

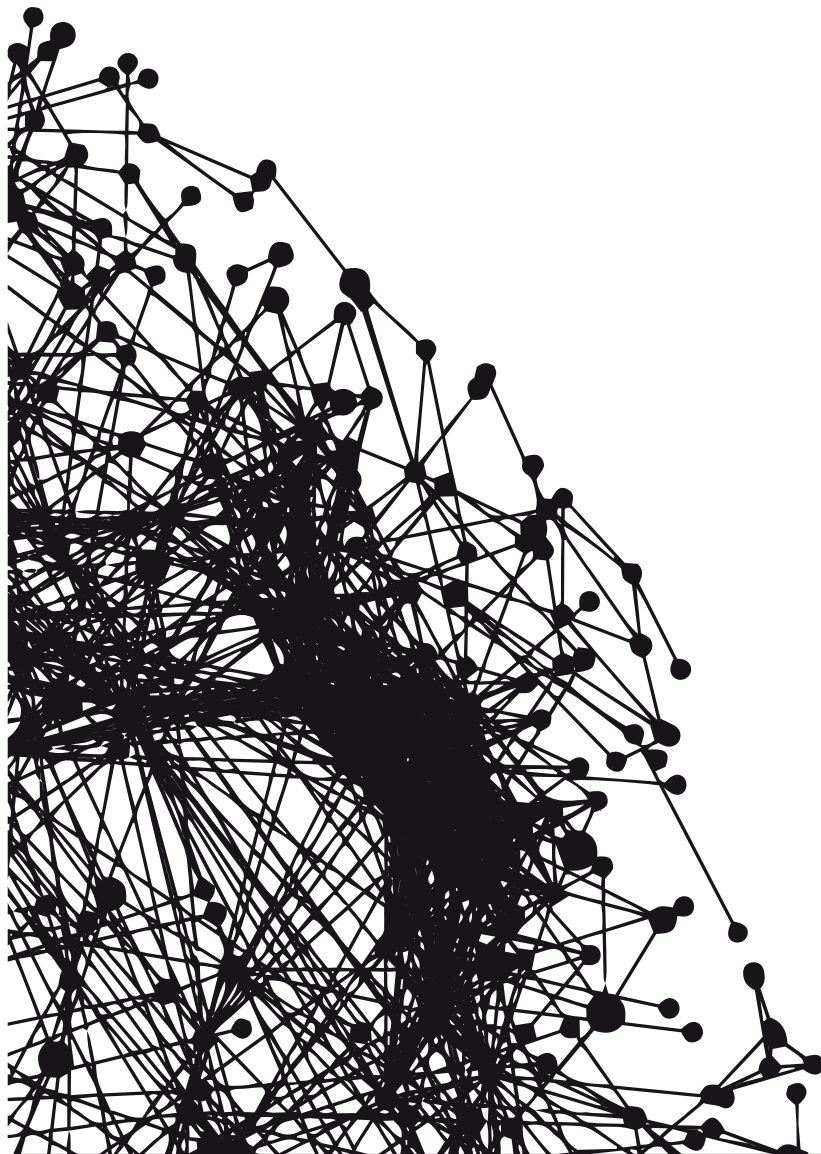
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PLACES AND TECHNOLOGIES 2014

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editors:

Eva Vaništa Lazarević, Aleksandra Đukić,  
Aleksandra Krstić - Furundžić, Milena Vukmirović

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# PLACES AND TECHNOLOGIES 2014

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## TRANSPARENCY OF SCALE: GEOGRAPHICAL INFORMATION PROGRAM (GOOGLE EARTH) AND THE VIEW FROM BEYOND

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## ABSTRACT

*A nine-minute film, directed by architects Charles and Ray Eames, "Powers of Ten" visualized for the first time the journey through the different scales of existence - from outer space to the space of the atom. This film inspired the Keyhole Project, which, twenty years later, became Google Earth, a (non) commercial online tool for surveying the surface of Earth, making those intriguing images from the 1970s part of our everyday life. Today, as Google Earth counts more than one billion downloads per year, Felix Baumgartner experienced zoom-out mode in physical space, launching himself into the stratosphere. This new overview of the planet that is provided to us by Google Earth virtually, Felix Baumgartner for the first time experienced in physical space; he sky-jumped from the height of estimated 39,000 m, proving that one can actually see the Earth as simulated by Google Earth. Humanity gained a new glance, an overview towards the territory of Earth. This paper argues that this transformation of the nature of the vista provokes the emergence of new modes of perception, cognition and experience of space and place specific to the emerging era (thus provoking new modes of production of space). This paper raises questions regarding the case of the Google Earth program and its impact on spatial perception in the context of architectural discourse.*

**Keywords:** *perception, scale, territory, perspective, photography, virtual*

## INTRODUCTION: PERCEPTION OF SPACE IN DIGITAL AGE

The paper argues the significance of the emergence of Virtual Globe platforms, i.e. of Google Earth, and its effect on spatial practice<sup>246</sup> regarding perception and the

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<sup>246</sup> With this we take Henri Lefebvre's space and notion of multiplicity of space as a social product, or a complex social construction, which affects spatial practices and perceptions,

causal nature of the relationship between technology and society. The significance of Google Earth is seen beyond the mere utility of the software, as an important platform for determining the contemporary perception. New overview of Earth combined with complex layers of data, follows previous shifts in perception: the appearance of central perspective in the Renaissance and the rise of photography in Modern time. In this regard, the paper argues that the present mode of representation of space caused a latest shift in perception.

Until 20 years ago, architecture still held the apparatus and tools to conceive and perceive particular spatial ideas. But even further, the discipline of architecture held a sovereign position in projecting and imposing our spatial perception of the world. In today's digital age, characterized by user-friendly platforms for spatial manipulation, a shift in perception is inevitable; a shift from the world dominated by the architect as a master-designer of the image of space, to an age of prevailing micro-generated spaces<sup>247</sup> guided and maneuvered by consumers of open-ended platforms. These platforms promote interaction as a way of communication between actual and virtual<sup>248</sup>, with an interface as the main surface of this interaction. The architectural principle of projection (conducted through drawings, plans and models) that provokes unitary perception is confronted with fragmentary individual interpretations of space.

#### SHIFTS IN PERCEPTION: MULTIPLYING REALITY

In order to fully comprehend Google Earth beyond simplified notion of a new outlook upon reality, we should return to previous shifts in perception. In Renaissance, the 'invention' of linear perspective by Brunelleschi was more than improvement in technique of representation; for his contemporaries it was a manifestation and proof of the prosperity and inherent development of an enlightened and prosperous society. The new accurate model for representing reality was produced in order to more convincingly assure the viewer about the credibility of an architectural idea. Brunelleschi's 'invention' of perspective was the result of a constant quest for more and more convincing modes of three-dimensional visualizations. Linear perspective on a 2D surface seduces the viewer into believing a certain loss of 3D has been compensated. A wish for seduction has led us to insist upon the accuracy of representation<sup>249</sup>. However, this apparatus of 'seduction' produces 'side effects'

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which implies the shift of the research perspective from space to processes of its production.

See Henri Lefebvre (1992) *The Production of Space*.

<sup>247</sup> In this paper, the term micro-generated space refers to a personalized, customizable virtual space made possible by wearable technology, i.e. smart phone or tablet.

<sup>248</sup> According to Gilles Deleuze, the common dialectics between *actuality* and *possibility* must be replaced with putting *actual* and *virtual* as a dialectic pair, in order to pursue the notion that reality can never be fully, nor adequately represented. Gilles Deleuze (1994) *A Thousand Plateaus*, p. 211

<sup>249</sup> For Baudrillard, architecture of Las Vegas is trapped within depthless world of appearance, where everything is 'liquidated' and 'reabsorbed' into surface. Baudrillard sees this as logic of

which generate human sensitivity for distinction between real space and realistic two-dimensional space.

With the invention of linear perspective view as a way to seduce the observer, an image offers additional value of depth to the surface. As Baudrillard observes, this seduction starts to vanish with the advancement of industrial revolution, as the contemporary world starts to appear: 'Seduction [perspective] removes something from the order of the visible, while production [photograph] constructs everything in full view, be it an object, a number or a concept.'<sup>250</sup> Instead of a concept of seduction, there was progressive "emphasis on production with its concern to make everything clear and objectifiable"<sup>251</sup>. A new era and a new shift in perception were therefore dominated by invention of a camera.

The first photograph was a photograph of architecture<sup>252</sup>. Although the intention to capture a moment probably came from the idea to photograph a person, architecture and photography kept on developing together in an alternating, causal sequence. At that time two types of architectural photography, both primarily of documentary character, were typical: elevation as representation of a drawing, i.e. facade and perspective as representation of volume.

Photography had an enormous effect on the development of modern architecture. Architecture and photography worked together to create the identities of contemporary man, the contemporary building, and the contemporary city. It wasn't just for the sake of documentation anymore. Together they caused a shift in the way in which architecture is seen, and therefore understood, promoted and advertised, and thus wanted. Images of architecture are used as statements and manifestos. They are used during the design process, as tools for conceptualisation, and in education, for the evaluation of work. Beatriz Colomina (1994) claims that photography, rather than the real location of buildings, was the genuine site of Modernism<sup>253</sup>. Photography is responsible for the disappearance of a localised approach to design and the emergence of the International style in architecture. Later on, this correlation between architecture and image brought us to the Bilbao Effect and secured the new role of urbanism in globalization.

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seduction, which, as he defines, "is that which extracts meaning from discourse and detracts it from its truth". Real only remains true if we believe in fictions without functions. See Jean Baudrillard (1988) *Selected Writings*, ed. Mark Poster

<sup>250</sup> Ibid. p.190.

<sup>251</sup> See Neil Leach (2000) *The Anaesthetics of Architecture*, p.73

<sup>252</sup> *View from the Window at Le Gras* by Nicéphore Niépce from 1826/27, taken from his window in a village in Burgundy, France, is the oldest surviving photograph

<sup>253</sup> For further reference Beatriz Colomina (1994) *Privacy and Publicity: Modern Architecture as Mass Media*

Alluding to Jules Marey's photographic gun, Bruno Latour suggests that the biggest flaw of buildings (and photography for that matter) is their static nature.<sup>254</sup> 'Almost four centuries after perspective drawings and more than two centuries after the invention of projective geometry there is still no convincing way to draw the controversial space that a building almost always is. It is hard to believe that the powerful visualizing tools we now possess are still unable to do more than Leonardo, Duerer, or Piero. [...] We should finally be able to picture a building as a moving modulator regulating different intensities of engagement [...]'<sup>255</sup> Inside this phenomenon architects were compelled to adapt to techniques of a film director in relation to space, life scenario and construction of spatial possibilities.

Modernists placed great importance on the aerial view. Their relationship with zenithal perspective was described by Nadar<sup>256</sup>, creator of the very first aerial photograph, who said that cities and landscapes, from above, look like a toy-land, inviting one to play<sup>257</sup>. Modernists assigned a negative connotation to the aerial view, as it depicted urban disorder, but at the same time they saw the aerial view as a perfect tool for this chaos to be arranged and controlled.



**Figure 65: Earthrise - photograph by William Anders, NASA, 1968.**

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<sup>254</sup> Latour, B, Yaneva, A. *Give me a Gun and I will Make All Buildings Move: An ANT's View of Architecture* in: R. Geiser, ed. (2008) *Explorations in Architecture: Teaching, Design, Research*. Basel: Birkhäuser.

<sup>255</sup> *Ibid.* p. 80-89.

<sup>256</sup> French journalist, photographer and balloonist, Nadar, due to his passion for extending a view, made the first aerial photographs in 1858.

<sup>257</sup> See Tanis Hinchcliffe 'The Synoptic View': Aerial Photographs and Twentieth-Century Planning in: Higgott A, Wray T. Eds. (2012) *Camera Constructs: Photography, Architecture and the Modern City*, p.136

As a result of technological development due to both World Wars, the first photograph<sup>258</sup> from Space was taken in 1946. Images from the missile showed 'how our Earth would look to visitors from another planet coming in on a space ship'<sup>259</sup>. We finally gained the perspective we so desired, a *God's eye view*. One particular photograph changed the way we understand our world. A photograph named *Earthrise*, taken during the Apollo 8 mission in 1968 by William Anders, is considered the most influential environmental photograph ever taken. Although the intention of the mission was to see and understand the Moon, the real discovery was our very own home – Earth. As Robert Poole wrote in his book *Earthrise: How Man First Saw the Earth*, 'The space program, which was meant to show mankind that its home was only its cradle, ended up showing that its cradle was its only home.' It can be argued that this event could be considered as a turning point for the growing environmental awareness during the second half of 20<sup>th</sup> century until today, as well resulting in emergence of environmental discourse in architecture.

The same year Buckminster Fuller's book *Operating Manual for Spaceship Earth* is published. 'We are all astronauts' he writes, on Spaceship Earth. He continues to convince us of this astounding idea further, with an explanation of the relativity of scale: 'Our little Spaceship Earth is only eight thousand miles in diameter, which is almost a negligible dimension in the great vastness of space [...]'.<sup>260</sup> It was as if scale-fever had seized everyone in 1968. The movie *Powers of Ten*, by architects Charles and Ray Eames, had created a revolution in scale perception. The journey from the space we are familiar with, into outer space, and then back to the space of an atom did not leave anybody unaffected. The relativity of scale inspired a whole new set of research, projects and discoveries. In 1968 Constantinos Doxiadis's book *Ecumenopolis*<sup>261</sup>: *Tomorrow's City* was proclaimed Briattanica Book of the Year. Doxiadis, Greek architect and town planner collaborated closely with Buckminster Fuller and Marshall McLuhan. They used to meet regularly at the Delos Symposia<sup>262</sup>,

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<sup>258</sup> With the V-2 missile, developed by German engineers during the WWII for the purpose of destruction, later on appropriated by Allied Forces the first photo from Space was made in 1946.

<sup>259</sup> Clyde Holliday, the engineer who developed the camera, gave this description in *National Geographic* in 1950 (source: <http://www.airspacemag.com/space/the-first-photo-from-space-13721411/> accessed on 02.02.2014)

<sup>260</sup> see Buckminster Fuller (1969), *Operating Manual for Spaceship Earth*, p15  
Wittily, he is noticing that the manual for our spaceship is missing but we are all slowly but surely learning how to "anticipate the consequences of an increasing number of alternative ways of extending our satisfactory survival and growth - both physical and metaphysical."

<sup>261</sup> Ecumenopolis, from Greek: οἰκουμένην, meaning "world", and πόλις meaning "city", thus a city made of the whole world (source: <http://en.wikipedia.org/wiki/Ecumenopolis> accessed on 02.02.2014)

<sup>262</sup> The Delos Symposium was an international forum discussing human settlements. The idea emerged as a reaction to CIAM meetings, but the whole thing was taken to a different level. First of all it didn't stick only to architects as CIAM, but the experts from all the different fields were invited, secondly they didn't sit in front of the finished projects but in front of an empty black board, creating rather than reflecting, and thirdly it wasn't about obvious and visible, but

organized by Doxiadis and his team. Doxiadis's vision for the future, epitomised in Ecumenopolis, alerted us to what might happen if we don't understand the new circumstances; population growth and accelerated urbanization will slowly outgrow a human. He therefore proposed The City of the Future, an endless network covering the surface of the Earth, which will retain the human content and anthropometry, regardless of its size. Recently Doxiadis was honoured to be the first global planner<sup>263</sup>. In the 1970s his ideas were more of a science fiction, but today they are surprisingly pertinent, both in content and rhetoric. 'Today, more and more cities are not only becoming dynamic, but continuously dynamic, so that they never stop changing and growing. For the first time in history, settlements are not only three dimensional but four dimensional, since they exist continuously within the fourth dimension of time.'<sup>264</sup>

### THE END OF DISTANCE AND THE HYBRID STATE OF SPACE

'The surface of the Earth has a thickness but it could not be considered a volume. The Earth's is a surface thickened by relations.[...] It always overflows any map that tries to frame it, because there are always more connections to be made.'<sup>265</sup>

The reduced, informational appearance of a (geographical) map is replaced with the hyper-real, graphically accurate simulation of the terrain in Google Earth. In this saturation of content, the characteristics and beauty of the landscape, its territorial borders and the socio-political character of the territory disappear, becoming relative, and set as secondary.

In his *End of geography* thesis, Kenichi Ohmae (1990) proclaims the end of nation-states and old cartography, announcing the death of distance and the triumph of technology over place- the annihilation of space with technology.<sup>266</sup> Vincent Mosco sees this as 'a story about a fundamental change in relationship to space and place', concluding that 'cyberspace is fundamentally different from geography as we know it, because this space is almost fully transparent with respect to communication'<sup>267</sup>. From today's perspective, one can argue that the relation between digital (cyber) and real space is symbiotic and causal, where former does not exclude the later. Today, the boundary between digital and real space has blurred, producing a hybrid terrain where *the digital* relies on *the real* for its means of conveyance, and *the real* relies on *the digital* for content and experience. The impact of this overlap of real and digital

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absolutely the opposite – the intention was to reveal the invisible networks. (see Mark Wigley (2001) *Network Fever* in *Grey Room* No. 04, p. 82– 122.)

<sup>263</sup> See in Rem Koolhaas and Hans Ulrich Obrist (2011) *Project Japan: Metabolism Talks*

<sup>264</sup> See Constantinos Doxiadis (1974) *Ecumenopolis: The Inevitable City of the Future*, p7.

<sup>265</sup> Weizman, Eyal, *Forensic Architecture: Lexicon*, source: <http://www.forensic-architecture.org/lexicon/>

<sup>266</sup> See Kenichi Ohmae (1990) *Borderless World*. 'The old cartography no longer works. It has become no more than illusion.' p.19-20.

<sup>267</sup> See Vincent Mosco (2004) *Digital Sublime*, p.86.

on architecture is still not widely addressed, making a collective uncertainty about where digital technology fits in the architect's toolkit.

The case of Google Earth questions the fundamental role of architecture, and its aspiration to influence the perception of the world and the shaping of society. Confronted with this phenomenon, architects are facing the inevitability of hunt for new fields for action. For architecture in this case there is again the possibility of expansion of the scope and territories.

## CONCLUSIONS

Through interpreting the appearance of linear perspective and photography as crucial shifts in perception, this paper argues that the virtual globe is a symptom of a crucial current change. Architects have acquired a new tool, which with each passing day, event or technological innovation is becoming more layered and complex. We will be able to access databases on commerce dynamics, real estate fluctuations, people and vehicle motion, natural disasters and much more, and to trace changes over time. Can the information overload be channelled and structured into useful knowledge? How can we understand the data we collect and how can we use it to generate tools for action?

At the same time, Google Earth offers a new set of possibilities for architects and a wider scope on their primary subject of desire: the surface (as a construction ground), giving architects a sense of expansion. Expansion in this sense raises a notion of scale with regard to new possibilities of a boundless surface. New transparency of scale, distance and topography has enabled a wider scope for architecture.

The contextuality of an architectural project therefore takes on a new, more complex sense in light of the accuracy of the satellite image. The new overview of the territory holds the promise of a new, accurate tool that can greatly simplify and inform the process of design. Despite this, the view from beyond is not merely a utilitarian device, but possesses the poetics of discovering new landscapes and perspectives. The territory of the planet is once more a field of exploration; using holistic optical apparatus for surfing over scales and datascares, this exploration has no borders for obstacle.

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