

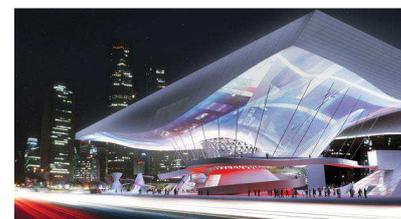
## Archivolta 2(54)2012 Summary Review

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Krystyna Januszkiewicz

**Busan Cinema BIFF - Film Festivals in Pusan, South Korea** pp. 8-17

COOP HIMMELB(L)AU Wolf D.Prix/W. Dreibholz & Partner ZT GmbH



At the end of last year, the execution of the largest cantilever roof in the world was completed. The roof is an integral part of an international center for film festivals Busan International Film Festival (BIFF) in Pusan, the largest port city in South Korea. On 23<sup>rd</sup> March 2012, during a great gala, the Guinness World Record for this achievement was proclaimed, honoring the designers at the same time.

COOP HIMMELB(L)AU's design for the Busan Cinema Center and home of the Busan International Film Festival (BIFF) provides a new intersection between public space, cultural programs, entertainment, technology and architecture, creating a vibrant landmark within the urban landscape.

LED saturated outdoor roof elements acting as a virtual sky connect building-objects and plaza-zones into a continuous, multifunctional public urban space.

Media, technology, entertainment and leisure are merged in an open-architecture of changeable and tailored event experiences. The result is a responsive and changing space of flows acting as an urban catalyst for cultural exchange and transformation. The concept envisions an urban plaza of overlapping zones including the Urban Valley, the Red Carpet Zone, the Walk of Fame and the BIFF Canal Park. The urban plaza is formed by building and plaza elements sheltered by two large roofs that are enabled with computer programmed LED outdoor ceiling surfaces. The larger of the roofs includes a column-free cantilever of 85 meters over a multifunctional Memorial Court event plaza. The urban zones defined by functional surfaces in the plan are further articulated in a sectional dialogue between stone-clad "ground" forms of the Cinema Mountain and BIFF Hill, and the metal and LED clad "sky" elements of the roofs. The dynamic LED lighting surface covering the undulating ceilings of the outdoor roof canopies gives the Busan Cinema Center its symbolic and representative iconographic feature.

**The Crystal in Copenhagen - Building of the Year 2011** pp. 18-19

(ed.)



The readers of ArchDaily, the world's largest architectural network, have chosen The Crystal as the winner of the 2011 Building of the Year Awards in the Office Building category. The *Crystal*, designed by Schmidt Hammer Lassen Architects, is an extension of the financial institution Nykredit's Headquarters in Copenhagen. The large steel structure of the building functions as an architectural element while at the same time allowing the building to dispense with pillars, creating maximum flexibility for the employees in the office spaces.

ArchDaily is a source of inspiration for thousands of architects around the world, a community of professionals that once again has acted as the jury for the Building of the Year Awards. The two stages of the awards generated more than 65,000 votes, and the projects were viewed by 200,000 daily readers.

In September 2011, The *Crystal* won an Emirates Glass LEAF Award in the category 'Best Structural Design of the Year' 2011, and in August it received the prestigious European Steel Design Award 2011. Furthermore, The *Crystal* was shortlisted for a World Architecture Festival Award 2011 as well as for the local Copenhagen Award, 'Arne of the Year' 2012.

Krystyna Januszkiewicz

### **National Stadium in Warsaw** pp. 20-28

Consortium: JSK Architekci, Gerkan, Marg und Partners International GmbH, Schlaich Bergermamm & Partner GmGH



January 29, 2012 was the day of the Inauguration of the National Stadium in Warsaw. The new stadium constructed for the UEFA European Football Championships 2012 had been carefully developed to be inserted into the existing 10th-Anniversary Stadium in Warsaw. The stadium has a seating capacity of 55,000. Its construction commenced in 2008 and was completed in November 2011. The stadium is equipped with a heated pitch, training pitch, façade lighting, movable roof and an underground parking space. It is also a multipurpose object providing organization of sports events, concerts, cultural events and it also enables sales, conferences and gastronomic functions (it contains 50 fast food courts and the sales surface of 25,000 m<sup>2</sup>).

The stadium has a unique retractable PVC roof which unfolds from a nest on a needle suspended above the centre of the pitch. The secondary supported membrane is held by radial cables based on the wheel-and-spoke concept. The compression ring consists of a thick-walled round hollow steel profile, which is supported by vertical steel columns. Radiating from the compression ring to the connection points of the upper radial cables are diagonal compression rods. The tension rods of the outer façade simultaneously serve to keep the horizontal cable forces in balance. The main roof spans across the entire tribune, while the inner roof was designed as an operable roof. The operable inner roof can be stored in the central membrane-garage, located at the flying mast above the middle of the playing field.

The stadium is one of the venues for the UEFA Euro 2012 hosted jointly by Poland and Ukraine. Three A Group matches, the quarter final and the semi final are to be played there (with the other matches in that group played at Wroclaw Stadium).

Krystyna Januszkiewicz

### **Performative architecture in Cologne** pp. 32-45



Based on the example of *Weltstadthaus* (2003-2005) in Cologne designed by Renzo Piano, the understanding of the terms *performance* and *performativity* in the architecture of the 21<sup>st</sup> century was presented.

Located on the central Cologne's Schildergasse, there is the city's shopping area. This new Peek & Cloppenburg flagship store is a savant blend of glass, steel, stone and wood: classic materials to dress a modern building which is entirely dedicated to fashion. It is a modern building, however, with a clear reference to tradition, through the use of wooden arches and glass.

The glass house, which is 130 metres long and up to 34 metres high, is reminiscent of a 19th century orangery. The foundation of the department store with a footprint of 22,000 square

metres (of which 15,000 square metres are open to the public). On the top of this foundation rests a wooden construction which supports and shapes the glass jacket composed of round and elliptical profiles. 66 timber girders are connected like ribs to the steel ridge girder, the three-dimensional, slightly curved, “backbone” of the body. This is a new kind of architecture, where the building is understood as fulfilling a task (*performance*) as a result of digital processes. The form is created in response to the environmental conditions and characteristics of the material from which it is made. The guiding principle is to adapt the new priorities in the design of cities, buildings, landscape and infrastructure. Such architecture falls within the general concept of *performance*, i.e. achieving a multi-threaded objective using digital technologies, quantitative and qualitative simulations, in order to propose a complete approach to designing the built environment.

Przemysław Jaworski

### **Parametric design workshops in Wrocław** pp. 63-65

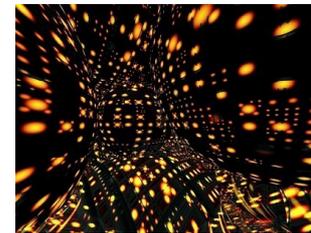


For four weekends the participants of the workshops were gathering necessary knowledge to operate three different software platforms - Generative Components, Rhino Grasshopper and Processing. The workshops were run by Przemek Jaworski, Michał Piasecki and Mateusz Zwierzycki, all three being computational designers, but with slightly different backgrounds. The experience was enriched by the presenting of different views on parametric design techniques.

As a result, several physical models were designed and then assembled with the use of laser and CNC cutting. One of them was a gently curved, parametric organic tower panelized with hexagonal shapes. Such collaborative exercise was an important part of the experience, as it made it easier to understand how virtual project becomes a physical architectural object.

Krystyna Januszkiewicz

### **On digital space, and more** pp. 48-55



Space is a fundamental issue, both for the design methodology and the strategies adopted in the design. Digital Media, which offered synthetic creative work environments to the designer, offered a new medium of space design articulation.

Some aspects on cyber-physical space are presented in order to explain what the structure of space is and what makes it recognizable. It is also explained in what way the topology describes the structure of space, paying attention to the topological transformations and their potential in designing architecture. Digital design space and dynamics of movement are considered as well - from the simplest transformations performed by the designer, to complex animations. From the space of the curves of kappa-tau and its vector structure to the space parametrics. This space is important because there may arise an infinite number of similar to each other geometric objects, manifestation of previously prepared patterns of the dimensional variability, and patterns of relationships and activities which are mutually interdependent. Then, the attention is focused on NURBS curves and surfaces, which are particularly attractive to designers due to the easy handling of the shape, as well as the interactive manipulation of control points. At the end, the concepts of forming in digital spaces based on the basic information technology assumptions were listed.

Paweł Buck

**On animation in architecture** pp. 56-62

Greg Lynn's experimentation



Computer science revolution of the 90s gave a whole new range of tools and possibilities to architects. Designers started to experiment with virtual transformable three-dimensional environments. It resulted in a breakthrough in architectural design process which became more complex and offered an opportunity to design more innovative and technologically advanced architecture. Greg Lynn - American architect, visionary, academic lecturer and promoter of dynamically conceived architecture was one of the pioneers in combining architecture design with digital environment. In the mid-90s Lynn started designing architectural forms which he could freely and dynamically transform using animation software dedicated to film industry. Lynn regarded animation not as a motion but as the evolution of form and a set of shaping forces. Thanks to those early digital experiments Lynn created the new type of architectural forms which he called blobs. Early but important examples of designs in which Lynn used animation software and key frames features to generate architecture forms was competition project of *Port Authority Triple Bridge Gateway* (1994) and a series of experiments for theoretical *Embryological House* project (1997).

**International Interior Design Biennale** pp.72-75

**Krakow 2012**

(ed.)



International Interior Design Biennale took place in Cracow, in Bunkier Sztuki between 8<sup>th</sup> and 25<sup>th</sup> March 2012, and it was inspired and organized by Fine Art Academy in Cracow. One of the key events was 'Cities and Gardens' conference, which hosted guests and speakers from Poland and other European countries. The key question posed by the participants was 'How does contemporary architecture define the space for living and relations of inhabitants with their surroundings'.

'W+apartment' exhibition presented the best entries for student design competition, where the main subject was how to deal with modern dilemmas of designing architectural urban interiors. The exhibition presented printed works as well as multimedia screenings.

The exhibition and the conference were accompanied by three special installations: *Wymiary Tradycji/2012 Wymiary Przestrzeni* (1912 Dimensions of tradition/2012 Dimensions of space) - prepared by Tomasz Wesołowski, Wojciech Kapela and Piotr Noga, *Kopuła geodezyjna* (Geodesic Dome) prepared by Tomasz Wójcik, and *Przestrzeń Rozwiązań* (Space of Solutions). Space of Solutions is a conversion of numerical parameters to visual geometrical features shown in the form of 3D cloud designed and built by Magdalena Jurkowska and Michał Piasecki, consisting of 3D printed objects hanging in space.



Robert Majkut Design

**PKO Bank Polski Private Banking** pp. 80-83

Robert Majkut Design studio in cooperation with PKO Bank Polski developed a project for private banking which was offered to a selected group of the Bank's clients.

The designer's task was to create a concept of interior design corresponding to the prestigious offer of the Bank which would be consistent with the previously elaborated visual identification

of PKO BP Private Banking. The result is a unique banking institution providing its customers with security, discretion and best quality of service. The first branch of PKO BP Private Banking was developed by Robert Majkut Design studio as a pilot project.

Krystyna Januszkiewicz

**Fish In The Garden Vanke Qingyuan, Chiny** pp. 84-87

L + Y Design, Atlanta, USA



Lorenc + Yoo Design, Fish In The Garden, Vanke development, Guangzhou, China *Fish In The Garden* is a project by China's largest real estate developer Vanke. It features retail, hotel, clubhouse and residential spaces, including high-end villas. The team developed overall project branding, wayfinding signage, entry features, and site sculpture featuring fish scales, organic shapes and modern forms.

Lorenc+Yoo created an emblematic logo for Fish In The Garden, combining a fish in motion with a large leaf. In many cases, the designers sheathed the logo in bronze coloration to add a rustic, country character to assist with the illusion that residents have escaped the hustle and bustle of urban life. Modern sign fittings then contrast subtly with the worn appearance.

The centerpiece of the project is an enormous fountain, visible immediately when a visitor enters the property. The highlight of the fountain is a large sculpture of eight fish crossing paths in the air. These bronze sculptures convey motion, and dramatic lighting adds to their dynamism. In Chinese culture, eight is an auspicious number, so the sculpture not only adds to visual appeal and branding but also communicates luck, safety, and prosperity to those who visit and reside there. A particular design challenge was the need to integrate both Chinese and English text on all informational pieces. The final design allows signage to feature both languages seamlessly and without the appearance that one was added as an afterthought. This modern, international community is accessible to speakers of both languages.

Paweł Rubinowicz

**Architecture of Music** pp. 88-89

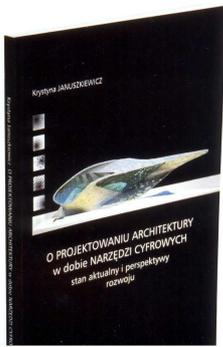
from Gallery *FORMA*

West Pomeranian University of Technology in Szczecin



How can you show music or hear architecture? In March 2012 at Architects' Gallery Forma at the West Pomeranian University of Technology under the auspices of the National Museum in Szczecin the exhibition was organized by Aleksandra Satkiewicz-Parczewska titled *Architecture of Music – Music of Architecture*. Professor Aleksandra Satkiewicz-Parczewska conducts research on identifying the relationship between music and architecture, which is reflected in her scientific publications and books. She also explores the of subject teaching architecture and in her own artistic creativity. The exhibition consists of students works made under her supervision, as well as her own most recent installations in glass to the music of Marek Jasinski, Wojciech Kilar, and Wieslaw from Szamotuły. Reviewers of the exhibition were: Wojciech Hora from the University of Arts in Poznan and Ryszard Handke, rector of the Academy of Art in Szczecin.

More at: [www.forma.zut.edu.pl/muzyka\\_architektury.php](http://www.forma.zut.edu.pl/muzyka_architektury.php)



Polish book market pp. 92-93

Adam M. Szyski reviewed

### **On designing architecture in the age of digital tools.**

**Current status and development prospects** by Krystyna Januszkiewicz

Publishing House: Oficyna Wydawnicza Politechniki Wrocławskiej

The Polish market once again offers a unique position *On designing architecture in the era of digital tools* published by the Publishing House in Wrocław. The first edition disappeared instantly from bookstore shelves, as this book includes the issues which have not been undertaken in the country yet, concerning the theory and practice of architecture created with the use of digital design tools and fabrication. It is not only the review of the architecture created in the world in the twenty-first century, but also an indispensable compendium of knowledge necessary to understand the changes which are currently taking place in the design and theory of architecture, and which result from the influence and role of digital technologies.

The book consists of three parts that gradually familiarize the reader with the current state and indicate the direction of the development of architecture and tools actively supporting the design process.

The first part presents, in brief, the history of the development of the design tools, their logic of activity and the influence that digital technologies have on the development of concepts of space and space itself. Pointing to the role of synthetic spaces as a medium of design space articulation, the logic of the principles and computer processes was explained, which have a direct influence on the shaping of the form. The reader becomes familiar with the concepts based on the basic information technology principles that allow to model the form and study it in terms of environmental factors. The reader also gets acquainted with the relevant aspects of the association of digital design process with a numerically controlled process of manufacturing design elements and their assembly *in situ*.

What the new formal language of the architecture designed in digital spaces is, can be learned from the second part of the book. It explains what the role of space in the digital design is, and what the repercussions in the design and construction are. The space has never played a conceptual role in the architectural design. The new geometric solutions pave the way for exploration of new materials and *vice versa*. Freely formed virtual space imposes new technical solutions and materials that challenge the previous logic of thinking about the building. It is about a principle of combining the supporting structure and the surface into one tectonic element. Such structural "skin" implies new materials that will be able to maintain its continuity and will eliminate the system of additional supports. Also the results of the research carried out by the materials science in this scope were presented.

The third part of the book deals with the design of architecture focused on its environmental goals and sustainable development. The author presents here how to use digital technologies and techniques to achieve a higher level of functionality and environmental efficiency in architecture. Starting from the Fuller's designing concept, as Nature does, she uses the knowledge from other fields (biology, physics) in order to explain the principles of computer processes which imitate the natural form-shaping and adaptive processes. She shows how it is possible with the use of the digital methods and technology to design efficient and environmentally effective architectural forms. Today it is believed to constitute the development perspectives of architecture and design tools.

Therefore, this issue contributes to the current scientific research profile of the European countries and the U.S. involved in the improvement of the ecological condition of the world and fulfilling the expectations regarding the quality of life.

At the end, in the synthetic approach, the influence of the digital design tools on the conceptual side of architecture was presented, as compared with the standards being developed since the Renaissance and the Bauhaus teaching.

The book available on the publishing market *On designing architecture in the era of digital tools* deals with the issues vital to the design of architecture today; it is a time when technology and digital media are beginning to dominate in almost all spheres of human activity. This is the first in Poland compendium of knowledge regarding the theory and history of architecture created in cooperation with digital technologies. And also, this is the first in Poland presentation of the achievements of Buckminster Fuller (1895-1983) in the context of modern information technologies, scientific research and increasing awareness of the need to protect the Planet Earth, what makes a significant contribution to the state of research in the world. This book provides research tools necessary for architectural theory, extending its cognitive range, and sets a new approach.