitless spaces and increasing the information speed, cities and their inhabitants are also searching for a new kind of defense. They create their own borders and passivity, closing themselves into the real and virtual capsules. Therefore, our world could also be perceived as a number of isolated and artificial environments, with a limited communication and interaction between the 'inner' and 'outer' entities. Subordinated by the numerous enclosures and prerogatives of protection, our cities could become a collection of contemporary (anti)utopias or, according to Foucault, *heterotopias*. They, all together, depict our century - based upon desanctified time and not entirely desanctified space full of oppositions (Foucault 1986: 22-27).

Obviously, after the millennia of constant battle against the wonders of nature and various enemies, in the moment of technological apex, world is facing another kind of collective fear and uncertainty which De Cauter³ calls the 'New Fear'. He also identifies six basic strata - demographic fear, dromophobia, economic fear, xenophobia, agoraphobia or political fear and fear of terrorism. Each one of them influences the way we behave and react, but the result is more or less the same - people, overexposed to numerous stimulations, create self-sufficient cocoons, which further leads to the lack of visual identity and authenticity.

¹ On this see, for example, Foucault, Michel (1986), "Of other spaces", *Diacritics* 16: 22-27; Augé, Mark (1995), *Non-places: An Introduction to an Anthropology of Supermodernity*, London: Verso, and also Augé, Mark (1999), *An Anthropology for Contemporaneous Worlds*, Stanford, CA: Stanford University Press

² Taylor, Peter (2004), *World City Network: A Global Urban Analysis*, London: Routledge: 123.

³ See in De Cauter, Lieven (2004), *The Capsular Civilization*, Rotterdam: NAi Publishers: 116-123

Therefore, the space does not become the place but a placeless fragment circumscribed by video-surveillance, private security and 'smart' gates.

The world at hand? Maybe this is just one of numerous illusions created by the miracles of technology.

UPLOADING THE FUTURE

The new context of reality, composed of physical and cyber spaces, apparently determines another kind of morphing, structured around biological, information and meta-geographical components. It reflects the power and influence of technology, which - in return - should facilitate better understanding of the decomposed past and the recomposed future. However, the combination of city and technology could have various shapes. The question is which one of them is the most promising one?

City of technology, city for technology?

Strongly influenced by the competitive nature of globalization processes, the contemporary planning and architectural practice gradually transform urban tissue into the attractive framework for the innovative class. Therefore, we could identify two main approaches - one that creates completely new 'technologized' environment or the other, which adjusts and upgrades remains of the previous technological focal points to the new demands of science, research and telecommunication.

The best example of the first method is certainly Singapore, with its 'ONE-NORTH' Initiative. Using the modern technology as a tool, catalyst and an aim of urban development, this city-state anticipates its future as a global science hub - a city of/for technology.

The similar logic, but on a lower scale, has been applied in Schwechat, a town on the south-eastern outskirts of Vienna. Using its close proximity to the Vienna airport i.e. the excellent connectivity on local, regional and global level, this 'node' should become a regionally and globally recognizable science node, whose main attractiveness is structured around high technology and innovation.

The second, more moderate approach, combines issues of technological/cultural



Figure 1. Singapore, One North (model) - the city created for high technology and its experts. (Waikeen, Ng and Judith Ryser, eds. (2005), *Making Spaces for the Creative Economy - ISOCARP Review*, Madrid: ISOCaRP: 150)

heritage, regeneration and urban improvement, implanting new activities in the ex-industrial or other historical areas of cities. Barcelona, Dublin, Istanbul and Milan are just some of the urban nodes that accepted this direction which should enable them to modernize environment, achieve a preferred level of excellence, connect to the networks of innovation and support their technological potential. The set of possible activities is quite extensive - from ICT, media, biotechnologies, R&D, energy efficiency and sustainability to numerous services which should facilitate interaction and intermediation between scientists, researchers, business companies and - citizens.

City by technology

Cities have always been the best and the most obvious manifestation of technology, its power and contradictions. Various tools have been used in order to transform the natural environment, leaving behind radically changed landscapes, artificial structures and grand schemes of human power and vanity. However, the futuristic, self-centered utopias (like Dubai) or cataclysmic science-fiction predictions are not the only possible outcomes of technological progress. Of course, higher global efficiency and attractiveness are still the imperatives that cannot be denied or avoided, but the importance of natural balance, sustainability and flexibility gradually becomes a key-issue of our future development. Therefore, the city made by the latest technology should be prepared to respond to various situations and to act - intelligently.

The connection between intelligent building systems and global telecommunications



Figure 2. New York, SmartWrap Building - a prototype building, an example of the potential of the new material.

(Kronenburg, Robert (2007), *Flexible - Architecture that Responds to Change*, London: Laurence King Publishing Ltd.: 228)

represent the pre-condition of successful interaction, which, in return, should create and provide an environment that adjusts to our needs and external conditions. The benefits are obvious - so-called 'intelligent automation' could reduce energy costs, improve efficiency, accuracy and safety, but it could also 'produce' changeable architecture and, consequently - interactive and innovative urban space. The latest inventions - like Fluidic Muscle (Festo KG, 2003)⁴, LiTraCon⁵, Nanogel⁶ or SmartWrap (Kieran Timbelrake Assoc. and DuPont)⁷, are certainly very promising. They open a number of new possibilities, shaping a new comprehension and perception of 'technopolis' - which, in this case, should be the positive image of human development, a step towards eco-friendly future and a well-balanced image of costs and benefits.

Overwhelming optimism or another challenge for tomorrow?

⁴ Fluidic Muscle - silicon-coated polyamide rubber tube that causes linear movement as it contracts and expands

⁵ LiTraCon - transparent concrete which incorporates glass fibers

⁶ Nanogel - transparent and hydrophobic material able to reduce thermal transmission in façade systems

⁷ SmartWrap - composite and interactive building skin material which protects from external conditions but also enables climate and energy control, lightning and display of information

City through technology

The technology could also provide a new insight in the urban life. This idea was used by different artist and architects, but the example of D-tower in Doetinchem (NOX Team - Lars Spuybroek, Q. S. Serafijn, 2003) brings to light a sensitive connection between people, city and technology.

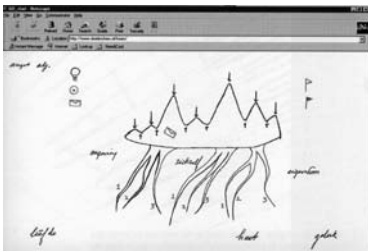


Figure 3. Doetinchem, D tower - interaction between city, citizens and artists materialized through technology.

(Brouwer, Joke, Arjen Mulder and Laura Martz, eds. (2002) *Transurbanism*, Rotterdam: V2_Publishing, NAI Publishers: 87/79)

Consequently, D-tower represents a unique mixture of different media, with an interactive system of relationships. It consists of a 12-meter-high tower, questionnaire and a website. The complex polyester surface, formed by a computer-generated molding technique, displays responses to the questionnaire illuminating the building.

Expressing the basic human emotions (happiness, love, hate and fear), this project - though the selected colors and the 'emotional landscapes' of the web space, makes a new network between various urban, social and technological elements. Every year, communication is intensified, opening a new field of inter-perception.

Obviously, we are facing another kind of city reading which could be treated as a new riddle:

is it a magic of technology, visualization of emotions or a modern entertainment?

City in technology

Somewhere between a computer game and the real life, we could find a virtual world created and developed by Linden Lab in 2006. The name - Second Life - makes its purpose more understandable. Actually, this online digital world, shaped in the e-network and 'conducted' by the web-site visitors, enables users (Residents) to interact with each other, participating in individual and group activities.



Figure 4. Second life - parallel realm of existence structured in the web-world. (www.secondlife.com)

Inspired by the cyberpunk movement, the 'Second Life' represents a user-defined world of general use, which has its own structure, environment(s), marketplace and currency. Its territory has almost 65.000 acres and its facilities enable various activities. They could be tested and explored, but completely free and without restrictions that some of us would have in the real life. Currently, the Second Life has more than thirteen million registered accounts/users. The variety of scenery, under the motto "Your World. Your Imagination" certainly represents one of the available options for unique experience of total e-topia(?) and some of its elements will be used (together with Google Earth) to create the so-called Second World as the World Wide Sim.

Obviously, something which was launched as an entertainment has become a serious communication medium for self-expression and representation, especially having in mind that some countries

opened their Embassies in this Metaverse. Therefore, the thin line between real and virtual world is disappearing, scales and borders are losing their original meanings and our life definitely becomes a set of realities which overlap, pulsate and confront.

City featuring technology

Converting itself into a number of interrelated (digital) units, the contemporary city still contains its inherited physical nodes. However, nowadays they should also have some kind of technological 'image' - through their 'smart' infrastructure, 'sustainable' concepts or, at least, through the fashionable 'techno' outlook, as a simulacrum of the technological vigor. Consequently, the buildings and open spaces use different elements from the computer vocabulary - interpreted in the special, architecturally adjusted manner.

Matrix?

The example of Galeries Lafayette in Berlin, designed by Jean Nouvel in 1996, represents one of attempts to create a techno-like environment even though it is not related to the technologically demanding activity. However, this contemporary temple of consumption, owing to the architectural imagination, uses its surface and texture as the means of communication between interior and exterior, users and passers-by.



Figure 5. Berlin, Galeries Lafayette - shopping within the computer matrix.

(Pearman, Hugh (2002), *Contemporary World Architecture*, London, New York, NY: Phaidon Press: 195)

However, the real image of digitalized reality is placed in the middle of the building, revealing the enormous vortex consisted of two cones of empty space, lined with silvered glass which

reflects refracted images of the space. This dramatic matrix-like membrane from the inside, as well as the big screens outside, act like a user-friendly interface, completely subordinated to the main purpose - shopping.

Screen?

Transposing the morphology of the computer, the city accepts its advantages as well. The building facades have become the substitute for the monitor screens, offering a new medium for ever-changing picture of the city, technology and society.

Therefore, the building of CCTV (Beijing, OMA/Rem Koolhaas, 2008) should present not just an icon for the future Central Business District, but an advanced center for broadcasting and media production. Consisted of two buildings which make a continuous loop of horizontal and vertical sections, it should - especially through its media façade - ensure a high visual dynamic of the space, publicly displaying sequences of TV program, commercials and broadcasts.



Figure 6. Beijing, CCTV - building as a public screen. (http://www.arcspace.com/architects/koolhaas/chinese_television/index.htm)

Intermedia playground?

The example of Chungmuro Intermedia Playground, redesigned by Cho Slade Architecture in 2002, is based upon new comprehension of space and socio-economic interactions, stimulated and directed by new communication technology and media. The 'playground' actually represents the center for new media placed in the passage of the Chungmuro subway station in Seoul. It is a symbol of functional overlapping, simultaneously being a destination and a passageway, a lounge/library, offices, editing facilities, a theater/auditorium and an exhibition space. Therefore, the interior is

constantly visually reconfigured, depending on movement and viewer's perception. The final effect is a reflective, flexible sequential space, which enables a dynamic, interactive and mediating experience, full of electronic and physical elements.



Figure 7. Seoul, Chungmuro Intermedia Playground - distorted images and interactions as the entertainment, architectural concept and philosophical idea. (Gastil, Raymond W. and Zoe Ryan, eds. (2004), *Open - New Designs for Public Space*, New York: Van Alen Institute: 63)

Virtual or real, the world is distorting its images. The limits between private and public are blurred, the space creates its own technology and the fuzzy networks stretch themselves beyond our consciousness.

Digital landscape?

Finally, it is important to notice that the atmosphere of the digitalized environment has already been 'exported' into the terrestrial reality, becoming one of the imagined scenes in the land of fairytales - Disneyland. This interpretation of the 'futuristic' environment, designed by Frank O. Gehry for the Disneyland Paris (more than 15 years ago), actually represents a mix-used area, with oxidized silver and bronze colored towers, metallic pillar structures and suspended light canopy, resembling the real and virtual networks of the contemporary world. Even though the light-web was removed in 2005, the idea remained - the cartoon-like background stands as a testimony, foresight or a warning, waiting for new adventures to be performed.

Evidently, the technology has affected generation of new spatial typologies, with transformable structures and eye-catching envelopes for multiple activities. Therefore, the



Figure 8. Paris, Disneyland - depicted reality of the virtual experiences? (Pearman, Hugh (2002), *Contemporary World Architecture*, London, New York, NY: Phaidon Press: 331)

future landscape and revised geography will certainly incorporate some unexpected innovations and sensations, which will bridge the gap between material and virtual, reality and imagination. In the meantime, the connective tissue, generated from entangled spaces and stretched networks, will mirror the achievements or the failures of technology, as well as the accurate condition of humanity.

CONCLUSION

The rollercoaster of progress is taking us to the top of the development loop. The number of options and realities is rapidly increasing, the interaction between multiplying elements becomes complex and confusing while the line between explosion and implosion, omnipotence and total helplessness gradually disappears.

The role of technology, as well as its influence on cities and society, seems to be easily understandable and readable in all historical periods. However, it is difficult to predict the final effect of the acceleration which we are facing today. Does its real power lie in the fear which it instigates or in the numerous possibilities which it opens? Could it be channeled in order to achieve the sustainable equilibrium or will it be used as a cover for manipulation?

Apparently, the wonderland created by the contemporary technocities, their interlinked realms and redefined topographies is not just a fashion or a temporary expression of chaotic processes in our world. Therefore, before we totally overgrow the terrestrial reality and

diminish the power of gravity - let us take a deep breath.

The avatars and the virtual non-places from the Second life are not the only surprise that is waiting for us.

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