

JOINT INTERDISCIPLINARY CONFERENCES
The 5th International Interdisciplinary Symposium
on Art/Science/Technology
MEDEA 2017

The 2nd International Symposium
on Legal Implications of Cyber Society
ISLICS 2017

The 2nd International Symposium
on Physics Technology and Art
PTA 2017

The 1st International Symposium
on Information Tools in Management
ITM 2017

Showcase of Polish Self-Edition Posters
and Invited International Artists
ROLLER POSTER / CRETE 2017

Exhibition of the Chair of Interior Architecture
of the Visual Arts Department of the Academy of Art in Szczecin
and Invited Guests
ARCH Inside / CRETE

1–8 September 2017
Heraklion, Crete

ABSTRACT BOOK

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Andreas Guskos, Jarosław Rybicki and Krzysztof W. Wojciechowski

TYPESETTING USING T_EX

BOP, www.bop.com.pl

TASK PUBLISHING 2017

GDAŃSK, POLAND

ISBN 978-83-947070-4-0

MEDEA 2017
FIFTH INTERNATIONAL SYMPOSIUM
ON ART/SCIENCE/TECHNOLOGY

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Design Concept in Architectural Space

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The paper discusses the design concept and communication by the design idea in the field of architectural, especially interior design. A deliberate message coming from the individual design decisions is one of the main issues of this research – by – design.

The observation is based on design projects which are clear references to a specific nature of their location and cultural heritage. The intention of the communication by design are interpretive attempts achieved by means of various forms of artistic expression. A definite narrative of the designed space is supposed to be to build up. The narrative which would render a new definition of the undertaken topics, but would also become a source of multi-facetted reflection.

The key in the search for new communicating structures and forms is an idea. Creative transformation of space involves the solution of issues of ideas, which should only be a pretext, or a starting point for more in-depth deliberations. All design activities that involve new values and ideas, indicating their essence and form, enable the description of modern space of life in a new manner. The sense of these places obtains a new dimension in the context of the created design concepts, which, referring to the multi-faceted space of creative inspirations, define the role of the places and the identity of their creators. While constructing new structures and their forms, choices are continuously made, involving a sense of conscious responsibility for the handling of space. In design, the multi-layered search for balance is also an attempt for creating a harmony in the space that surrounds us, where the order of space and the order of ideas are of equal importance.

The idea of the presented design projects is to create a widest range of architectural devices to broaden communication by the design world. Design is all about cognition, reflections, research into space which finally result in a clear message. Design reflects the coexistence and interactions between the space and the recipient.

Reflections on Symbiosis of Design, Research and Education

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Professional activity in the field of design should achieve a consciously planned cohesion. The practice of architectural design might be accompanied by experience gained from artistic and research endeavors. On the other hand, educational activity should be directed to teach students the way of space exploration by research by the design method.

Teaching activity represents a field which, for an architect and a designer, is a natural component of the design practice. There is a strong dependence between design practice and didactics, as the intertwining of these two forms of activity is almost inherent. Continuous improvement of design skills supports the teaching process, likewise, the design work draws ideas from the experience gained from teaching. Specific cognitive empathy towards space, the ability of quick reaction to arising problems and solution of interim design problems, all create values from working with students and directly, from implementation of artistic projects. A specific character of working with students compels intellectual discipline, analytical and alternative solutions of design problems, as well as objective evaluation at a simultaneous and individual approach towards the teaching subject and the student.

The scope of this paper is to demonstrate the relation between professional design practice, research and education which is the key to the development of the cognitive aspects, the improvement of an architectural idea and creation of an architectural form. The observation is based on selected design studios as well as on the artistic and research endeavors conducted for Interior Architecture students and researchers at two Polish universities: the Silesian University of Technology in Gliwice and the University of Arts in Poznań.

The modern world filled with global unification, superficiality of contacts, direct and easy-going relations between students and university teachers and their individual and creative nature, emphasizes the need of preserving identity, developing individual creative personality and a sense of belonging to a specific social group. The impact of education on design and research seems to effectively enrich these areas.

The Fight against Illicit Trafficking of Cultural Heritage in Cyber Society: Multifaceted Responses to a Complex Challenge

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In modern cyber society, computer and network-mediated communication have broadened the fields of application of digital and information technologies to an unprecedented extent. Progressive integration of digital technologies in all fields of human knowledge has contributed to the overall evolution of sciences.

With particular regard to the field of protection and enhancement of cultural heritage the applications of digital technologies are innumerable: from the collection and storage of data (archiving, digitalization of libraries, e-books, images, audio and video materials) to digital reproductions of original artworks for distant fruition and preservation of the originals, archaeological and anthropological research, restoration of antiquities and heritage conservation through three-dimensional laser scanning technology, digital tracking of artworks, art security systems, authentication technologies, etc.

In this paper I shall discuss the role of information and digital technologies in the context of the fight against illicit trafficking of cultural heritage which is a major challenge that still affects the art market worldwide.

The existing legal framework represented by the main legal instruments adopted by the international community will be sketched out, including both civil law and criminal law responses to illicit trafficking of cultural heritage. In this context the importance of issues of traceability in art transactions that are mostly paper-based, will be investigated along with other related issues such as digital tracking of artworks (digital passports), art security systems, authentication technologies, etc.

In the conclusion I will focus on the increasing role played by alternative solutions such as spontaneous restitution of illicitly imported artworks, arbitration and other forms of inter-state cooperation based on temporary exchanges of cultural property as new channels of circulation of artworks where digital technologies may find a new eligible field of application.

TecCOM Frame as a Tool for Technical Communicators

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The technical communicator is a relatively new profession. However, due to the specifics of developing new products and the need to use adequate media and communication methods, it requires integrating a wide range of interdisciplinary competences. Despite that, at the present time, in the labor market, the profession of the technical communicator, often described with the use of synonyms, such as Technical Writer, Technical Editor or Technical Author, is a profession with great prospects and opportunities for development and personalization of the individual career path.

TecCOM Frame is a tool developed under the Erasmus+ program by a project consortium coordinated by tekem Europe in Stuttgart, in cooperation with eight universities from different European countries. The article presents the concept of using TecCOM Frame as a common language for describing the competencies including skills, requirements, knowledge and qualifications for industries, professions and organizations in the field of technical communication. In particular, the use of TecCOM Frame should lead to changes in consciousness and create new opportunities for people with acquired competences to seek employment in various sectors of the economy. The

availability of TecCOM Frame will lead to increased training and education opportunities and increased employability, building career paths and seeking for better jobs by skilled workers. In addition, it can be used as a tool for managers and HR departments to create job profiles and personalized job descriptions for technical communicators.

Moreover, for technical communicators, TecCOM Frame is as a set of knowledge that should stimulate the development of innovation and creativity, providing the instruments to efficiently achieve the objectives of an organization operating in the global market and following the participatory principles.

Realistic Landscape, Synthetic Landscape and Subjective Landscape

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The article will present the result of my study on the landscape theme as one of the main themes in art. The historical evolution will be presented briefly indicating how landscapes have been changing over the centuries, from ancient to present times.

Furthermore, the interrelation between the art and the period when it was created, as well as its influence on art will be mentioned. It will be highlighted that after the invention of photography in the nineteenth century the form of image began to change to become much more abstract.

Finally, my subjective way of understanding the landscape will be expressed. The realistic landscape is some kind of a starting point for creating my graphic works. I have chosen the forms, rhythms and moods. My graphic works are some kind of individual and subjective memories of the journeys I have made, the places I have seen and the situations I have experienced.

“International Community” in the Jurisprudence of the International Court of Justice – an Important Legal Instrument Connecting the Court with the Developing Cyber Technology

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The International Court of Justice (ICJ) faces a lot of different legal problems, including those that are *expressis verbis* or indirectly connected with technologies, with special regard to new technologies. By that, ICJ creates some legal concepts according to the most important notions in the modern science of international law, taking into consideration that the Court serves a special role for what is beautifully called “international community”.

The modern international community has nowadays two main needs that set the direction of the future development of the public international law. The first need is peaceful settlement of international disputes, and the second (but equally important), the need to increase the efficacy of the rules of international law. The Court has made a significant contribution to the application of peaceful settlement of international disputes and it is tempting to look for its original concept of the notion “international community” in its jurisprudence. After all, new technologies are used by the modern international community.

In the article the author draws the substance of the ICJ’s concept of the international community on the basis of its jurisprudence and highlights the importance of its adequate understanding in public international law. The content, scope and meaning of this important notion sets the bottom line for the creation of clear, people-friendly and precise law of the new technologies.

Cyber Technology – Opportunity or Threat for the Development of Public Institutions

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Cyber security is the basis for the functioning of people and countries whose reality is dominated by the Internet. In the last decade the number of Internet users has grown to an enormous scale. In consequence, there are huge opportunities for the development of people, enterprises and businesses; the national borders and geographic distances do not play an important role any longer. However, serious dangers have emerged along with the unlimited opportunities. They concern political, economic and cultural decision makers not only in their home, region, country but the global policy as well. Searching for information is crucial at each of these levels and it has become a deciding factor in managing a modern state.

The article discusses three main issues concerning the understanding of interactions between human capabilities and computer systems and the role which they play in the formation and elimination of weak points in the workplace. First of all, the article examines cyberspace security systems, with the emphasis on the interaction between computer systems and people and organizations. Secondly, it analyses the problems of personnel, their training and promotion of security on the Web. The article indicates that such prepared staff is exceptional in terms of both technical and psychological requirements and that both dimensions must be considered to maintain their effective development. It is also important to consider the technological issues of the cyber security and the consequences of the evolving technologies for the interactions between people and computers that require security.

The debate on cyber security should not be carried out only from the perspective of technology. For a full understanding of the cyber threats it is necessary to review the opinions of lawyers, sociologists and political scientists to explain the overlapping processes both on the local and global scale. Hence, in order to reduce the risks to the lowest possible level we need to be aware that cyber security depends not only on technology but also on the human behavior and motivations.

The digital revolution has an impact on the functioning of most governments in the world and the security of businesses and citizens. The difficulty in the analysis of these processes is that they are of a very dynamic and complex nature. Yesterday's technologies and applications, today – as it often turns out – are no longer relevant and they are inadequate to the needs of their users. Science plays a great role here; it explains and helps to understand the processes. This perspective makes it possible to combine analysis of risks in the cyberspace with humanistic disciplines. The human side of cyber security includes such issues as resistance to the implementation of

security measures in order to examine the limits of human capabilities; this article tries to describe those problems.

Cyber attacks can come from anywhere in the world without incurring large costs on the part of the attackers. It is certainly the greatest challenge to the security and stability of institutions executing tasks in strategic areas of the state. However, companies or persons who are victims of cyber attacks usually do not provide information on this topic; thus, prevention of cyber security is hampered. Nowadays, vast majority of organisations are or will be at a risk from the cyberspace. It turns out that in many countries even democratic electoral rules can be broken as a result of misinformation that takes place in the cyberspace.

There are real concerns that cyber criminals will block not only computers but also other devices connected to the Internet, which we use every day. Thus, there can be a failure of mobile phones, TV sets, watches, sports bands or even medical devices to measure the level of glucose. The purpose of these actions is to demand ransom from owners of those devices. The recent cyber attacks by malicious software of the ransomware type such as “WannaCry” or “Petya” are an excellent illustration of what effects they can bring.

Attacks on the websites of major political and economic institutions have demonstrated once again that no one is immune to hackers whose actions are becoming more and more sophisticated. Public administration, financial systems, central energy networks have always been the target of hackers; firstly because of the value of the information that these institutions have, secondly because of the consequences that may arise as a result of malware. It seems that threats to the computer security will dominate today’s economic and social risks in the nearest future.

The impact of cyberspace is enormous because false identities can be created and trust without intrusion can be built. And it is not about attacking computers because they are only a tool, the ultimate goal is always the people.

Information that is collected by applications from all social networks, both in an individual and collective context (i.e. family, friends and colleagues of the victim) is an invaluable resource in the hands of the attackers because they can customize the attack to the individual. It is more than ever that information gives the power to steal valuable and personal data. Thus, it makes it possible to obtain the best kept secrets of state institutions or corporations. Understanding this phenomenon is of fundamental importance to explain why a company should more than ever pay attention to the confidentiality of personal data of their own staff. Studies show that most institutions are simply not aware of this or they do not want to talk about it.

The subject of the presented article is still relevant and valid. The dynamic processes taking place in the field of cyber security described in detail in this paper show how to use the psychological research to meet these challenges.

Manipulation Techniques on the Internet. How to Spot a Liar in Cyberspace? (Workshop)

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The workshop is designed to show threats posed for Internet users. The risk of loss of data, money, passwords from our account by an impersonating stranger is not just due to the technology. The psychology of the user is very important here. Too much trust, gullibility, lack of awareness, routine and inability to verify other users are the main causes of cybercrimes. The workshop aims to show common techniques for creating a false identity, manipulation, interviews, photos, which led many people to the loss of financial and personal assets.

The aim of the workshop is to look at the cyberspace and the dangers for the users from a different perspective. The multiplicity of topics allows knowing and understanding the contemporary and future challenges in this field. The workshop topics are targeted at people using the Internet as a tool for their work as well as those who treat technology as a form of entertainment. The subject of the workshop is complementary to the existing knowledge in the field of cyber security, and it is important as a material for lectures on the risks arising from the operation of the global computer network.

The global expansion of social networks (such as Facebook, Twitter); together with the growing network communication may lead to the situation that cyber technology will get out of control. Already, a lot of misinterpreted or intentionally forged information leads its own life and creates a fictional reality.

Stealing credit card details or identity, bank fraud, mass spam and blackmail are just a few examples of crimes offered by the cyberspace. Each device connected to the Internet is an opportunity for breaking in. A cyber attack is a relatively easy thing to do because there are no perfect programs. However, cyber attack is not always necessary to obtain, steal somebody's data. Usually it is a combination of two factors: the technical vulnerability and another man whose frustration, lack of motivation or excessive trust (combined with naivety) lead to the complicity of allowing access to confidential information. Nowadays, when more and more institutions provide their clients with greater online access, professional criminals are successfully using fishing techniques to steal data for impersonating any person or directly acquire illegal funding.

Most of the methods of counterfeiting use a form of technical fraud which is aimed at creating a link in the email or a false – but confusingly similar – website that leads the victim to a fraudulent organization. This type of theft is becoming more and more popular due to the ease with which the unsuspecting people often divulge personal

information to fraudsters, including credit card numbers, social security codes, names of family members, etc. There is also a real possibility that identity thieves can retrieve information through access to public records. After obtaining such information, scammers can use personal details to create fake accounts in the name of the victim, or to prevent the victim from accessing his/her own account.

The potential offered by the Internet in a variety of areas, such as communication and education is enormous. However, one must not forget about responsible use of the Internet. It is above all the duty of the parents which is unfortunately often neglected. Obviously, school, public administration and public services are also responsible for the security of using the Internet. Internet access control, restriction or a total ban on the use of new technologies are only half measures that do not produce the expected effects in terms of cyber security.

In order to ensure a certain degree of a sense of cyber security certain preventative measures should be taken; these include but are not limited to: firstly, compulsory education for children, parents and teachers in the field of safe use of the Internet; secondly, better exchange of information between security services and educational institutions, scientific and non-governmental organizations; thirdly, fast elimination of harmful contents from the cyberspace.

Public institutions acting in the field of education and security should conduct training programmes on the use of the Internet for teachers but not only as a teaching tool, but especially to use it responsibly and to respond in case of possible cyber fraud. However, the school alone, without cooperation with both the world of science and uniformed sources will not be able to cope with this task. Studies conducted in the West Pomeranian region in late 2016 and in 2017 show that many educational institutions do not see or do not want to see the problem. It is revealed only at the time of a tragedy. The best example is the game where young people make challenges (controversial tasks) to one another and it often ends tragically. Therefore, it seems that innovation in the field of education in cyber security will appear only when the emphasis is placed on anticipating and preventing possible tragedies rather than responding to the already occurring events.

Elements of cyber security should be introduced to the curriculum. Children need to know what the privacy of personal data is and they must learn to move safely in the cyberspace. This effort should be supplemented with specific plans of education for adults. It turns out that adults often do not see the risk, for example, of publishing photos. It may seem an exaggerated measure of prevention; however, if the person in the photo is marked in the space of a third person, this material will allow the identification of this person. What is more, the photo can circulate in the network without any control of its first owners; it may end up in the hands of someone who will use it for illegal purposes.

We must not forget that when we use the Internet we leave traces on forums, social networks, etc. This situation is used not only by trade organizations for profiling sales offerings but also by criminals to identify selected people.

Prevention and protection are the fundamental values, however, to build cyber security we need a comprehensive approach focused on the knowledge and commitment of many institutions. Currently, if the knowledge of cyber security is to respond to the needs of the environment, it must maintain cooperation with the state security services.

Information Logistics

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It is not so easy to clearly define the notion of logistics. We can find many different definitions which sometimes define logistics as a process and sometimes as a science. For sure logistics is connected with movement and information.

What is information? We can easily consider information as a product which is very valuable. There are many corporations which make a lot of money only by selling information. Nowadays, access to information is easier because of the Internet. If there is a market of information, then it needs logistics. This means that we can divide information into valuable (business meaning) and worthless.

Information logistics is a new concept and a new step for logistics. This is another example that logistics, as many other sciences, is under constant development.

Gene, Meme, Techne Art, Nature and Information

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The first layer and the first advanced carrier of information in living organisms is *Gene*. The second layer that has emerged in more advanced living systems is *Meme* and that is the layer that hosts our conscious existence. There is a third layer predicted to be coming which is called *AI* or *Technological Singularity*. Let us call the carrier of *AI* *Techne*. *Meme* is in a similar relation to *Gene* as *Techne* will be to *Meme*. We are considering making a safe switch to *Techne* that will allow *Meme* to control *Techne* and will not let it become independent. Is there a similar switch that allows *Gene* to be bound to *Meme*?

In my presentation I will showcase art and design in which nature and information processing are playing a major role. The approach to the creation process will be in general collecting and/or processing existing objects/information found in the environment or initiating processes that are producing information and collecting the results by some assumed criteria.

The presentation will include my projects: *Some components of nature* (video art), *3D structures in the space of information* (3D art), *Aheilos Region 9* (virtual world art), *You will not enter twice into the same river – today, yesterday, tomorrow. Impression on the variability of form in time* (spatial video installation), *Stones from Greek shores* (found objects), *Iconophagos|Stones* (algorithmic process/computer application).

Magnetism – Technology – Art

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One of the greatest mysteries of nature is related to magnetism. In the mythical times in Magnesia (Magic Islet) there lived a Shepherd named Magic who saw the line of the magnetic field force on a rainy day. The concept of the magnetic field force lines was introduced in the nineteenth century with the objective to describe the quantitative effects. Every citizen who saw Magic doing the science had the opportunity to see a show of this phenomenon. It was sought for a long time to explain what magnetism was and it met divine worship [1]. A huge amount of work was associated with the magical properties, e.g. [2-4]. Magnets can not only produce strong attraction but also strong repulsion. There appear magical illusions such as levitation which seem to break the laws of physics. Most of the technological solutions are directly and indirectly associated with magnetic interactions. Living biological organisms have a huge number of complexes related to magnetic ions. For example, a 70 kg man has about 4 g of iron complexes and 1 g of copper complexes. If we consider Avogadro's number we are aware of the enormous amount of magnetic complexes. The Earth's magnetic field protects us from the charged particles of energy.

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EPR Study of TiO₂:GO

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Nanocomposites were prepared in different conditions. Very complicated EPR spectra were observed at low temperature. The magnetic resonance spectra of magnetic aggregates were recorded at room temperature. The EPR spectra of free radicals showed an essential change at low temperatures depending on the condition of preparation that influences the catalytic efficiency.

Street Art in the Emotional Space of the City. New Aesthetics in Visual and Social Communication

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The study attempts to diagnose the condition of the widely understood art in the city space, the so-called street art – murals, graffiti, stencil art, sticker art – in the context of its emotional, visual, and social value, on the example of selected artistic activities, interviews with inhabitants [1] and artists [2].

In the modern world, the image becomes the primary medium of artistic and information transmission. At the opposite poles, street art and large-format ads compete with each other, placed almost everywhere in the city space, creating a visual chaos.

Based on statements of inhabitants and street art artists, a picture of an extremely complex phenomenon emerges, arising from different motives, differently affecting the audience.

The conclusions show how the phenomenon of street art has put down roots in Polish cities and has changed their face, how it has influenced the aesthetic views of the inhabitants, their emotions and sense of identity with the place.

The unfettered joy of creation and the sincerity of artistic expression lie at the heart of street art provoking reflections on life and art. It is also a manifestation of an extreme individualism, the opposition and rebellion against the mechanisms that govern the modern society, so often it is perceived as visual violence and acts of vandalism. However, for a long time, attempts have been made to commercialize and control this art, exhibit it in galleries, make it dependent on state institutions. Will this allow the continued unfettered development of free art in a public and independent gallery which is the space of the city?

However, cooperation with urban institutions becomes important, sometimes necessary, when this art can become an antidote to the ugliness and grayness of the city, an element that contributes to the climate of the city, establishing a conscious dialogue with the architecture, space, and history of the place.

In the second part of the study, street art is considered in the context of the aesthetic needs of the inhabitants presented in their statements and on the example of the creativity of the local population in places of their residence in the neglected 19th-century districts of Szczecin which have been documented by me.

On the example of my own photographs – diptychs showing images of Szczecin on the opposing poles of accepted aesthetic concepts – I try to define the beauty and ugliness in the “new aesthetics” of the city.

I present reflections on the locality of the place and the impact on our emotions based on the concept of PUNCTUM OF A PLACE taken from the reflections on Roland Barthes’ emotional photography [3].

The locality of the place is also a very diverse cross-section of the inhabitants – spectators condemned to receiving the art of the city every day. Should they influence the shaping of the space in which they live? Is it possible at all? Is there a place in this art for dialogue, not only with the inhabitants but also with architects, sociologists, historians?

In the face of such a complex phenomenon of street art, the answer to this question will only be possible by way of its own artistic experiments in a broad – artistic, sociological and architectural – aspect.

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Form – Function – Emotion in Architectural Space Design

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Contemporary architecture is not only an attempt of fulfilling particular needs, not only a sign of a particular historical epoch, but it is also an attempt of foreseeing futures which follow the contemporary times. The obvious changes in philosophy of a contemporary man, being a result of radical changes in the basic means of social and organisational communication as well as in information exchange, will definitely become one of the basic factors of a change in thinking about the sense of architecture, its basic functions and about the ways of fulfilling the needs of contemporary and future societies, including to a large extent, the needs of an emotional, artistic, spiritual nature, or in general terms – the needs of a high order.

From this point of view, questions concerning space planning where there is a relation between architecture being a composition of space forms and interpretation of this space by a viewer – the user in an individual and emotional way, seem to be extremely interesting. The research and perfecting the relation of form – function – emotion in planning, as well as perceiving, feeling and interpreting, seem to be the basis of education of architects and interior designers.

During the conference speech, real objects as well as architectural and interior design projects – study and diploma projects, which have been carried out at Polish Art Universities at project departments, will be analysed. The occurrence of the problem posed in the title as a conscious creative act will be analysed.

Trojan War in the Caucasus

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The lecture will be devoted to a fragment of the monumental Ossetian epic on Narts, traditionally entitled *Narty kadžytæ* (*Songs of the Narts*). This fragment, the song entitled *Soslan Beduxajy k^wyd ærxasta* (*When Soslan married Beduxa*), belongs to the epic cycle of Soslan, the great hero with a steel body. Indeed, the Ossetian *kadæg* is a unique local version of the Trojan legend, made up by Ossetian ancestors: Scythians, Sarmatians and Alans.

The lecture uncovers the parallels between the Homeric and Ossetian versions and it is an attempt to track the way of the borrowing, supposing that it is a borrowing at all.

Wetting Phenomena in Porous Carbons

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The lecture will be devoted to wetting and adsorption which are crucial phenomena in many life, science and engineering areas, such as capillary effects, coatings, microfluidics, surface physics and chemistry, molecular separation/filtration, energy generation and storage, gas sensing, etc. Wetting results from the interplay of cohesive and adhesive forces, thus, it determines the strength of interaction of a liquid and a solid surface. The adsorbate/adsorbent (sometimes called host-guest) interactions strongly affect both materials forming the interface and are well described with the microscopic wetting parameter α . We would like to present various effects that occur within the carbon nanomaterials due to the adsorption of various guest molecules.

Acknowledgements

This work was supported by the National Center of Science, Grant No: DEC-2013/09/B/ST4/03711

Quantum Filtration – Entropy Filters

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Thermo-mechanical and mechano-caloric effects are observed in liquid He_4 below the lambda transition – $T_\lambda = 2.18$ K. These quantum effects can appear when an entropy filter separates normal and superfluid components. The entropy of superfluid helium is equal to zero, so this component decides about the behavior of helium below T_λ . A two-component phenomenological model gives the explanation for the normal component as the energy excitations which appear on the superfluid background. He_4 below lambda transition is treated as the quantum Bose-Einstein condensate.

The role of entropy in the quantum condensation phenomenon will be explained and the possible separation of helium isotopes will be discussed.

Role of Manager in Contemporary Organizations

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The paper presents issues concerning analysis of multifunctional actions of managers employed in organizations, in various structures and at different levels of professional, social and administrative responsibility. It includes the results of scientific findings based on the analysis of the literature on the subject. The author's interpretations are based on the non-participating observation and performed actions in which the author himself was involved. The descriptions use the author's own experiences, comprising the activity in the area of economic entities, many years of work in administrative areas and extensive social work. In the paper, the Author describes forms of activity and roles that managers play in a wide range of organizations. Particular attention has been paid to the intellectual aspect, especially of senior managers. Personality traits that managers leading international teams should possess have been characterized in the paper. Most important predispositions that contemporary managers should be equipped with have been presented in the form of a table. The Author especially stresses the qualities of managers for different hierarchical levels of the post that they occupy.

Empathy in Design.
Examples of using empathy in design.
From graphic design to User Centered Design (UCD)

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Empathy is at the very heart of today's thinking about design. It drives artists and designers to action. Sometimes it is an impulse, a thought expressed a poster, sometimes it is a part of a complex cognitive process necessary to design interaction.

Software Sizing Methods for Estimating Cost of Social Networking Applications

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Using the power of the Internet social networks are playing a significant role in more and more professional and private lives of people. They are a fundamental part of the business models of many companies, providing financial benefits and enhancing the image. Without doubt, a great number of businesses are considering the use of SNS (Social Network Sites) in their day-to-day operations. As it is to be financed externally, the cost of such a project should be known before launching.

Hence, the question arises, how to estimate the labour intensity needed to create software for building a social network. The article answers this question, presenting several methods which can be employed to design the evaluation of creating or implementing this kind of solutions. The article reviews software estimation methods, determining how suitable they are for the assessment of the labour intensity applied to develop an SNS.

Information System for Evaluating Financial Condition of Enterprises

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Today's entrepreneur runs a business in an extremely dynamic environment. The rapid development of science and technology and the increasing competition are the reason why knowledge and ongoing monitoring of assets and the financial condition of an enterprise are an extremely important factor in business management. The financial condition and the assets provide much important information about the company's past and present economic and financial situation and efficiency, development opportunities and potential hazards. The lack of a proper insight or the lack of a prompt response to the changes in the company's micro-and macro-environment may lead to inaccurate or late decisions resulting in a deterioration in the company's finances or even a threat to its continuation. Financial analysis is a tool to assess the financial condition of the company. The researched issues are related to:

- the financial result and the related profitability (efficiency) of the business, i.e. the ability to generate profit;
- analysis of sales and costs, i.e. analysis of financial liquidity;
- analysis of the company's assets and sources of funding, i.e. analysis of the financial position and independence;
- analysis of the company's growth and financial position.

It is difficult to overestimate the role of a correctly prepared financial analysis. It is used in the management process and in the process of assessing the business credibility by different stakeholders. A properly prepared and described analysis performs the following functions:

- provides the management of the enterprise with information that enables proper shaping of the asset and capital structure;
- helps to rationalize settlements and cash flows;
- enables ongoing assessment of the financial position and economic efficiency of the business;
- allows monitoring and controlling the costs, revenues, and financial performance.

The aim of the article is to develop a concept of an information system to monitor the current financial condition of a company.

Virtual Mock-Up as an Alternative Presentation of Architectural Ruins

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Reconstructions, both virtual, theoretical and real, physical, perform cultural and educational tasks which convey knowledge about historic monuments. They are based on the same source materials, i.e. plans, photographs, historical information and, in the absence of other materials, also on comparative analysis with similar architectural objects from a given period, the conclusions of which do not always have to be true. It sometimes happens that a rebuilt object is largely a work of imagination or imitation of a historical object made with modern materials, which makes it no less a virtual creation than a reconstruction generated by a computer. It is worth considering whether the image of history in our minds is also not a similar virtual projection created and transmitted to us by historiographers and popularizers of ancient history. Thanks to the interaction with the environment and the interesting presentation of architectural reconstruction it is possible to introduce completely new qualities to historical education. Thus, immersing in a virtual space with virtual reality goggles gives us in a way an opportunity to travel in time, and broaden our knowledge of the past times.

Physics, Technology and Art

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Physics, Technology and Art form three interrelated branches of our civilization, Physics stands at the basis of science which derives from the instinct of curiosity, Art relies on beauty and Technology on survival. Since the conference takes place on the island of Crete where excavation resurfaced a prehistoric civilization, the Minoan, the presentation begins with Archeology and its specialties in common with Physics. Finally, the presentation ends with Science versus Technology.

COEXISTANCE: Thinking of the Future of Printmaking...

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I wonder which communication and transmission tools allow the contemporary man to make the most characteristic statement from the point of view of civilization development. Another way in which the media let us describe the world in the most complete way?

Every epoch presents its own image in its own peculiar way, preferring these media which characterize it the best. Art may be a sign of acceptance of the world or an act of disagreement, a form of contestation. However, it is only this art which bravely derives from the technological development, uses new ideas, as at the time of Leonardo de Vinci and Michael Angelo, and then at the time of the impressionists and the cubists, that becomes the memory of its times, in the major part at least.

These days, it may sound as a banality, we live in a world subjected to the guidelines or even the terror of the digital picture. The transmission which was to serve us – has made us its slaves. The Internet, the computer, the mobile phone, changing our imagination about the outer world, have interfered with the inner human life so deeply that they have accidentally made a structural reconstruction of the human brain. The mind has been functioning differently and the graphic art has changed, as well.

The Influence of Physicochemical Factors of the Activating Environment on the Motility and Parameters of Seminal Movement of Fish from Selected Systematic Groups of Salmon (*Salmo salar*)

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The environmental conditions during external fish fertilization have a significant effect on the spermatozoan motility (MOT) and the fertilization ability. Even in the same family of fish, spermatozoa might differ in the sensitivity to ions present in an external medium. Elucidation of such differences within a species would help to understand the spermatozoan biology and to determine the external conditions that would optimize spermatozoan MOT and successful fertilization.

The aim of the study was to investigate the differentiation of the sperm sensitivity to osmolality, sodium, potassium, calcium, hydride, and pH in the aquatic environment by investigating their effect on sperm activation.

The object of the study was salmon (*Salmo salar*) from the family *Salicosaurus* originating from an aquarium. The average length of the subject's body was 46.3 cm.

The research material was the semen of fish taken from 5–6 specimens of each fish species. The semen was collected into plastic containers by massaging the abdominal part of the fish. The semen from 4 specimens was of high quality with the sperm mobility above 80%.

The computer-assisted sperm analysis (CASA) system was used.

Films were recorded at intervals of 20–30 s: 10, 30, 50, 70, 90, 120, 150, 180, 210, 240 s, to complete the motion phase of the sperm $VAP > 20 \mu\text{ms}^{-1}$. Nine traffic parameters were analyzed: MOT – motility (%) VCL – curvilinear velocity (μms^{-1}) VSL – straight line velocity (μms^{-1}) VAP – velocity average path (μms^{-1}) LIN – linearity (%) STR – straightness (%) ALH – amplitude of lateral head displacement (μm) BCF – beat cross frequency (Hz)

The spermatozoa of salmonellae (*Salmo salar*) fish have different sensitivity to the tested factors.

Salmon spermatozoa exhibit a similar sensitivity to the tested factors except for calcium ions. A sodium ion solution which exceeds the osmotic pressure of the plasma semen activates the salmon sperm to move. Salmon spermatozoa are activated to a solution containing up to 240 mM NaCl. The glucose solution, sucrose above the osmotic pressure plasma semen activates the salmon sperm to move. Salmon spermatozoa are activated by solutions containing up to 480 mM and 440 mM of glucose and sucrose,

respectively. Salmon spermatozoa are susceptible to an increase in calcium ions in the activation environment. An environment with a concentration of more than 30 mM Ca^{2+} does not induce sperm activation in this species. The spermatozoa of the fish species tested are activated by solutions in the pH range of 4–13. The optimum traction parameters are salmon spermatozoa at pH 9. In buffered distilled water, the time to move the salmon sperm is 55 ± 5.8 s. The total velocity (VCL) achieved by salmon spermatozoa at 10 s after activation was $120.9 \pm 11.4 \mu\text{ms}^{-1}$ and $112.4 \pm 11.2 \mu\text{ms}^{-1}$, respectively.

Graphic Interface in Public Spaces

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Graphic Interface in Public Spaces is an attempt to show possible ways of using interactive design as a tool facilitating access to data and functioning of contemporary buildings, especially museums. The discussed buildings are hi-tech designed public spaces where the historical values are still present but shown in completely new, up-to-date exhibition designs. Divisions and methods of appliance are mentioned in detail in order to explain the essence of the "interface" meaning all elements of a system. They differ depending on the type of the device used – smartphones, tablets, electronic tables, screen walls – access to information through their graphic interface and ways of supplying data depends on the particular method of electronic publishing. The aim of the presentation is not to create a typical compendium or collection of recommendations and prescriptions but rather a practical guide showing possible problems and issues concerning chosen interactive public spaces in Europe.

Alchemy: its Yesterday and Today

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For centuries a number of men of science and learning spent their lives in the practice of alchemy, searching for a way to change ordinary metals into gold. Why did they try? Did any of them succeed? We know that some alchemists today continue the old tradition and the age-old quest. Will they succeed?

Formulation of References and Meanings in Renovated Interiors Based on Selected Examples

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In the twentieth century there was quite consistent semantic doctrine of how to design a given type of interior. Today we can talk about anti-semantics in the creation of contemporary interior architecture. We talk about the distortion of semantic references, and in extreme cases, the lack of references in general. Hence, I think it is important to re-introduce the legibility of references and meanings in the design of interiors.

My analysis will be carried out on three objects:

- The 18th century Palace in Obrzycko (Investor: University of Adam Mickiewicz – Poznań)
- The Senate Hall in Collegium Minus (Investor: University of Adam Mickiewicz – Poznań)
- The Palace in Jankowice adapted for the needs of the School of Music and the Commune Cultural Center (Investor: Tarnowo Podgórne District)

In all three cases, I will try to prove that it is possible to create multi-layered contemporary meanings in relation to history and other contexts (cultural, symbolic, landscape).

Gamification of BYOD e-guides

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The paper discusses the opportunities created by applying gamification to BYOD e-guides and how they can be used in a way most beneficial to tourist attraction operators.

Gamification is “the use of game-design and game psychology in non-game settings to engage the target audience and motivate specific behaviors” which has been proven in multiple applications (see e.g. <http://yukaichou.com> for a list of over 90 success stories).

It has obvious application in tourism. To provide a short example, visitors can mark what they have spotted (e.g., animals, places, cultural artifacts, maybe also live events), thus building a virtual collection of spotted objects. As a result, motivation is increased to travel further and to less popular places to enrich the collection. Obviously, the real-world gamification scheme can significantly enrich the player’s experience by, e.g., providing various point rewards depending on how easy it is to spot a given object, levels denoting the player’s overall progress, public leaderboards (who is the best spotter), challenges for spotting a certain object at a certain place or time for bonus points, giving virtual badges for spotting specific sets of objects, and so on.

It should be noted how a smart design of the gamification rules provides the tourist attraction managers with a way to shape the tourist demand to some extent, i.e. setting high rewards for coming at an unpopular time or to unpopular events. As the rewards are virtual by default, the cost of such promotional actions is near to zero (apart from the service maintenance cost).

There is also a vast informational and educational potential within a gamification scheme, as the player looking for possible opportunities to collect points, learns about natural and cultural heritage sites, animals or cultural artifacts about which he/she would not know otherwise.

Gamification and BYOD e-guides go along well together because the device stays with the visitor after he/she leaves a tourist site, so the “game” can be played even for years and it is not limited to a single visit or a single place. This would not be possible with anonymous e-guides rented at a tourist site.

There is also synergy in integrating these two elements with visitor data analysis. As the fact of picking some point of interest using a BYOD guide can be registered at a server, precise statistics of visitors turning up at specific POIs can be obtained with a crucial context for visitor data analysis, i.e. identification of the same visitor coming to various locations or returning to the same attraction.

Secularisation of Sacred Buildings as an Opportunity/Threat to the Development of Modern Civilization

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The history of architecture is a diary describing the achievements and development of millennial civilizations. A special place in the process of organizing and managing the space has been played by the buildings of religious worship as a permanent and important element of the interpersonal community. Over the centuries there have been periods of great development of architecture dominated by sacred architecture in a special way, but also there have been periods of stagnation in the field of sacred architecture or desecralization of already existing sacred buildings.

The purpose of this study is to find a fundamental answer to the question of the extent to which the secularization of religious cult buildings influences the development of modern civilization. Undoubtedly, the present system of Principleism is being reevaluated, which simultaneously affects all areas of human life, including the architecture that shapes the space, also architecture in the religious sense. The crisis of faith which is observable in various European countries leads to significant changes in worldviews that manifest themselves, *inter alia*, in the transformation of sacred buildings into secular ones.

The issue of the desecration of sacred buildings will be discussed in the perspective of specific examples of the secularization of selected objects of religious worship. The exemplification of the transformation of former temples into cultural, utility or entertainment facilities raises the question of the dignity of architectural identity. The planned change of the intended purpose of sacred spaces is still controversial, and the terminological change that defines these buildings merely as a space of human activity only makes it easier for artistic or commercial institutions to acquire church monuments. One should look for a proper solution to the phenomenon of desecralization that shapes the contemporary urban planning. Therefore, the question is whether the secularization of sacred buildings is a failure of church architecture or whether it is a challenge to this architecture. Will the contemporary *hedonistic religiosity* dominate forever the sphere of human spirituality also in the sphere of architecture?

Process of Private Space Shaping – Identity of Place and Architecture of Emotions. Transformable Living Unit – Customization and Shaping of Building Tectonics to Best Suit Human Needs and Space Condition

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In the process of private space shaping, I can see four directions that should be considered by the designer when designing a space with a minimum surface area – the human needs and motives, i.e. a factor that motivates a person to be active; furniture modules which can offer many functions; materials or rather their differentiation helping in their perception and influence on a person; and finally mobility with transformation, i.e. the possibility to introduce changes, adaptations.

Module – multifunctionality

The evolution of psychophysical and sociological human needs has the greatest impact on the function of the dwelling and its individual zones. Therefore, we should allow recipients of the minimum housing area to choose among the modules that perform various functions, as well as to transform them. Since everybody is different, I assume that also the needs concerning the lifestyle, work and rest are different. Transformation and awareness that functions can be changed when such need arises give the user a sense of comfort. This facility, as well as the selection of needed modules, will allow users to perform synthesis and analysis of what they expect from the apartment. It will prompt them to think about their needs. The size of a given space does not depend on the multiplicity of functions contained therein, but on the type of the user needs. By enabling the change of the arrangement, combinatorics and composition I leave it to the recipient to decide about the destination of the space. Each module will be designed universally, taking into account ergonomics and meeting the needs of users. By that I also allow the user to invent or add new values to multifunctional modules. Moreover, the user who creates his or her own set of furniture designs a new spatial and compositional value, and is able to match the set of furniture to his or her needs, and change their layout with their transformation.

Materials – perception

Human senses – as the main determinant of the perception of the interior – the knowledge and the way in which they function, as well as learning about the fields in which they operate, are an important condition for the design and dimensioning of all spatial forms in the living area. The factor that is fundamental in designing living

units is the natural reception of the interior, which is done through visual, tactile and auditory stimuli. This is related to the most common type of social activity. To understand all forms of spatial and human perception and the reception of dimensions, we need to learn about senses, which is a necessary condition for planning the living area. Organization and interpretation of sensory impressions in order to understand and learn about the environment become very important as the factors of subjective perception of the interior. Perception is a conscious sensory response to the external stimulus, the way of reacting and receiving sensations. A sense of awareness of the surroundings is related to imagination and intelligence. Human perceptual systems enable the reception of the living space as well as the materials used in it, such as furniture or walls. Their sensory reception allows us to understand the response mechanisms and reactions to the stimuli. Sensory perception, selecting, organizing and interpreting are stages in the process of perception. It is not just about the colors or the lack of them, but also about the structure and texture of the object. The user should intuitively sense the purpose of the module thanks to the materials used and their colors.

Mobility – transformation

The functional layout of an apartment should change with the development, age and life of users, transforming their structure to meet the needs and preferences of the people living there. A proper layout of the apartment allows far-reaching changes in the functional layout as well as their transformation in order to meet the needs of the family. Transformation takes place within the space of the unit, it is the individual modules and the possibility of their transformation that shape the interior of the dwelling unit. The ability to swap, shift or unfold a given module gives the prospect of a surplus surface. I have in mind the reserve of living space that the recipient of such an apartment can at any moment obtain in an easy and inexpensive way. In situations where the reserve space has been used and we feel overwhelmed in the apartment, we can change this by changing individual modules. In this context, it is reasonable to define the fundamentals of creating a residential module. In my opinion, looking from the perspective of interior architecture, the size of the module should be a reference to the furnishing of the dwelling, namely the accepted and widespread standards and dimensions of furniture, kitchenware and other interior fittings, which generally take 60 cm of width as the basis for the dimensions and its multiples. Using such multiples of the dimension allows creating modules based on this principle, which on the one hand allows unifying the living space, but on the other hand, what is more important, allows freely adjusting it.

Human needs – motives

The human relation to the living space can be considered on two levels; purely utilitarian, where it serves as a means of satisfying the daily needs that I have described extensively in the second chapter of the work, and in terms of emotional sphere where the dwelling is a micro-environment for the user and is shaped according to his or her preferences, tastes, and likes, becoming a part of the personality and an important element of the person's life. The role of housing is the reciprocal proportion of these two meanings; it is a variable and depends on the degree of fulfilling the user's needs with respect to the dwelling. With minimal living space, the options of flexibility, adjustability to human needs, and changeability create a desirable direction in the process of shaping living spaces. In today's world, we can observe a tendency to change the

structure of the character and function of the interior into one that will allow the user to quickly transform it and thus change its functions in a relatively short time without any extra work. This is due to the fast pace of life, lack of time and frequent changes in human needs during the day. Within the minimal living space, where space, or rather its lack, plays an important role, it is obvious that every surface should be designed with special respect in order to be useful. When designing microflats, we should prevent situations when given space is misused and consequently wasted. The change in the aspect of space gives its users a prospect of modifications. It gives the user not only the sense of security in the form of the option of finding another way of using the space, but also a sense of a sensible use of space.

The subtle relation between human behavior and the surrounding spatial arrangement of the interiors and processes that take place between them influences the later reception of the space in which we live. Not only does space have a significant impact on us, but also the location and innovative architectural solutions consciously affect recipients and the various ways of their behavior, and the transformation of individual modules gives the user the option to introduce any adaptation within the living space.

Painting as a Pattern of Forces. Study from Nature – Construction of Figuration

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The first and most general impression evoked by the shape of things, or their arrangement, is fundamental to the way in which we think about the form, about the painting. In this image, a healthy eye and the internal dynamics of the creator are to experience structural qualities which constitute a kind of a visual background. Rudolf Arnheim states that in the latest theory of perception one cannot identify seeing with simply going from details to completeness. However, it is obvious that the general structural qualities become the first and basic data of perception. The first look at a figure or any other spatial arrangement (casting an eye over it), uncovers the simplest, most basic vectors which influence the general impression of the character of a complete work and the perception of its shape resulting from convergence and overlapping of vectors. This stage is about seeing completeness without details. It does not involve thinking in the abstract, but rather seeing through tensions of forces, through vectors determining the character of the form and composition.

The Controversial Sale of the Louvre Brand

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The Agreement signed in 2007 between France and the United Arab Emirates relates to the creation of a universal museum in Abu Dhabi, (called the Louvre Abu Dhabi) from its construction to the constitution of its collections. This is a non-standard agreement in the field of cultural cooperation.

The author intends to draw attention to the fact that this agreement should be assessed in broad terms: legal, diplomatic, cultural, artistic and economic. The analysis of the issue was based on international and national legal acts, printed documents and press releases as well as legal and artistic comments.

Perfect auxetics

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Present technology requires new materials of unusual properties. Auxetics, which expand transversally when stretched [1], constitute a rapidly growing class of such materials [2,3]. Perfect auxetics can change their size but preserve their shape at deformations. The recent progress in developing and studying models of perfect auxetics is the subject of the present lecture.

Acknowledgements

Part of the simulations discussed in this lecture was performed at the Poznań Supercomputing and Networking Center.

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ARCH Inside, the First International Exhibition of Architecture Designs, Interior Design and Decorative Arts

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In September 2017, members of the academic staff of the Visual Art Department of the Academy of Art in Szczecin – Dominika Zawojksa, MA (curator and originator of the event), Katarzyna Utecht, PhD (curator), Paweł Machomet MA (curator) have the great pleasure to present the ARCH Inside Exhibition for the first time.

ARCH Inside will be the exhibition of academic staff members as well as students of not only the Visual Art Department of the Academy of Art in Szczecin, but also the Art University in Poznań, the Fine Art Academy in Wrocław and the Silesian Institute of Technology.

We would like this event to become a cyclic exhibition which will widely present projects created at the most important Artistic Universities in our country and abroad. We hope that we will be able to show architecture designs, interior designs and decorative arts in the broad sense of the word, as well as photographs related to architecture and space.

The works which are going to be presented during the exhibition are often conceptual prospect designs created by students or lecturers, as well as photographs taken in Poland and abroad.

The first edition of ARCH Inside 2017 is going to be presented during Medea 2017, the 5th International Interdisciplinary Symposium of Art, Science and Technology, in Heraklion, Crete.

Is There Standardization in Designing Small Mobile or Temporary Public Facility Units?

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At first the question should be answered what public facility units are and whether it is necessary to implement standards for these kinds of objects. A unit as an institution serves to satisfy social needs, the needs of users of specific units. The examples of public facility facilities on which that I would like to focus include in particular hotels, ambulance stations, cafés and food service facilities, open-air theaters or cinemas.

A public facility is a term explained in the following way: “something (such as a hospital) that is built, installed, or established to serve a particular purpose”, (Merriam-Webster).

In explaining the concept of small public facility units, not only those mobile or temporary, it is often the aspect of modularity of such facilities that is raised. A module in architecture or art is sometimes called a traditional unit of measure, which, on the other hand, represents the size of a specific element. A module marks proportions, but also the relationship of elements in a whole arrangement which may relate not only to architecture but also for example to sculpture or painting. The term of modularity is also associated with a long-term search for ideal proportions.

Discussing the subject of modules in reference to art in the broad sense of the word, we should also mention the so called structural module used in modern construction. It is applied in order to assess the size of elements and materials, in Poland the size is 10 cm, however, it is 30 cm for reinforced concrete. At this point we may notice some kind of an aspect of standardization because adjustment of particular elements designed to fit the generally accepted module is notably important when large-size prefabricated construction elements are used, but also joining them together in subsequent stages.

The implementation of 30 cm modules in construction has allowed developing a framework construction technique which is used in designing light structures as well as mobile and temporary public facility units. Frame constructions have allowed developing such kinds of units in construction due to the cost as well as the ease of transport, installation and dismantling.

Interactivity in Designing for Children

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Architecture can be one of the elements supporting the psychophysical development of children. Interactivity applied in architectural designing responds to the challenges of contemporary pedagogy. Learning through action is the main element that uses the latest educational theories. Devices based on new technologies or objects designed in a way that encourages creative interaction are ideally suited to current pedagogical trends that challenge the eradication of boredom in learning and the use of fun for imparting information and developing skills. The knowledge and skills acquired in this way become a deliberate, positive “side effect” of play. The design of educational spaces for children (that will be the subject of the speech) should have the same characteristics and goals. The dependence of the functional program of the pre-school and school buildings on the pedagogical system implemented in the facility will be also discussed. The existing buildings, interiors and examples of art in which interactive solutions and interactive systems used in architectural objects have been implemented will be presented in the lecture. The subject matter of the speech will cover:

- interactive floors
- interactive boards and tables
- interactive walls
- touch screens
- indoor playgrounds

The discussed subject will focus not only on the use of the existing interactive systems in the architecture, but also on creating interactive interiors. Such designing, based on a combination of knowledge and research from a variety of fields, can create a new quality of architectural space that better responds to today’s challenges and more effectively stimulates the psychophysical development of a human being, so important in adolescence. The interdisciplinarity, enabling the exchange of ideas between various scientific specializations, significantly enhances the quality of design. One of the many areas of knowledge that can be used to design children’s learning spaces is:

- pedagogy
- sociology
- cognitive science
- anthropology

- medicine
- architecture and engineering (new constructions, systems, building technologies and materials)
- new technologies
- ergonomics

The speech will discuss the types of interiors and architectural solutions and their impact on particular areas related to the psychophysical development of the child, i.e.:

- cognitive development (intelligence, thinking, perception, attention, memory, executive processes)
- sensory development (senses, sensory integration)
- psychological development (needs, character, personality, emotions, soul, ethics, soft skills, social relationships)
- motor development (fine and gross motor skills)

Considering in detail the interactivity and interdisciplinarity in designing children's learning spaces, the scope and nature of the impact of architectural solutions on the multifaceted development of children and the implementation of architectural education through the presence of children in the inspirational space will be demonstrated in the speech.

Technology and Design Aspects of Graphical User Interface (GUI) Design

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The presentation entitled *Technology and Design Aspects of Graphical User Interface (GUI) Design* is a condensed description of major design and technology issues in the design of a graphical user interface.

The presentation focuses on issues related to the communication between the user and the interface in various interface environments and consequently the methods of designing the structure and appearance of the GUI.

For this reason, the first point of the presentation is related to the most important parameters of devices which can used interfaces, such as the screen parameters (size, aspect ratio, resolution, colour depth) and the control techniques (mouse, touch, gesture, device orientation and location). The next point contains a description of the most important structures of mobile applications.

With regard to the above, the presentation includes historical trends in the UI design, the current trends and the future potential of progress in the user-device communication (like wearable devices and the Augmented Reality).

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