2019

INTERNATIONAL CONFERENCE ON

ARCHITECTURE

&

CIVIL ENGINEERING

"EDUCATION - INTEGRATION AND SUSTAINABLE DEVELOPMENT"

Proceedings of ICACE 2019

1969 - 2019

HANOI ARCHITECTURAL UNIVERSITY - ESTABLISHMENT AND DEVELOPMENT

HANOI 9/2019

MINISTRY OF EDUCATION & TRAINING MINISTRY OF CONSTRUCTION

HANOI ARCHITECTURAL UNIVERSITY

INTERNATIONAL CONFERENCE ON

ARCHITECTURE AND CIVIL ENGINEERING 2019

(ICACE 2019)

"EDUCATION - INTEGRATION AND SUSTAINABLE DEVELOPMENT"

(The 50th Anniversary of the Establishment of Hanoi Architectural University)

Note: You can download the conference proceedings including full papers revised by scan this special code using a QR reader on smart phone or using this link *http://hau.edu.vn/icace-2019_c1006/*. The texts of the various papers in the conference proceedings were set from individual files submitted by each of the authors concerned.

Hanoi 9/2019

Preface

Hanoi Architectural University (HAU) is one of the leading universities in the field of architecture and civil engineering in Vietnam. Established at 17th September 1969, the university was 50 years old this year. The International Conference on Architecture and Civil Engineering 2019 (ICACE 2019) is a scientific event which held on 16th September 2019 to celebrate the 50th anniversary of in Hanoi Architectural University. The conference has a good opportunity for academic & research exchanges as well as networking activities among Vietnamese & international researchers in the field of architecture and civil engineering.

The present proceedings contain more than 170 papers abstracts that have been revised properly. With the title “Education - Integration & Sustainable Development”, the conference many themes covered in 4 sessions: (i) Architecture, Urban & Rural Planning; (ii) Material, Structure, Construction Technology & Construction inspection; (iii) Urban Infrastructure & Environmental Engineering Systems - Sustainable Development Tendency for Future Cities and (iv) Economy & Urban Development Management. Reviewing papers of the ICACE 2019 was challenging process that relied on the goodwill of experts involved in the field. We would like to thank all reviewers for their time and efforts in reviewing the documents.

Finally, we would like to thanks to all of those who have dedicated their constant support and countless time to bring the conference into success. The ICACE 2019 proceedings are our credit to a large group of people and It serves as a great gift to the 50th anniversary of HAU. We believe It provides an opportunity to share knowledge and experiences on architecture and civil engineering fields and will inspire us better in the present and future.

Hanoi, September 2019

Assoc. Prof. Dr. Arch. Le Quan, Rector of HAU

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September 16th, 2019

INTERNATIONAL CONFERENCE ON ARCHITECTURE AND CIVIL ENGINEERING (ICACE 2019)

"EDUCATION - INTERGRATION & SUSTAINABLE DEVELOPMENT"

Venue: Room U401 - Hanoi Architecture University (HAU), km 10, Nguyen Trai street, Thanh Xuan district, Hanoi, Vietnam.

Time: 8h00- 12:30 , 16th September 2019 (Monday)

Time	Conference program	Address
8h00-8h15	Registration	
8h15-8h30	Introduction	
8h30 – 8h40	Opening Speech	Assoc. Prof. Le Quan – Rector of Hanoi Architectural University
8h40-8h50	Speech	Representative from Ministry of Construction
	Keynote presentation	
8h50-9h05	**Keynote 1**: What about the people from the regional development projects for spatial justice	Prof. So Jin Kwang. *Gachon University - Republic of Korea.*
9h05-9h20	**Keynote 2**: Pore structure change in nano-scale of mortar due to temperature	Dr. Quy Xuan Nguyen. *Hanoi Architectural University –Vietnam;* Prof. Yukio Hama. *Muroran Institute of Technology - Japan*
9h20-9h35	**Keynote 3**: Modern Education System of Civil Engineering in Russia. For example Moscow Sfate University of Civil Engineering	Prof. Gogina Elena. *Moscow state university of civil engineering - Russian Federation*
9h35-9h50	Panel discussion	
9h50-10h15	Group photo & Coffee break	
10h15-12h30	**Parallel session (1-4)**	
12h30-13h30	Lunch Party	

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1. Assoc. Prof. Dr. Arch. Le Quan, Rector of Hanoi Architectural University, Director of Organizing committee
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16. Assoc. Prof. Dr. Gogina E. S (Moscow State University of Civil Engineering, Russian Federation)
17. Prof. Dr. So Jin Kwang (Gachon University, Korea)

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11. Prof. Dr. So Jin Kwang (Gachon University, Korea)

1. ARCHITECTURAL AND URBAN PLANNING TRAINING OF VIETNAM IN THE CONTEXT OF INTERNATIONAL INTEGRATION

Assoc.Prof.Dr. Lê Quân

Rector of Hanoi Architecture University (HAU)

In recent years, Vietnam is one of the countries which has impressive development speed with deeper and wider multilateral and multi-dimensional international integration steps in all fields. In the process of industrialization and modernization of the country, the construction industry has made important steps to make Vietnam become a country with the highest urbanization rate in Southeast Asia with 828 cities with the urbanization rate reached nearly 38% (as of early 2019).

In addition, rural areas also have a lot of prosperity with the new rural construction programs. In particular, according to the government's orientation, the goal of urbanization by 2025 is to reach 52 million people, accounting for 50% of the population living in urban areas, together with the total number of urban centers nationwide reaching the number of 1,000. In this context, the architecture and urban planning sector also has strong development and international integration in the role of making strategies for economic spatial development as well as organizing spatial and regional planning throughout the country. The social environment in our country has many rapid and progressive changes with the increasing influence of the 4.0 revolution amongst strong linkage of global economies. The rapid changes of society also pose great challenges for the human resource training environment to meet the labor market especially in the field of planning and architecture.

The process of international integration has a strong and comprehensive impact on the higher education system. The trend of globalization and integration creates good conditions for countries to exploit the common intellectual capital of all humanity. The strong development of information technology has formed the "Information Society" in which the development is based on the growth of the knowledge source and the sensitivity of the information system. This highlights the important role of education in general and higher education in particular in maintaining and developing the supply of intellectual property.

Architecture - Planning has closed association between economic conditions, socio - culture and science, technology and ecological environment. In the process of industrialization and modernization of the country, science and technology have become a driving force of development to create a knowledge economy. In terms of cultural environment, we need to create opportunities for dialogue between cultures and civilizations of countries, regions and consider it as a positive element of globalization to protect cultural diversity. With that context, students of architecture - planning and generations of architects can expand exchanges, participate in the conservation and promotion of cultural identities in the development integration among countries in the region. and the world. Full awareness of the characteristics of the training majors, the HAU always strives to build and develop international cooperation, associate in training and scientific research towards creating opportunities for students to have enough abilities and capacities to attend international training courses.

Recognizing the challenges as well as the development opportunities of the training environment that need to adapt to social conditions during the period of international

integration, HAU has also built up development strategies toward comprehensive innovation to effectively implement the Action Program of the Construction Industry in implementing the Government's Resolution No. 31/NQ-CP dated May 13, 2014 on the Government's Action Plan implementing Resolution No. 22-NQ/TW of April 10, 2013 of the Central Executive Committee on international integration.

In the development strategy, HAU has determined that expanding the environment and labor market for graduates to countries in the region is an important factor. This establishment affects a wide range of issues in implementing and other action programs

HAU has actively renovated the content, methods and forms of training, associating the training content of the university with the social practice and international training environment, quickly developing many new training majors, meet the development requirements of the construction industry and the country, making an important contribution to affirming the prestige, brand and position as the leading university in training architects and civil engineers throughout the country and ensuring international quality assurance. So far, Hanoi Architectural University has more than 20 undergraduate majors and many joint programs taught in English and Frence as well as implementation of joint postgraduate programs biteral certificate with some international prestigious universities in the world. Training Program in French at HAU has been implemented synchronously at all 3 levels from undergraduate - master and doctorate with group of INSA. universities of the Republic of France and is highly appreciated by the French Ministry of Culture This is a the first comprehensive program of architecture and planning training using French was developed outside the borders of France. HAU has successfully implemented student exchange programs with many universities in the region and around the world such as the US, Japan, Korea, Australia, Singapore, Thailand... and successfully organized many international workshops with the participation of many students from many other international universities...

HAU has been conducting training and retraining to improve professional qualifications, foreign languages and information technology for managers, scientific and technological officials of agencies, organizations and localities;

HAU has carrying out scientific projects at national, ministry and lower level such as: agencies, organizations and localities and university.

HAU has cooperating with many universities, research institutes, domestic agencies and organizations, and international organizations on training, scientific research and technology transfer ; HAU has organized the application of results in training and scientific research to production labor activities and scientific services with the participation of many international experts.

Hanoi Architectural University has always advocated synchronous and parallel development of training development with scientific research and technology transfer and has achieved many positive results.

The scientific and technological staff has,step by step, improved in quantity and quality, which is a decisive factor in improving the quality of training and scientific research.

With the achievements achieved in training and scientific research - technology transfer, HAU has built a synchronous development strategy in the coming period to promote the tradition of

50 years of establishment and development in the fields of architecture, construction, urban and rural planning.

With the goal of building a team of lecturers and science and technology cadres reaching the regional level, while attracting talents in teaching and scientific research, HAU has set out the main tasks of university development up to 2030, in which, researching and developing science and technology of construction industry is a premise for training innovation and development with international level lecturers

Building scientific and technology potentials: Strengthening the capacity of researching and developing science and technology staff towards the international market:

- Classification of scientific staff based on their professional qualifications, foreign languages, research capacities and carrying out scientific tasks to make a reasonable plan to improve and train quality of staff by the year or by period; encourage self-training. For research institutes and enterprises in the university: Strengthening scientific and technology production and service facilities in the university, consolidating and developing the relationship between science and technology research with active integrated environment.

- Promote science and technology activities: Implement scientific and technological topics at all levels: actively participate in registering and implementing scientific topics at national level, sector and city levels as well as other scientific research projects at the university level with the participation of international technical experts. These researches focus on major science and technology programs such as the National Target Program adapting to climate change, environmental protection, energy saving, green building design, and new technologies in architecture - urban and rural planning.

- Promote the publication of scientific research results: Promote writing scientific articles for prestigious scientific journals in Vietnam and other countries, participate in scientific conferences, promote protection copyright…

- Innovate scientific and technological information activities: organized periodically of international scientific conferences and seminars, announcing new scientific and technological results; Modernizing the library: Increasing Vietnamese and foreign books and journals; Increasing electronic devices for the exploitation of scientific and technological information; Enhancing internal materials (theses, program systems, lectures, presentation reports, conference proceedings, seminars,) in English and French to introduce and exchange information. Strengthen the dissemination of scientific and technological research results and link data with universities in the region and in the world.

- Promote technology transfer activities: Develop regulations on transferring scientific research results of training and production; regulations on training and production support for science and technology research and student practices; Expand cooperation and technology transfer with international organizations; Applying modern science and technology to the study of architecture, urban and rural planning, protection and embellishment of architectural heritage - a planning involving international experts and exchange. Information through international conferences.

- Promote international cooperation on science and technology: Strengthen cooperation on training and science and technology with local and international organizations. Diversify types of international cooperation including scientific research, technology transfer, seminars for professional exchange and information exchange; Actively participate in professional associations, regional and international professional associations.

- Promote student science research: Define the role and position of scientific research

work of students in science and technology activities of the university; Integrating the scientific research activities of students with 4 contents of the university's project on science and technology development; Diversifying science and technology research types for students, creating a mechanism to closely coordinate students with international scientific researchers who are l experts in the university's joint training programs; Create force to attract international students in the region and the world to study at HAU

- Promote basic research on Vietnam's tropical architecture, build a database of architecture, geography, climate, socio-culture, serving the development of modern and traditional Vietnamese architecture. This is also a very new point that attracts the participation of many international scholars in the field of architecture and planning.

- Study theories on new rural construction and development: planning, housing, public buildings, agricultural production building, infrastructure and environment; Construction and urban development: housing, public works, production works, urban transport, environment, energy saving; Application of new materials, structures and modern construction technologies, suitable to Vietnamese conditions; Housing constructed by industrial methods; Advanced engineering of underground construction with the participation and exchange of experience from many international experts.

Innovate a comprehensive higher education environment towards a high-level international integration environment is a development strategy of HAU to create premise and great motivation for the future of generations of students with sufficient qualities, knowledge and skills for an international working environment.

The university has been mobilizing all teaching staff and students to synchronously implement solutions with stable and sustainable steps suitable to the socio-economic and cultural environment Vietnam and the process of diverse and multilateral international integration in the era of the global 4.0 technology revolution.

SESSION 1:

ARCHITECTURE, URBAN AND RURAL PLANNING

2. HOUSING FOR LOW-INCOMES: THE LESSONS FROM SOUTH EAST ASIA COUNTRIES AND OVER THE WORLD

Ngo Thi Kim Dung[(1)]

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Abstract: Housing for low-income people is an urgent issue in several countries around the world, including Vietnam. Over the past few years, some developed countries (ie the United States, Canada, Singapore, China) have achieved considerable success in developing low-income housing.

This paper will explore the strategies that have led to the success of these countries in dealing with low-income housing and discuss the potential for lessons learned in Vietnam in the near future.

Keywords: Housing, low-income, experience, strategies.

3. SYMBIOTIC RELATIONS BETWEEN PEOPLE AND URBAN AUTHORITIES TO DEVELOP SMART CITIES

Pham Trong Thuat[(1)]

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Abstract: Smart cities are becoming a trend for all developing and developing cities. The Government of Vietnam in 2018 has announced the goal of building 30 smart cities across the country and by 2020 first gives at least 3 smart cities and clearly states that they are choosing smart development as a concept fundamentals for Vietnam's urban growth as a way of promoting economic development in a smart way to avoid creating cities that do not meet expectations with people.

Accordingly, when developing smart urban models, it needs to be planned to consider the relationship between the needs and aspirations of the people about urban services and the direction of city development with the policy decisions of urban authorities. The development of a smart city should consider the international experience of symbiotic relations between people and the city government. Research scientists from different countries show many different approaches for people to access important issues of the city. The purpose of the study is to define a smart city approach based on the consideration of the relationship between people and urban authorities. Having international experience, it is necessary to improve the process of community participation in building a model of intelligent adaptive city model with characteristics of Vietnam.

Keywords: smart city, ICT, sustainable development, big data.

4. VAN DON ECONOMIC ZONE AND SPACE APPROACH SOLUTIONS

Tạ Thu Trang[1],Nguyễn Thị Thanh Hòa [2]

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Abstract: Like many other developing countries, Vietnam has been building many economic zones in every part of the country including Van Don one. Van Don is a part of the overall social economic development project of Quang Ninh province which is contributing to create a future image of green tourism, clean industry and high technology for the province. Synchronous development between technical and social infrastructure is a huge challenge for the planning of economic zones development, especially the planning of economic zones is still a new concept. First, we need to understand what the definition of economic zone, green urban area, green tourism is or just areas of urban forms that are planted with many trees and what the architects plan to create sustainable economic zones. This article will make more approaches to a specific economic zone for those who work on planning and especially for students majoring in this field.

Keywords: Economic zone, green urban area, green tourism, clean industry.

5. ORGANIZING PUBLIC SPACE AS A QUALITY ENHANCEMENT FACTOR LIVING IN NEW URBAN AREAS OF HANOI

Pham Trong Thuat[1]

[1]Assoc. Prof. Dr, Lecturer, Architecture Faculty, Hanoi Architectural University, Email: <thuat@hau.edu.vn>

Abstract: This article focus on the role of public space in new urban areas of Hanoi on the base of the needs of entertaining and socializing of the inhabitants, as well as the infrastructure requirements, and the space for enhancing mental health is a major factor in developing these new urban areas in Hanoi in recent times. The concept of public space is established to calculate in the process of designing new urban areas. The role of public spaces is assessed, classified, and on that basis, building requirements of the process of creating space of new urban areas. The article mentions the results of a study devoted to evaluating people's satisfaction in the new Van Quan urban area - a typical new urban area built in the early years of the 2000s of Hanoi that includes about public space. Recommendations to improve the quality of life people's mental health in new urban areas through the expansion and improvement of the public space system of Van Quan new urban area.

Keywords: new urban area; public space; urban planning; Hanoi.

6. DEVELOPING VIETNAM'S AGRICULTURAL TOURISM IN ASSOCIATION WITH THE NEW RURAL PLANNING

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Abstract: Agricultural tourism development has been contributing to income generation, job creation, promoting the development of related industries and sectors, contributing to economic restructuring and improving social life. At the same time, preserve and promote the national cultural values, protect the environment, gradually become a spearhead economic sector of the country.

In addition to these positive aspects, the development of agricultural tourism in our country still has many limited issues, no depth, lack of sustainability, lack of methodical practices to attract and retain tourists. ...

In the context of increasing agricultural land area, agricultural production must be restructured, AGRICULTURAL TOURISM needs to be considered as a solution to build new Rural areas, not only to reduce poverty. poor, but also to diversify income for farmers, while preserving and promoting traditional cultural values, preserving ecological landscape environment.

Keywords: Agricultural Tourism, New Rural Planning, ecological landscape environment

7. BUILDING NEW CENTERS OF VNPOST LOGISTICSS IN BIG CITIES IN VIETNAM

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Abstract: This study assesses the status of the use, needs, characteristics and construction planning of Logistics Centers of VNPost. Combined with the reference of Japan Post's experience in developing Logistics centers to suggest some solutions when designing and constructing VNPost Logistics centers in major cities in Vietnam. The study also proposes a number of construction criteria, operational organization principles, and appropriate total ground solutions.

Currently, Vietnam has not yet issued a system of technical regulations on the requirements of the design of a logistics center for postal and delivery activities. This study will create the initial basis for building a system of standards and standards for similar works in the coming period.

Keywords: postal, logistics, logistics center, and VNpost.

8. RONG COMMUNAL HOUSE IN KON TUM - ARCHITECTURAL FEATURES AND CONSERVATION ORIENTATIONS

Khuat Tan Hung [(1)]

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Abstracts: Sedang is one of the ethnic groups with largest population in Kon Tum. Along with unique customs and practices expressed in lifestyle, costumes, epics, rituals, festivals etc. Sedang people also possess unique architecture, most notably the Rong house. This can be considered as a communal house symbolizing the material and spiritual life of the local people, which best represents their beliefs and social customs.

This paper analyzes the architectural features of Sedang Rong communal house, and assesses the risks that this type of house is facing, then proposes conservation orientations of them in the continuous development process of Sedang community life.

Keywords: Rong house, Sedang, architectural features, conservation, community.

9. SATELLITE IMAGES AND "GREEN" INDICATORS IN URBAN AREAS

Dominique LAFFLY[(1)],Le Thi Minh Phuong [(2)]

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Abstract: Recently, urban areas in developing country are increasingly expanding and have a very high urbanization rate. This causes a lot of problems affecting the environment, traffic and air and water pollution, waste management..The city as well as the authorities cannot control these harmful issues.To monitor and control this process, high-resolution remote sensing images are the best data source to provide information to support urban analysis managers.The green and blue frame (GBF) observed from space, indicator of sustainable development of modern cities.The spatial distribution of urban parks and water points, their continuity and connection to the overall pattern, their evolution over time (creation, maintenance and / or disappearance) are all indicators of a "green".

Keywords: remote sensing, green indicator, urban, sustainable city.

10. CHANGES IN THE SPATIAL STRUCTURE OF VILLAGESIN NHUE GREEN BELT, HANOI CITY

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Abstract: The Hanoi master plan to 2030 and vision to 2050 approved in 2011 clearly shows the green spaces including green corridor, Nhue river green belt and green wedges. In which, Nhue river green belt is a buffer zone between the expanded inner city with the expanded urban area in the south of the Hong River, playing the role of an ecological space for Hanoi capital. Unlike the green belt of other countries around the world, Nhue River Green Belt not only covers undeveloped, forestry and agriculture lands but also existing villages. The study of changes in the spatial structure of existing villages is important in conserving the unique character of rural communities that might otherwise be absorbed by expanding suburbs, in line with the objectives of The Hanoi master plan to 2030 and vision to 2050.

Keywords: Greenbelt of the Nhue river, village

11. PROPOSED NETWORK OF FOOD AND AGRICULTURAL PRODUCTS WHOLESALE MARKETS SUITABLE FOR HANOI URBAN

Tran Nhat Khoi [(1)]

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Abstract: Wholesale market for Food and agricultural products is a kind of wholesale market with specific elements, networked activities, closely related to urban development.Hanoi is in the process of strong urbanization, the network of wholesale markets for Food and agricultural products has not kept pace with the development of urban clusters. Policies on planning of wholesale markets for Food and agricultural products are not uniform and commensurate, not suitable with reality, few market projects operate effectively. Based on the hierarchy/ classification and the influencing factors, the study proposes a network of wholesale markets for Food and agricultural products which could be suitable for Hanoi urban, multi-directional urban access, ensuring hierarchical interconnection, which correlates with the existing system.

Keywords: Wholesale markets, Food and agricultural products, Architecture, Market network, Hanoi.

12. INTEGRATING EXERCISES IN THE PRACTICE OF ARCHITECTURAL PHYSICS SUBJECT INTO SPECIALIZED PROJECTS

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Abstract: Architectural physics subject is a study of the elements of Humid environment, the sound environment and lighting environment of architectural components from indoor spaces to outside the house, from single building to group of building. The architectural physics subject have been studied for a long time. However, the method and the unrealistic approach cause the results to be still limited. Therefore, integrating exercises in the practice of architectural physics into specialized projects is essential.

Keywords: Architectural physics, Humid environment, specialized projects, sound environment, lighting environment.

13. INNOVATING GRADUATION OF ARCHITECTURE FROM THE RESULT OF STUDENT'S GREEN ARCHITECTURE AWARDS

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Email:<hmnguyen68@gmail.com> ; [2] PhD Student ; [3] PhD Student.

Abstracts: Continuing the Vietnam Green Building Week from 2010 - 2015 organized by Institute of Tropical Architecture - Hanoi Architectural University, at the end of September 2017 – 2018, Vietnam Green Urban Research and Development Institute (VIGURD) was organizing Vietnam Green Building Week in Hanoi in cooperation with International Finance Corporation (IFC) and Vietnam Green Building Council (VGBC).

One of the important activities of Vietnam Green Building Week is the Student's Green Architecture Award. This is a useful playground for final year students of Universities of Architecture across the country and a number of international schools. This is an opportunity for future architects - putting green ideas into their designs, demonstrating creativity and keeping pace with the current development trend in the world. This event has attracted a lot of attention from the community, press media agencies and especially organizations and individuals operating in the field of training.

However, through the awards in 2017 and 2018, can see many incomprehensive limitations of students' knowledge of green buildings. Many proposal solutions are collected from documents without deep understanding, so it is very clumsy in expression. This shows the gaps in providing knowledge about sustainability, green architecture, energy saving in architecture - construction training.Drawings from award results can be small contributions to the current architecture training programs in Vietnam.

Keywords: Green Building, sustainability, green architecture, energy saving, construction training

14. NEW METHOD OF ESTIMATING NATURAL INDOOR LIGHTING WITH SIDE LIGHTING

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Abstract: The proposed minimum daylight factor in the national standard TCXD 29-1991 is not suitable for the project, when the windows are located on two adjacent walls. This article describes how to determine the average daylight factor of side lighting and how to use the permanent supplementary artificial lighting in places, where there is not enough natural light.

Keywords: Daylight Factor, No Sky line

15. EVALUATION OF THERMAL COMFORT USING FANGER'S PMV CRITERION AND NEUTRAL TEMPERATURE FOR VIETNAM'S HUMID TROPICAL CLIMATE

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Abstract: The aim of this paper is to describe existing PMV model and neutral temperature concerned with thermal comfort. The PMV model was a better predictor in air-conditioned buildings than naturally ventilated ones, in part because of the influence of outdoor temperature, and opportunities for adaptation. The neutral temperature used to establish Thermal Comfort Zone on the Psychrometric Chart not only for Hanoi but also for other province in Vietnam.

Keywords: Thermal comfort; Hot and humid climate; Air movement effect.

16. E-LEARNING AND SOLUTIONS OF EDUCATION OF FINE ARTS IN VIETNAM NOWADAYS

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Abstract: Today, the process of globalization raises many forms of non-traditional education. These forms of education have transcended space, time and types of borders. The development of information technology (IT) in the context of industrial revolution 4.0 has transformed education and arts education in Vietnam. The paper discusses the role, importance and application of e-learning in innovating arts teaching and learning methods in Vietnam, nowadays. The paper also uses interdisciplinary approaches such as education, art, science and technology to give out solutions to innovate teaching programs, teaching methods... by e-learning implementation at universities in Vietnam.

Keywords: industrial revolution 4.0, VR environment, arts education, e-learning; teaching methods.

17. PROGRAM FOR TRAINING ARCHITECTURE FITNESS WITH DIGITAL TECHNOLOGY PERIOD

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Abstracts: The article reflects on the strong impacts and influences of Digital Technology in the field of architecture in general and architect training in particular. From the analysis of the effects of Digital Technology, the paper has raised a number of ways to exploit the application of digital technology in the field of architecture and training architects around the world are applying thereby proposing some solutions in training architects in Vietnam to meet the requirements of the Digital Technology era. The solutions are: Adjusting the content of the program and training methods; Invest in building virtual reality and augmented reality rooms; Change the way of teaching and learning.

Keywords: Digital technology (Digital technology), Architectural training, Architect, Building information model (BIM), Virtual reality (VR), Augmented reality (Augmented Reality - AR).

18. GREEN ARCHITECTURE - GREEN BUILDING WITH TEACHING FOR ARCHITECTURE STUDENTS

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Abstract: From the 90s of the 20th century, the concept of Green architecture has been proposed and gradually become a trend of developing a sustainable architecture in the world. From a few buildings, nowadays the Architects have so far designed and experimented diverse and plentiful in many different types of works. However, for architecture students the awareness / knowledge is not really full of green architecture or green buildings, so many projects are simply forms, hitting eyesight. Following the trend of naming projects attached to the word "Green " has not solved the nature problems of Green Architecture.

For architecture students to truly design projects that meet the Green Architecture criteria, they need to add new knowledge, how to deal with climate and environment, and know how to create innovative results. Research and advanced technology to improve energy efficiency. For undergraduate education, the awareness requirements on Green Architecture only stop at knowing and understanding the basic principles to apply in architectural design projects.

Keywords: Green architecture, green buildings, environment, architecture trends, architecture student training.

19. DIFFERENT ANGLES OF GREEN HOUSING VALUES IN VIETNAM

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Abstract: Green housing in Vietnam is always considered as a market with great potential and development opportunities. But there are still many constraints and obstacles, with the greatest challenge being the perceived benefits from the participants. This makes the current housing not reach the value that should have been.

Developing a green housing project needs to start with a balance of values from a variety of stakeholders. Not only the interests of investors but the interests of residents, urban communities ... should also be concerned.

Keywords: Green housing, urban communities.

20. ORGANIZATION OF COHESIVE SPACE BETWEEN THE NEW URBAN AREA AND THE URBANIZED VILLAGE AT HANOI CAPITAL

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Abstract: In urban areas in Viet Nam in general and in Hanoi in particular, the urbanization usually associates with the spatial transformation from rural into urban area. The most obvious phenomenon is the existence together of new urban area along with existing villages. These signs have narrowed down the gap between the rural and urban, created the unclear boundaries, and lead to many conflicts in economic, social organization, and environment. Currently, planning research is lacking synchronous of two objects: the urbanized village and the new urban area. Thus leading to the change of functional landuse out of control of construction plan, the transformation of urban space and landscape, mainly in the boundary area between the new urban area and the urbanized village. Consequence is the emergence of uncontrolled space, spontaneous development, and many conflicts in socio- economy. In fact, this area plays an important role. For the villager, this brings many benefits for economic activities. For the community in the new urban area, this bring the vitality by daily service activities, attracts the concentration of population. Therefore, recognizing the urbanization in the positive aspect of improving the quality of life, the study of this cohesive space is an important task. With the speed of urban expansion in Hanoi, this issue is more necessary by the goals in socio- economic stability and sustainable development.

Keywords: Cohesive space, Spatial planning, Sustainability, Urbanized village, New urban area.

21. ARCHITECTURE TRAINING IN GLOBALIZATION BACKGROUND AND INTERNATIONAL INTEGRATION: PROBLEMS AND SOLUTIONS

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Abstract: Globalization is going on the momentum of scientific and technological explosion, leading to the need of knowledge innovation for every country, including Vietnam, so Architecture training also must change to adapt to practical development. This article highlights the importance of "international integration" in the "fundamental and exhaustive innovation" of Architecture training. From understanding the current status of Architecture training in Vietnam to clearly seeing the limitations, necessary solutions for innovation would be proposed in such as: Program; Teaching methods; checking and evaluating the training results and professional activities after graduation

Keywords: Globalization; Architecture training; Innovation.

22. NETWORK OF NATURAL - ARTIFICIAL WATERWAYS AND INFLUENCE ON URBAN STRUCTURE DURING FRENCH COLONIAL PERIOD IN SAIGON - HO CHI MINH CITY

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Abstract: The Mekong River Delta region in general and Saigon area in particular have natural and artificial (natural-artificial) terrain. Through the Nguyen kings, most of the roads and bridges were built based on that terrain. From the end of the 19th century to the beginning of the 20th century, when it came to invade Indochina, the French brought the rigid planning. However, this planning model does not promote its advantages, it does not seem to be suitable for the "improvised" terrain of the Saigon waterways area. The overlap of planning between the chess board network and the general invisible river-based network gives the urban structure of Saigon - Cholon an extremely different appearance. The article summarizes the history of forming a river network in Saigon until the French colonial period, thereby analyzing the urban structure that intersects the river-based street system and the chessboard-shaped street. Finally, affirming the influence of the network of natural-water rivers to the French urban structure in Saigon.

Keywords: network of natural - artificial waterways,urban structure, French colonial period.

23. THE FRENCH COLONIAL ARCHITECTURE IN SAIGON - A BLEND OF EUROPEAN ARCHITECTURE AND VERNACULAR ARCHITECTURE

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Abstract: European-style architecture (European architecture) was introduced to Saigon from the late 19th to early 20th century along with the French invasion of Indochina. Due to the characteristics of geographical conditions and climate of South Vietnam is relatively different from France; therefore, European architecture had to have certain changes to harmonize and adapt to those conditions; gradually formed a unique architectural style, the French colonial architecture. This architectural style was developed in parallel with the colonial exploitation of the French in Saigon. Over time, French colonial architecture in Saigon in particular and Vietnam in general is a blend of original European architecture and Vernacular architecture. The paper focuses on the context of French architecture in Saigon, European architectural features and characteristics that make indigenous architecture adapt to the climate conditions of South Vietnam. Since then, the French colonial architecture has been a mixture of European architecture and Vernacular architecture.

Keywords: theFrench colonial architecture, European-style architecture, vernacular architecture, Indochinese architecture.

24. FROM DOCUMENTS OF NGUYEN COURT ARTISTIC HERITAGE, DISCUSSINGTHE RELATIONSHIP BETWEEN DECORATIVE SCULPTURE AND ARCHITECTURAL ENVIRONMENT

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Abstract: The architectural decorative sculpture of Hue's imperial citadel's construction inherited the legacy of traditional Vietnamese art.It was also enriched by the fine arts of the great civilizationsin the process of cultural progress. The artists of the Nguyen dynasty with their talent and vibrancy had many innovative creations that expanded on the expressive forms of sculptural language. They are the uses of artistic methods whichbring nature into architectural works and expand the interior space with architectural environment. To bring all the nature into the living environment is also the philosophy ofthe Hue people. To live in harmony with nature, the grass, trees, flowers, fruit ... which are the friends of human soul. The way to handle the architectural decorative sculpture on The Hue imperial citadel's construction is still a great lesson that retains its value until today.

Keywords: court artistic heritage; decorative sculpture;imperial citadel; architecture.

25. TEACHING ARCHITECTURAL HISTORY AND CONSERVATION TO EDUCATE AND TRAIN ARCHITECTS IN SUSTAINABLE DEVELOPMENT

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Abstract: In recent years, international organizations have recognized the role of design and architecture in the overall quality of life, sustainability, social equity, health and resilience of communities. According to the United Nations, solutions for climate change, waste management and migration can be engaged with specific architectural designs. Therefore, the education of architects should be reformed to resonate with the sustainable development goals of Vietnam. Hands-on experience and service learning should be promoted, so students can come up with practical designs with high flexibility and adaptability to ensure sustainable development. In particular, the teaching of architectural history and conservation should be changed in order to link with the diverse culture, traditions, and topographies of the country's different regions.

Keywords: Heritage conservation, sustainable development, experiment learning, service learning.

26. A STUDY ON POLICIES TRANFORMATION –EXPERIENCES TO MAINTAIN HANOI GREENBELT ANDGREEN CORRIDOR

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Abstract: Greenbelt is the effectively used planning tool to control urban sprawl. However, the tool may produce unintended negative consequences such as leapfrog development, decreasing land area for urban development, increasing land price, and so forth. In addition, there are more urban growth challenges (e.g. housing stock requirement and greater accessibility to the urban core, and so on), which are made by the fast population increase. For those reasons, some cities eliminate the greenbelt while the others change greenbelt policy to become more flexible in order to continue development. This study will analyze traditional greenbelt policies to highlight the negative impacts of these policies on urban development. We also review new policies transformation applied to several typical cities to point out experiences that can be used for cities of developing countries. Our proposals thus will be applied to resolve existing problems of Hanoi greenbelt and green corridor.

Keywords: Greenbelt, Green Corridor, Green Wedge, GreenInfrastructure.

27. CHALLENGES ON FIRE SAFETY IN ORGANIZATION OF THE HIGH-RISE ARCHITECTURE IN VIETNAM

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Abstract: Fire safety (ATC), in high-rise buildings (NCT) is an important issue, it has been concerned in the field of architecture, construction, operation management in the world and in Vietnam. Many requirements related to this issue in Vietnam have been mentioned in the high-rise building design standards system, fire safety standards. However, there are many inadequate contents and this article refers to the challenges that need to be solved and completed in the organization of high-rise building architectural space to ensure fire safety but must be consistent with the conditions of Vietnam.

Keywords: Fire safety, architectural space organization, high-rise buildings, escape and exit routes, refugee floors.

28. URBAN PLANNING TO DEVELOP WATER RESOURCES

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Abstract: Water is a precious resource of every city. With a relatively dense system of rivers, streams and lakes, Vietnamese cities generally have plentiful water sources for residents and production. However in recent years water has become a challenge for Vietnamese cities. Natural disasters and climate change have affected the water balance of the regions in the world including Vietnam. The phenomenon of floods, droughts, surface intrusion, groundwater reduction and water pollution has threatened the living condition, requiring appropriate urban planning solutions.

The paper introduces challenges to Vietnam's urban water resources and some key solutions of urban planning and urban design for sustainable development of urban water resources.

Keywords: Urban Planning, water resources, climate change.

29. CHARACTERISTICS AND ROLE OF AGRO-INDUSTRIAL PARK MODEL IN VIETNAM

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Abstract: Countries around the world have used the Bussiness Park model in the agricultural sector to promote production, quality and price of agricultural products, thereby forming Agro industrial parks. This is also a premise for the piloting of the first Agropark in Dong Nai. Through these practical experiences, the model of the Agro Industrial Park, where the industry and agriculture mixing is proving to be in conformity with Vietnam's strengths and conditions in the current status.

Keywords: Agro industrial park, agriculture, agricultural sector.

30. GENDERED ANALYSIS IN VIETNAM'S URBAN PLANNING EDUCATION

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Abstract: Historically and globally, women have been ignoredor neglected in the domain of urban planning, which can be seen throughout the development of human civilisation where women were literally absent in the planning field. This went unnoticed until the 1960s when the notion of homogeneity in urban planning has been questioned and challenged. It is growingly proved that urbanization is strongly shaped by gender, and its repercussions affect men and women differently. The prolonged absence of women in urban planning therefore has been brought to the fore.This issue is more obvious when it comes to Vietnam, where practicing urban planning has been portrayed as a man-orientated profession. In fact,there is lack of literature on the connection of gender and urban planning in Vietnam, and it seems that the majority of universities and other institutionsprovide urban planning educational and training serviceshave taken for granted the perception of gender-neutrality in urban planning. Perphaps, they have been unaware of how gender difference can shape and influence urban form and how cities function. This paper therefore takes a very first effort to offer an indicative account on this matter, raising awareness of gender sensitivity in these universities and educational institutionsbecause of their critical role in educating and training students, planning officers, urban planners and other staff working in urban planning industry.

Keywords: gender perspective,gender difference, Vietnam, planning education, urban planning

31. CONTEMPORARY ARCHITECTURAL DESIGN IN URBAN HISTORIC SITES – FUTURE HERITAGES

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Abstract: The design in the urban historic sites began to be noticed from 1980s along with efforts to preserve architectural heritage and urban space. Design in this area has been really a challenge for architects in balancing the preservation of cultural features, architecture and new functions, aesthetics and spaces. This paper focuses on the ideas and solutions of the world's leading architects as lessons for architectural training and praxis in Vietnam.

Keywords: historic urban landscape, contemporary design, local identity, globalization.

32. THE PRINCIPLES OF URBAN DESIGN FOR PUBLIC SPACES IN URBAN AREAS

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Abstract: Public spaces are the element very important of the urban form and also the significally functions for modern urban cities. To make public spaces freely, attraction and encourage social communication, urban designer have to study in carefully not only in urban form but also in principles of urban design for this public spaces. The principles to make social spaces interaction, landmark, to take full advantage of characteristic of local area, to arrange suitable urban facilities, besides that issues of securities and safety need to take into account. This article will divide in two parts, the first is concept of public spaces in urban areas and the second is principles of urban design for public spaces.

Keywords: Public spaces, Urban form, Urban spaces, Principles, urban facilities.

33. MANAGEMENT OF CONSTRUCTION OF HIGH-RISE BUILDINGS UNDER HANOI URBAN PLANNING PROJECTS - PROBLEMS THAT NEED TO BE RESOLVED

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Abstract: The rapid development of new urban areas, high-rise housing areas in twenty years of renovation has changed the appearance of the Capital, creating a beautiful, civilized and modern urban space. Up to now, Hanoi has more than four hundred construction projects and new urban areas implemented in the center of inner city, new urban areas and suburbs. Many projects are built in synchronous quality according to the general planning, zoning planning and detailed urban planning.

In parallel with the above achievements, the public opinion has talked a lot about the construction of inner-city high-rise housing in excess of the target of population size, traffic, technical infrastructure and social infrastructure, living environment pollution. There are many causes for this situation, however, one reason to consider is " does the contents of urban planning projects ensure favorable conditions for the management of construction of urban high-rise housing according to planning?". In this article, I would like to review some contents of Urban planning project related to Construction management of high-rise building, conflicting issues, shortcomings in Urban planning and Construction management of high-rise building.

Keywords: Urban planning,Construction management

34. VIETNAMESE ARCHITECTURE LOOKING FROM HUMANISTIC PERSPECTIVE

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Abstract: ***:"***Architecture is the Art of spatial organizing to satisfy the physical and spiritual needs of human". In particular, the "human" element plays the role of the subject of the entire artistic creation. Recognizing architecture in terms of aesthetics, science, economics, and technology is necessary but incomplete - it must be considered comprehensively through a lens of culture and in close relationship with the human. That is the humanistic perspective in approach and research architecture that the article has analyzed deeply. By that way to recognize more clearly the hidden values in Vietnamese traditional architecture and to define the problems and challenges that Vietnamese architecture today must face.

Keywords: Vietnamese architecture, the humanity, humanistic perspective in architecture

35. INTEGRATING TRADITIONAL CULTURE INTO THE SPATIAL ORGANIZATION OF URBAN PARK IN BAC NINH

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Abstract: The park is a key component in the urban greenery system. It plays an indispensable role in the culture, education and leisure system. In recent years, the spatial organization of the park is being a hot issue and receiving the attention of the State, the municipalities and the urban inhabitant. Vietnam is a country rich in cultural traditions. Cultural identities of the nation, throughout thousands of years, inherited, followed and preserved through many generations.However, exploiting the traditional culture values in the spatial organization of parks is still limited.

The reason of Selecting Bac Ninh is the research area to integrate the traditional culture factors in the spatial organization of park. Firstly, Bac Ninh is the land which have many outstanding traditional culture values of Bac Bo. Secondly, the traditional culture factors do not almost exploited in the reality of the spatial organization in Bac Ninh parks. Therefore, this paper would like to introduce the solution of intergrating traditional culture into the spatial organization of urban park in Bac Ninh.

Keywords: Urban park, the spatial organization, traditional culture.

36. Material & Technology

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Abstract: The purpose of teaching “Material & Technology” to students of the advanced program in Architecture is to provide with knowledge of current and near future “Materials & technologies” that are applied in the domestic and international construction industry. Within a 90 hrs session studio of teaching the student will confront a theory and case study part that includes additional site surveys to construction sites around Hanoi and surrounded countryside. The students later team-up in groups of two to collaborate and fulfil the tasks that are required by the lecturer or funding partner using advanced software preferable BIM. A theory test as well as a final presentation in front of an audience finishes that class of “Material & Technology”.

Keywords: Material, Technology, Case Study, Site Survey, BIM.

37. ORGANIZE PUBLIC SPACES FOR INDUSTRIAL PARKS IN HANOI DURING DEVELOPMENT

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Abstract: Community space for workers in industrial zones is becoming a matter of pressing for many years, not small influence on the life of workers in the country in general and Ha Noi City in particular. So what trends should be directed to dismantle this problem?

To be able to effectively navigate the community space Organization for industrial zones in Viet Nam, thee valuation of the correct status of settlement where accommodation for workers working in industrial zones is necessary, thereport: "The trend oforganizing Community spaces for industrial parks in Ha Noi in the development process ” towards faster the above issues to contribute to anumber of foundations that define the foundation for sustainable Development of industrial zones Ha Noi isoriented "Viet Nam Industrial Development Strategy to 2025, vision to 2035 by the government”.

Based on the status of the situation, the needs of the accommodation of workers, the policy mechanism of the State, the study towards the construction of the criteria system and to perform evaluation of the effectiveness of the forms of communities serving the Industrial zones in Ha Noi to indicate the trend of organizing those spaces.

Keywords: Industrial zones, industrial zonemanagement, space,architecture,landscape.

38. PLANNING OF RURAL CONSTRUCTION ASSOCIATED WITH URBAN DEVELOPPMENT

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Abstract: The reality of nearly 10 years of rural development in accordance with the planning, the planning of rural construction in the whole country has very little experience compared to the planning of construction in the urban area. Planning rural areas only requires consolidation of three types of planning (construction planning, production planning and land use planning) in a commune construction planning project. Currently in rural areas, the construction management according to planning only takes place in the construction area with the project (mainly for the construction of communal public works), not attached to the surrounding areas. especially in urban areas to avoid long-term urbanization. Therefore, the research on planning for rural construction is necessary to study in association with the immediate and long-term urban development planning on infrastructure, social and architectural aspects for sustainable development of rural areas. and unity across regions.

Keywords: Planning for construction, rural, commune.

39. INNOVATING PLANNING METHODOLOGY AND URBAN DEVELOPMENT MANAGEMENT FROM PRACTICE TO INNOVATION REQUIREMENTS

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Abstract: In the trend of strong administrative reform and effective control of public investment, the Law on Planning promulgated in 2017 has set up renewal requirements for urban planning work, such as: Ensuring a continuous planning system with urban planning and rural planning are included in 5 types of the National planning system; Changing urban planning methods into the integration of sectoral plans, areas and the comprehensive socio-economic master plan so as to maintain balanced management and development; Reaching an agreement on land use regulations in the field of environmental resources and land use in urban planning.

Innovating planning and urban development management methodology is a process starts with innovating cognitive to making changes in processes, methods and institutions. However, in order to create visible improvements, priority should be given to the research to solve a number of basic issues that are creating barriers to the urban planning and development currently such as: The urban database in urban planning and development management; Integration in urban planning; Processes, contents, products of urban planning; Controlling the zoning development; System of planning targets; Controlling development of high-rise spaces; Planning and development management in peri-urban areas; Protecting the environment and responding to climate change in urban planning; Financial resources in urban planning and development; Adjusting plans and training work in urban planning.

Keywords: urban development, urban planning

40. DISTRIBUTION OF THE PLANNING ZONING FOLLOWING THE ALLOWABLE NOISE LEVEL WITH THE SPECIAL AREAS WHICH NEED TO HAVE THE TRANQUILITY IN HANOI

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Abstract: Traffic is one of the reasons making the most noise pollution in urban areas. Noise pollution on road traffic routes in general, especially on roads in urban areas of Hanoi city in particular is considered as one of the important issues that need to be controlled. In this article, the author limits the main noise source is the noise of traffic to assess the situation of the construction planning zoning according to the allowable noise level for special buildings that need to have the tranquility in Hanoi, at the same time proposing some solutions to this situation.

Keywords: Noise pollution, noise source, road traffic, construction planning, urban areas.

41. STANDARDIZATION OF SUSTAINABLE ARCHITECTURE: VIETNAM'S CASE

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Abstract: Sustainable architecture (or "green" architecture as commonly referred to) is not just a trend but also a social responsibility and a need which directly affects people's environment, health and development. Architects and other related agents such as developers, institutions and social groups are gradually getting more involved in this practice around the world: Vietnam included. In order to evaluate it, many countries have produced regulations and standards. ISO-1400, LEED and PassiveHouse are three noteworthy examples. However, to effectively apply those standards to our context, we need to understand Vietnam's singularities. The geography, economy and societal structures among others will define which factors of sustainable architecture are more relevant. Our goal is to ascertain those factors, introducing examples of vernacular and modern architecture and comparing them to international standards and Vietnamese professional criteria. This will therefore serve as a base to appropriately propose a future extension of the country's standardization principles.

Keywords: sustainability, agents of architecture industry, standardization, contextualization.

42. INNOVATION METHOD OF INDUSTRIAL ZONE MANAGEMENT FROM PROBLEMS OF SPACE, ARCHITECTURE, LANDSCAPE

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Abstract: The development of industrial zones also promotes the formation of new urban areas, development of auxiliary industries and job creation forem ployees, contributing to the training of human resource development, construction of technical infrastructures across the country. But besides that, the industrial zone still exists problems such as: Many area of industrial land used waste, space in the industrial zone lacks the link, architectural construction of the spread, lack of aesthetics and no peculiarities. Lands cape of industrial zone are not invested in construction in area sonable and adequate manner. Pollution environment, the infrastructure is not synchroniz edandless modern, working conditions forworker sas well as people living around the IZ are not guaranteed.. One of the reasons above is that the state management is also revealing many undisclosed yet tokeep up with the pace of development. Especially the management of space, architecture, landscape and IZs are limited. Therefore, new solutions, new methods more effectivein the management of Izs are needed towards the integration and sustainable development of IZs inthefuture.

Keywords: industrial zone, industrial zone management, space, architecture, landscape.

43. THE INTERSECTION OF URBANIZATION, FARMING VILLAGE CULTURE AND SUSTAINABILITY

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Abstract: In the USA urbanization and mass migration of people from farmlands to cities happened before sustainability had emerged as an urgent world-wide imperative for humanity's survival. In Vietnam, today, urbanization and the sustainability movement are concurrent phenomena. Pre-industrial farming cultures around the world have always been centered on local environmental characteristics, often in very sustainable ways, integrating knowledge of weather, land, soil, local plant, animal and water resources. These cultures may still possess today characteristics that have been sustainable in their communities for centuries. Studying them and reflecting on them, we may discover new sustainable strategies for development in Vietnam. We need to specifically explore the intersection of current urbanization, traditional farming cultures and the need for sustainability. Such investigations and speculations should enrich our understanding of how Vietnam can find its way into a modern urbanized, sustainable future while maintaining its cultural roots.

Keywords: sustainability, urbanization, urban farming.

44. SITUATION OF RESEARCH ON MANAGEMENT OF PLANNING FOR CONSTRUCTION OF VIETNAM MILITARY CAMP

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Abstract: Currently, the Ministry of Defense is investing in the construction of the annual barracks relatively much, the management of construction planning lacks uniform consistency. A number of Army barracks have been issued with designs and planning orientations such as the Infantry Battalion barracks with enough troops and training schools. However, the majority of barracks in the whole army have not yet issued guidelines on the management of construction planning, the preparation and appraisal of dossiers for approval The planning has not been paid due attention and due to lack of standards , standards for specific functional zone planning. In particular, there has been no coordination process between military and internal management agencies leading to a number of barracks which are not suitable for the regional architecture landscape. Therefore, the assessment of the management of planning for construction of Vietnam Army barracks will contribute to the study and propose the planning management process of building barracks with synchronous and effective sustainable development.

Keywords: barracks, guidelines, construction planning, management of planning, sustainable development.

45. LAND – CULTURE A NEW PARADIGM

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Abstract: The design philosophy of 'land-culture' and its subsequent application as a design narrative is about social sustainability and a new way to inspire and initiate a sustained dialogue between culture and landscape design. It is an attempt to create a new design tool where culture, either as ICON or as NATURE or both is morphed into the design process in a world pervasive with standardized design ideologues. It is a template to generate design concept applicable in different geographies with diverse cultures and contexts.

The process begins with identifying culture through the aspect of NATURE and ICON and their subsequent implementation in form of MACRO layer or MICRO layer.

In Land-Culture terminology, NATURE is the cultural landscape in form of a natural element or geographical feature that makes the context distinct. In most cases it helps to structure the landscape and is generally part of MACRO scale design intervention.

ICON in Land-Culture is a cultural relic or object that has a strong cultural value to the local populace. It is integrated in the design in the MICRO scale primarily as elements where they become sculptural and functional elements.

NATURE and ICON share a unique relationship depending on the cultural context. They can be complimentary and yet generated from two different cultural roots or both can be generated from same cultural root through a relentless process of design articulation and refinement.

The following case studies illustrate this unique relationship between NATURE and ICON in MACRO and MICRO level respectively and how Land-Culture design philosophy can help generate original design ideas in diverse cultural contexts.

Keywords: The cultural landscape, nature.

46. THE SPATIAL ORGANIZATION OF RURAL SETTLEMENTS ASSOCIATED WITH ECONOMIC ACTIVITIES RELATED HIGH TECH AGRICULTURE IN THE PERIOD OF INTERNATIONAL INTEGATION

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Abstract: The development of high-tech agriculture is a keyfactor contributing to theeconomic growth in the period of international integration. Rural areasremain largely associated with agricultural production. The aim of this paper is to analyze infiluence of high tech farming in rural space and topoint out functional and spatial structure of the high - tech agricultural production and service activities.Also, solutions for the spatialorganization of rural settlement associated with the different types of high tech agricultural and related service activities will be provided.

Keywords: Hightech farming, rural settlement, agricultural economic activites.

47. FORMATION LANDSCAPE AND URBAN FRAMEWORK OF REGIONS AND CITIES IN CONTEXT OF THEORY AND PRACTICE LANDSCAPE URBANISM

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Abstract: The article discusses the urgent problems of the formation of the "landscape and urban framework" of large industrial and post-industrial cities. On the example of Moscow, Yekaterinburg, Volgograd, the author studies the issues of creating an interaction of the urban greening system, analyzes the features of the formation of ideas about the "Green Infrastructure". The authors identified approaches to the conservation of landscapes of urban entities. This is based on the restoration of the ecological balance of the territories due to the regeneration of the lost links in the gardening system during the formation of the green infrastructure, taking into account the necessary ecological reconstruction of the territories. The main attention is paid to restoring the interconnections in the urban greening system on the basis of socially-idesign strategy, which is justified by the increase in social demands of society to create a comfortable environment in cities.

Keywords: Landscape urbanism, eco-oriented planning, social scenario, landscape-urban framework.

48. URBAN DESIGN IN VIETNAM – FROM THEORY TO PRACTICE

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Abstract: Urban design has a vital role to organize landscape architectural space in urban areas, concretizing the orientations of the planning to meet the needs of function, aesthetic, economic, environment and in the context of future sustainable development and adaptation to climate change.

The current urban design in Vietnam is built based on specific goals such as: the art of organizing three-dimensional space associated with landscape elements; organize safe and convenient spaces associated with diverse activities to meet human needs by age, gender, income, health status, etc.

The authors have statistic and analysis of the current situation of urban design in Vietnam from theory to practice, and give a specific example to be applied in practice to maximize the value characteristics and identity of urban space.

Keywords: Urban Design; The Image of the City; New trends in Urban Design; Public Space; Urban Design Framework; Sustainable Development.

49. INDIGENOUS CHARACTERISTICS IN THE ARCHITECTURE OF TRADITIONAL RURAL HOUSE ON THE NORTH PLAIN

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Abstract: In the current construction of new rural areas, rural residential architecture is increasingly concerned. In order to serve the design and construction of new rural houses that both meet the requirements of society and promote the values of traditional architecture, the determination of indigenousness in traditional rural housing architecture is really necessary. The article has gone deep into analyzing the basic components of traditional rural housing architecture, indicating its relevance to indigenous, natural and cultural conditions, thereby determining indigenousness in those components. Through the article, we see the indigenousness (invisible - invariant - objective) in traditional rural housing architecture (tangible - variable - subjective) as well as the relationship between properties Indigenous to traditional rural housing architecture in constant movement and development.

Keywords: Traditional architecture, rural houses, indigenous culture, indigenous, spatial structure, functional structure, architectural morphology.

50. COASTAL RESORT MASTER PLANNING – SPATIAL ORGANIZATION MODEL FOR TRAINING ARCHITECTS

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Abstract: In recent years, Vietnam has seen the development of many resorts in its localities to serve the increasing number of domestic and foreign tourists. This has greatly contributed to impressively changing the architecture image of attraction sites across the country. The resorts have provided a great deal of accomodation for visitors, especially the coastal ones. That the planning of coastal resorts is conducted properly in terms of aesthetics, efficiency and responsiveness to the demand of relaxation, entertainment, ... plays a very important role in resort construction investment.

As a lecturer of the Department of Urban and Rural Planning - Hanoi Architectural University with practical experience in planning, designing and managing investment consultancy services on coastal resort construction as well as experiences gained from visiting resorts inside and outside Viet Nam, I would be pleased to share the planning solution to landscape architecture organization of coastal resorts to serve for the purpose of training planning students in closer approach to practical construction investment.

Keywords: coastal resort, structure, Model, spatial organization

51. AGRICULTURAL PRODUCTION HOUSEHOLD IN SUBURBAN DISTRICTS IN HA NOI CITY

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Abtract: In suburban districts in Hanoi today, due to the impact of urbanization, the residential space of agricultural households (agricultural production) is gradually disappearing in the old village but thriving outside this area. It is mostly built spontaneously, spreading on agricultural land in large numbers. In the article, the author pointed out the real situation, the factors affecting the establishment of that households. Since then, the proposed solution of a new residential land model for agricultural production households is to use agricultural land for VAC or specialized farming. This model of residential land is really suitable for the development of ecological urban agriculture as well as rural tourism, contributing to building a sustainable countryside. Chuong My district area in Ha Noi is taken as a research example.

Keywords: New residential land, agricultural land, agricultural production households,…

52. INTEGRATING CLIMATE CHANGE ADAPTATION INTO MASTER PLANNING TOWARD SUSTAINABLE DEVELOPMENT

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Abstract: The article mentions to the integration of the impacts of climate change adapting to the master plan, it is a process in order to complete the content and methodology of urban planning in the context of climate change recently. Several useful methods that should to focus on urban models, land use for urban development, determining the urban structure, proposing the solutions of spatial and land use planning, transport and infrastructure planning, green space planning and environmental protection, community participation and urban management that are toward sustainable urban development in Vietnam.

Keywords: Master planning, climate change, sustainable development.

53. IDENTIFY AND DECODE LANDSCAPE IN RESEARCH AND IMPLEMENTATION OF LANDSCAPE ARCHITECTURE PROJECTS

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Abstract: Since 2010, Hanoi Architectural University cooperates with four national schools of architecture (and landscape) in France (Normandie, Bordeaux, Toulouse, Grenoble) to develop the Landscape Architect training program. The achievement and experiences learnt from this French training program, has helped HAU building successfully the vietnamese Landscape Architecture training program from february 2011. International experiences and training methods have been experimented, applied and successfully implemented at Hanoi Architectural University. One of the typical experiences applied the method of identifying and decoding landscape architecture space in architecture landscape projects. After studying, researching and decoding space, spatial planning and design strategies will be proposed based on the findings. This presentation will introduce in detail the content of landscape identification and decoding method through specific situations in researching and designing landscape architecture projects in order to introduce the typical value of the landscape architecture training at Hanoi Architectural University.

Keywords: landscape approach, landscape identifying, landscape trainning, Hanoi Architectural University.

SESSION 2:

MATERIAL, STRUCTURE, CONSTRUCTION TECHNOLOGY AND CONSTRUCTION INSPECTION

54. PORE STRUCTURE CHANGE IN NANO-SCALE OF MORTAR DUE TO TEMPERATURE

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Abstract: The physical and mechanical behaviors of a porous material such as mortar are strongly affected by the change of pore structure. In this study, mercury intrusion porosimetry measurement was conducted to investigate the changes in 10-10000 nm capillary pores structure of mortar due to temperature. As the temperature increases, so the pore volume and critical pore entry diameter all increase. It was observed that the higher temperature has caused more collapse of the finer pores leading to coarsening. This finding will lead to a better understanding of the pore structure of mortar in nano-scale and hence can be applied to predict the performance or service lifetime wells.

Keywords: Pore structure, Pore size distribution, Nano-scale, Mortar, Mercury intrusion porosimetry.

55. CEMENT WITH LOW WATER DEMAND BASED ON CLINKER OF FICO FACTORY

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Abstract: This study presents some results of research to produce cement with low water demand, compressive strength and time of setting reach according to ASTM C595 Type IP and P. Cement with low water demand (CLW) is produced from Fico Portland cement clinker, using BC Grade 100 with the amount of 0,6% to 1,4% by mass; and a mixture of additives including 1% BC Grade 100 and 15% Duyen Hai fly ash is produced and researched. The experiment results show that, CLW can be produced and used as normal cement, has effective cost and practical application.

Keywords: clinker, additive, fly ash, cement with low water demand.

56. RELATIONSHIP BETWEEN COMPRESSIVE STRENGTH AND POROSITY OF CEMENT PASTE CONTAINING EXPANSIVE ADDITIVES

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Abstract: This paper presents an experimental investigation of the relationship between compressive strength and total porosity of cement mixed with an expansive additive. The compressive strength test and under-water weighing test were carried out to measure the compressive strength and total porosity of Portland cement paste and cement-expansive additive paste, respectively. In addition, the volume of capillary pore and gel pore were also considered in this study. The results indicated that the presence of expansive additive leads to a decrease in the compressive strength and an increase in the total porosity. However, under restrained condition, the compressive strength of cement-expansive additive paste was higher than that of Portland cement paste. An equation showing the dependence of the compressive strength on the total porosity was deduced for the hardened cement-expansive paste.

Keywords: Expansive additive, compressive strength, total porosity, under-water weighing, capillary pore, gel pore.

57. EFFECT OF MULTI-BINDERS ON THE PROPERTIES OF THE CONCRETE USING SEA-SAND AND SEAWATER

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Abstract: The study of using sea sand and seawater as a raw material for making concrete has great significance in terms of ensuring construction time and reducing costs in the exploitation and transportation stages, especially for those with coastal areas and islands.The paper presents the results of research on the effects of some types of binders on the properties of reinforced concrete using local materials such as sea sand and sea water. From the research results, initially showing the effectiveness of using some types of binders, increasing corrosion resistance as well as quality of concrete using sea-sand and seawater.

Keywords: Concrete, sea sand, sea water.

58. EFFICIENT SELF-COMPACTING CONCRETES WITH THE USE OF DEMOLITION MATERIALS

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Abstract: The paper shows the use of scrap concrete from the destruction of residential buildings expiry date combined with additive superplasticizer and expanding additive RD-N to make self-compacting concrete. Results obtained from experiments show that the use of concrete scraps as aggregates in self-compacting concrete has compressive and flexural strength respectively 42,1 Mpa and 4,1 Mpa. Besides that, if the combined expanding additive RD-N, compressive strength is 47,2 Mpa, flexural strength is 4,4 Mpa and has better crack resistance. Therefore, the use of crushed stone from scrap concrete is a positive direction to help protect the environment as well as to save natural resources.

Keywords: Efficient Self-Compacting Concretes, scrap concrete, crushed stone from scrap concrete, microfiller, expanding additive RD-N.

59. EFFECTS OF INTERNAL CURING ON PLASTIC SHRINKAGE AND STRENGH OF CEMENT CONCRETE

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Abstract: This paper presents some results of laboratory research on the impact of Internal Curing (IC) by lightweight sand that reachs the state of plastic srinhkage and strength of cement concrete. The results of test analysis show that the used lightweight sand in this research is appropriate with internal curing for concrete and determine the quantity of essential internal curing material as well as assess the effectiveness of internal curing on the properties of concrete. The plastic shrinkage reduced by up 50%. The compressive strength does not change or increase slightly compared to the normal counter-curing model, and it shows that the internal curing can be mitigated or does not require regular curing.

Keywords: Internal Curing (IC), light sand (LS), plastic shrinkage, strength.

60. THE PROTECTIVE LAYER OF SHINGLES WITH ALGAECIDE PROPERTIES

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Abstract: The paper considers the discoloration of roofing compositions by the growth of algae and the application of the selective dissolution of a brass process to inhibit algae growth. In this article, it is found that incorporating brass pigment in the color coat of roofing granules provides the desired degree of algae resistance over an extended period of time.

Keywords: Roofing materials, roofing beads, selective dissolution of brass, biological layer, biocide.

61. EFFECTS OF BED ASH AND FLY ASH OF ATMOSPHERIC CIRCULATING (FAST) FLUIDISED BED COMBUSTION SYSTEM TO SOME PROPERTIES OF NON FIRE BRICK

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Abstract: This paper studies the effect of bed ash and fly ash of Na Duong thermal power plant on the compressive strenght and expansion of non fire brick. Non fire brick are made by mixing clinker, fly ash, bed ash and water. The results indicate that: When increasing the content of bed ash in the composition will increase compressive strength, increase the expansion of non fire brick at the same rate of cement clinker.

When curing samples at high temperatures (50^{o}C), for samples using cement clinker content lower than 15% in components with intensity 1.5-2 times higher than curing samples at room temperature experiment; For samples using cement clinker content> 15% in components with higher intensity but not significantly compared to curing samples at the experimental temperature conditions.

Keywords*:* non fire brick, bed ash, fly ash, Atmospheric circulating (fast) Fluidised Bed Combustion System, compressive strength, expansion …

62. SIMULATION OF EFFECT OF COMPONENT ON THE STRENGTH OF FINE-GRAINED SHOTCRETE BY EXPERIMENTAL METHOD

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Abstract: The paper uses the mathematical method of two-factors rotatable central compositional planning to simulate the effect of the ratio of water-cement (N/X) and sand - binder (C/CKD) as the input parameters on the objective functions of compressive strength of fine-grained shotcrete at different ages. From the obtained objective functions, it has been shown that the both two-input parameters have a significant influence on the values of the experimental models. Particularly, the use of Matlab and Maple software shows the expression surface, the contour line of the experimental model and determined the maximum value of compressive strength of fine-grained concrete at 3, 7, 14 and 28 days. Furthermore, the correlation between the maximum compressive strength of concrete over time also was investigated in this study.

Keywords: Simulation, Fine-grained shotcrete, Compressive strength, Parameter, Objective function.

63. FORMULAS FOR RAYLEIGH WAVE VELOCITY IN INCOMPRESSIBLE SOFT SOLIDS

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Abstract: In this paper the exact formulas for the velocity of Rayleigh surface waves propagating in incompressible soft elastic solids subject to a uni-axial tension or compression, and their strain-energy density are of the form: $W = \mu I_2 + (A/3) I_3 + D I_2^2$ where μ, A, D are second-, third-, and fourth-order elastic constants respectively, are provided. These formulas are functions of the elastic constants μ, A, D and the elongation e. Since these formulas are valid for any range of e, they are good and convenient tools for evaluating the elastic constants μ, A, D.

Keywords: Incompressible soft elastic solids, Rayleigh waves, Wave velocity, Elastic constants, elongation.

64. NONLINEAR BUCKLING OF LATTICE-CORE FUNCTIONALLY GRADED SANDWICH PLATE AND CYLINDRICAL PANEL SUBJECTED TO MECHANIC LOAD

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Abstract: The present paper deals with nonlinear buckling of Lattice-Core Sandwich plate and cylindrical panel with symmetric functionally graded coatings subjected to mechanic load based on the improved Donnell shell theory and a homogenization theory taking into account geometrical nonlinearity in Von Karman sense. Obtained governing equations can be used in research on nonlinear postbuckling of mentioned above structures. By using the Galerkin method, an approximated analytical solution to the nonlinear stability problem of plate and cylindrical panels are performed. The postbuckling load – deflection curves of the shells under external pressure and axial compression are numerically investigated. Effectiveness of Lattice-Core in enhancing the stability of FGM plate and cylindrical panel is investigated.

Keywords: Nonlinear buckling and postbuckling; Lattice-Core Sandwich plate and cylindrical panel; functionally graded material.

65. RESEARCH TECHNOLOGY FOR PRODUCING SPHERICAL GLASS FROM CONSTRUCTION WASTE TO PRODUCE INSULATED COMPOSITE MATERIALS

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Abstract: Due to tropical climate in our country, summer temperatures in the north and central Vietnam can go past 40 oC; average temperature in southern region is lower but receive high intensity UV rays: 8-10, thus making the air warmer. High temperature combined with the roof floor facing rain and sunny climate and thin covering wall intertwined with glass wall plates have created a giant glass house, therefore the temperature inside is increased to the point it can cooks the dwelling residents. In order to reduce heat transfer, using thermal insulation materials for walls and roofs is necessary. Researching on sphere-shaped glass (or in round beads form), which has specific weight ranging from 150-350 kg/m3 to make lightweight aggregate and create thermal insulation composite material for decorating and water resistant is an essential research route.

Keywords: Lightweight glass, lightweight aggregate, thermal insulation composite material, gas additive, lightweight powder.

66. EFFECT OF ROTARY INERTIA ON DYNAMIC BEHAVIOR OF FGM BEAM UNDER ACTION OF A MOVING HARMONIC LOAD CONSISDERING MOVING MASS ON TWO-PARAMETER FOUNDATION USE TRIGONOMETRIC FUNCTIONS

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Abstract: Effect of rotary inertia on linear dynamic analysis of a functionally graded materials (FGMs) beams on two-parameter foundation under to moving harmonic load consisdering load mass has been investigated. The variation of the characteristic of the FGMs is described by the exponential function based on the law of the thickness of the beam. Equation of motion of the system is set by the Hamilton's principle of energy represented by the Lagrange equation in which deflections functions are trigonometric functions satisfying the boundary conditions of the two beam's head. The computer program using Newmark-β time integration is written by MATLAB language. The effects of rotary inertia, moving load, vertical displacement function and foundation stiffness on the displacement of the beam have been examined in detail.

Keywords: Beams, Functionally graded beams, Two-parameter foundation, Moving mass.

67. EFFECTS OF CONSIDERING BUCKLING CONSTRAINT TO TRUSS SIZING OPTIMIZATION

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Abstract: In this paper the effects of considering dynamic constraint to truss sizing optimization problems are investigated. The consideration of dynamic constraint for buckling increases the complexity of the optimization process as Euler buckling criteria changes with each iteration of the optimization. A new iterative algorithm to optimize trusses was established based on the correlation coefficients of internal forces between elements. The constraints of the problem are established on the basis of the results of internal forces, displacement and governing equation by finite element method. Based on the established algorithm, the programs to solve the optimization problem of plane and space trusses were written. Comparing the results of weight optimization of the trusses by the proposed method of this paper with the results based on genetic algorithms, there is no significant difference, especially when increasing the number of elements, the weight of the truss calculated by the author's method is significantly smaller.

Keywords: truss size optimization, buckling constraints, discrete cross-section variable.

68. ACOUSTIC POROUS MATERIALS FOR BUILDING APPLICATIONS: FROM MICROSTRUCTURE TO SOUND ABSORPTION PERFORMANCE

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Abstract: Basically, a sound absorbing material, having a porous structure, is composed of a matrix based on solid skeleton and a pore space (e.g., cavities, channels or interstices) so that sound waves are able to propagate through them. Due to the combination of dissipation mechanisms when the air propagates within a porous medium, its freely propagating sound energy is absorbed. The acoustic performance of absorbing materials is governed by the mechanisms of acoustic energy dissipation during wave propagation in these media. Considering microstructural configurations, porous absorbing materials can be classified into three main types: cellular foam, fibrous, and granular. In some specific cases, thin panels made of functional foams (i.e., epoxy foam, or micro-perforated structures are also considered for their potential acoustic absorption. In this paper, we investigate numerically and experimentally the systematic link between microstructure properties of typical porous materials and their macroscopic absorbing behavior. In particular, in order to analyze the micro-macro relationship, a three-dimensional Representative Elementary Volume (REV) model is first subsequently proposed based on the microstructure (form and structure revealed using microscopy) of material samples (e.g., foam, fibrous…). Then, the transport properties of these virtual samples were determined by numerical homogenization, performing sequential evaluations of the parameters that govern viscous-thermal losses. A comparison between the experimental values and the numerical predictions of sound absorbing properties is finally provided.

Keywords: porous material, local geometry, sound absorption, noise reduction.

69. OPTIMIZATION CALCULATION OF VARIABLE CROSS-SECTIONAL BEAMS USING MULTIPLIER LAGRANGE METHOD

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Abstract: This paper proposes the way to solve the optimization problem of random variable cross-sectional beams and different boundary conditions by strength and stiffness criteria. The optimization problem is solved by multiplier Lagrange method. The procedure of calculation of optimization process is established and implemented by MathCad calculation programming software.

Keywords: Optimization problem, multiplier Lagrange method, variable cross-sectional beam.

70. Q-PLASTIC DEFORMATION IN THE MEDIUM WITH THE DEFECT

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Abstract: In this paper the deformation state of the medium with defect having quantum group as structural group was investigated. *q* - Action for the process of no commutative deformation was constructed and then the probability of the transition of elastic-plastic process was determined with the help of differential calculus of Woronowicz type in Watamura formalism. In general, the process of plastic deformation may exist in these following situations: Formation of order state; Spontaneous breaking symmetry; Reconstruction of symmetry. However, in these situations the reconstruction of symmetry did not turn to reduction of symmetry but to the q-symmetry. Here we identity the process of reconstruction of symmetry with the process of "quantization" of Lie group in the deformation bundle. The parameter q plays the role of the parameter of regulation of Reconstruction of symmetry in medium (in the end of the crack).

Keywords: plastic deformation, q-symmetry.

71. STATIC ANLYSIS OF THE TRUSS WITH MULTI FREEDOM CONSTRAINTS USING MIXED ELEMENT METHOD

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Abstract: This paper presents the way to solve problems of the plan truss with multi freedom constraint using mixed finite element. The concept and procedure of three methods for imposing multi freedom constraint were analysed, included master-slave method, penalty function method and Lagrange multiplier method. Based on proposed three methods for imposing multi freedom constraint and mixed finite element formulation for truss the block diagram of algorithm is established for solving static probems of the truss with multi freedom constraints. The programs to solve the static problem of truss were written using Matlab software. The results of nodal displacements and axial forces are not different when using three proposed method for imposing multi degree constraint.

Keywords: mixed method, finite element, truss static analysis, multi freedom constraint, linear constraint, non-homogeneous constraint.

72. CHARACTERIZATION OF DAMAGE IN CEMENT-BASED BEAMS BY ACOUSTIC EMISSION TECHNIQUE (AET)

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Abstract: The objective of this study is to characterize damage in cement-based specimens subjected to mechanical loading by means of AET. Since concrete is a very heterogeneous material compared with other materials such as steel, which has non-negligible consequences on ultrasonic wave propagation. For that, we decided to work separately on concrete (with coarse and fine aggregates), on mortar (without coarse aggregate), on cement-paste (without aggregates), to better understand the Acoustic Emission (AE) responds in concrete. In addition to three-point-bending tests on cement-based specimens, based on the variation of the elastic modulus of the material and the released AE energy, the relation of the Damage variable and Index Damage was established.

Keywords: Acoustic Emission, concrete, mortar, cement-paste, three-point-bending, Damage variable, Index Damage.

73. GEOMETRICALLY NONLINEAR ANALYSIS OF STEEL TOWERS

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Abstract: In this report, the author presents an application of the Gaussian extreme principle method for cylindrical tower structure made from steel bars. An example for calculation of power transmission towers under the effect of self-load, load wind weight or load due to broken wire was presented.

Keywords: Steel tower, Large displacement, Geometrically nonlinear analysis, Gauss's extreme principle.

74. LIMIT AND SHAKEDOWN ANALYSIS OF STRUCTURES UNDER RANDOM STRENGTH BY CHANCE CONSTRAINED PROGRAMMING

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Abstract. In this paper we propose an approach so-called chance constrained programming in stochastic programming theory to analyze limit and shakedown of structures under random strength with normal distribution. In this investigation a dual algorithm is developed to calculate simultaneously the upper bound and lower bound of the plastic collapse limit and the shakedown limit.

Keywords: limit analysis, shakedown analysis, primal dual programming, stochastic programming, chance constrained programming.

75. PREDICTING STRENGTH OF SELF-CONSOLIDATING CONCRETE WITH ARTIFICIAL NEURAL NETWORKS

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Abstract: The compressive strength can be considered as one of the most important mechanical properties of Self-Consolidating Concrete (SCC). The prediction of SCC compressive strength from its fresh properties using statistic-based methods (such as linear regression) often produces with low precision. In recent years, the data-driven methods have been widely used for predicting the compressive strength of SCC with a high level of accuracy. This paper describes the application of Artificial Neural Networks (ANN) model in predicting the relation between seven input parameters and the 28 days compressive strength of SCC. A series of 53 data samples collected from various published literature sources were used to develop the ANN models. It is shown that ANN can be trained and used successfully in estimating the SCC compressive strength based on input ingredients. Finally, it can be concluded that the application of ANN model shows great potential in predicting the 28-day compressive strength of SCC.

Keywords: Artificial Neural Networks, Self-Consolidating Concrete, Compressive strength, Sensitivity analysis.

76. PROPOSAL ADJUSTMENTS AND SUPPLEMENTS THE LOAD AND ACTION ON THE STRUCTURE OF INDUSTRIAL BUILDINGS ACCORDING TO TCVN 2737-1995 STANDARDS WITH REFERENCE TO EUROCODES EN 1991

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Abstract: Industrial houses are popularly used in Vietnam, however, the calculation of loads and actions on industrial houses according to the standard TCVN 2737-1995 is incomplete and unsuitable for construction planning; diversified shapes and details of architectural, as well as current crane and machinery equipment technology. The European general Standards of actions on structures, EN : 1991, has mentioned these issues. This pape presents some researches of EN: 1991 standards in order to additional into the TCVN 2737-1995 in calculation load and actions on industrial building's structure.

Keywords: Load and action, Industrial building's structure, EN 1991, TCVN 2737-1995

77. ANALYSIS AND RISK ASSESSMENT FOR STEEL FRAME STRUCTURES SUBJECT TO DYNAMIC LOADS ACCORDING TO THE FUZZY MODEL

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Abstract: The report presents two contents: (i) Analysis of multi-story steel frame structure, in which the stiffness of the connections and the load amplitude are uncertain quantities given in the form of triangular fuzzy numbers. Displacements are determined by fuzzy finite element algorithm (FFEM) based on the application of the optimal level - α method with the optimal solution of differential evolution (DE); (ii) Calculating the risk level based on the comparison of the largest displacement with the design standard. Risk value calculated according to the formula of area ratio, applicable to the standard case allowed by a specified value. The numerical examples perform plane steel frame analysis of twenty floors, four spans and twenty-five floors, three spans.

Keywords: Steel frame, Fuzzy connection, Fuzzy finite element method, Differential evolution algorithm.

78. INVESTIGATION INTO THE INFLUENCE OF BASE PLATE THICKNESS ON BENDING STIFFNESS OF COLUMN BASE CONNECTION BY EUROCODE 3

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Abstract: Stiffness of column base connection by “component approach” EC3 depends on stiffness and resistance of the anchor bolt in tension, the base plate in bending, the concrete in compression and the anchor bolt in shear. In this article, influence of base plate thickness on column base connection stiffness is investigated.

Keywords: stiffness, compoment method, base plate thickness, anchor bolt

79. USE OF POLYPROPYLENE FIBER FOR REINFORCED CONCRETE BEAMS AND SLABS

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Abstract: This paper presents some material properties of polypropylene (PP) fiber reinforced concrete. Based on the stress - strain state of the material, the stress diagram and the formula for calculation of the bending strength of the reinforced polypropylene fiber reinforced concrete with longitudinal bars structure were proposed. Bending strength of beams and slabs when using PP fiber were compared through examples and experiments.

Keywords: PP fiber reinforced concrete, stress diagram, bending strength.

80. AN EXPERIMENTAL STUDY ON PUNCHING SHEAR CAPACITY OF REINFORCED PRESTRESS CONCRETE FLAT SLABS

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Abstract: The influence of reinforcement ratio and pre-compressive stress in concrete to punching shear capacity of reinforced concrete and reinforced prestress concrete flat slab is mentioned in practical Codes in advanced country, but not yet mentioned in Vietnameses Code. Based on the implementation of 15 experimental samples, the paper proposes a formula to calculate the punching shear capacity of reinforced concrete and reinforced prestress concrete flat slabs in accordance with TCVN 5574-2018.

Keywords: flat slab, reinforced concrete, pre-compressive stress, punching shear capacity, reinforcement ratio.

81. CALCULATION OF THE BEARING CAPACITY OF ORTHOTROPIC REINFORCED CONCRETE SLABS USING LIMIT EQUILIBRIUM METHOD

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Abstract: Reinforced concrete slabs are popularly used in construction. Generally, the arrangement of reinforced concrete on slabs can be placed in two different directions. This article introduces the calculation of bearing capacity of orthotropic reinforced concrete slabs using limit equilibrium method.

Keywords: Reinforced concrete slab, limit equilibrium method.

82. SOME PROBLEMS ON THE DESIGN OF THE TRANSFER STRUCTURES IN VIET NAM

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Abstract: In this report, we present the problems encountered in the design process of transfer structure in high-rise buildings in Vietnam in general and typical Dolphin plaza project. Transfer structure has been used more and more in the last ten years in Vietnam, however, there are many complicated problems when designing this type of structure such as: selecting structural solution, structure modeling, seismic resistance, construction state. For each issue, we also propose a safe and economical way to solve it.

Keywords: Reinforced concrete, transfer beams, transfer, high-rise buildings, deflection.

83. THE VIRTUAL LOAD METHOD FOR FREE VIBRATI0N ANALYSIS OF BEAMS

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.**Abstract:** This paper introduces the Virtual Load Method to directly set characteristic polynomial equations to determine the specific frequencies of beams.

Keywords: Free Vibration, Natural Frequency, Virtual Load Method, Lagrange Multiplier Method, The Principle of Virtual Work.

84. TEMPERATURE EVALUATIONS IN STEEL STRUCTURES UNDER FIRE CONDITIONS, USING SOFTWARE SAFIR

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Abstract: The report presents a method for calculating the temperature of steel structures in fire conditions, using SAFIR software. Parametric studies of temperatures in steel structures were done with various thickness and types of fire-proof materials to make comments and recommendations for designing fire protection of steel structures.

Keywords: Steel structures, High temperature, Fire conditions, Fire protection, SAFIR

85. SHEAR STRENGTHENING OF EXTERIOR JOINTS USING ULTRA HIGH PERFORMANCE STEEL FIBRE REINFORCED CONCRETE (UHPSFRC)

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Abstract: The exterior joints play an important role for seismic resistance of constructions. Studying on strengthening method for the exterior joints using ultra high performance steel fibre reinforced concrete (UHPSFRC) is a new idea and has not been conducted. Therefore, this paper presents the experimental results on three samples S1, S2 and S3, where S1 is the control sample designed according to Eurocode 8 with high plasticity level (DCH), the other two models use high-strength steel fiber reinforced concrete UHPSFRC and do not use the reinforcement in the button area. The results showed that the node was enhanced by UHPSFRC with better overall and local behavior than the control sample. The shear strength of the node increases by about 16% - 20% and the displacement plasticity increases from 13% - 18%.

Keywords: Exterior joint, ductility class high (DCH), ultra high-performance steel fibre reinforced concrete (UHPSFRC), Eurocode 8 (EC8), seismic resistance.

86. DESIGN OF TELECOMMUNICATIONS MONOPOLE ACCORDING TO AMERICAN STANDARD TIA – 222 – G

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Abstract: The content of the article presents the theory of computing telecommunications monopole according to American standard TIA-222-G. Based on the calculation theory, build procedures and steps for calculating telecommunications monopole design according to American standards. Through the research results, the article gives the necessary notes for engineers when calculating the design of telecommunications monopole.

Keywords: Monopole telecommunication column

87. CALCULATION BENDING COLD-FORMED PURLIN ACCORDING TO EUROCODE 3

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Abstract: The application of cold-formed purlins significantly reduces the self-weight of frame systems. This explains why it is widely used the cold-formed purlins in construction of light steel frame buildings. The paper presents the calculation procedure of bending cold-formed purlins by European standards EN 1993-1-3. From calculation results several comments and recommendations will be proposed.

Keywords: purlin, cold-formed steel, lateral torsional buckling

88. ECONOMICAL DESIGN OF POST-TENSIONED CONCRETE SLABS IN LINE WITH EUROCODE 2

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Abstract: This paper presents the guidelines for economical design of bonded post-tensioned concrete floors, according to EC2. The choice of slab thickness, concrete grade, reinforcement amount, balanced load are considered.

Keywords: Prestressed concrete, economical design, post-tension, bonded

89. STEEL DESIGN CODE OF EUROPEAN FOR DEFLECTION LIMIT

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Abstract: This paper introduces some of provisions on the value of vertical and horizontal deflection limits for single storey buildings, multi-storey buildings, as well as for vertical steel beam. According to some design standards of European countries (France, Germany, United Kingdom), used to check the serviceability limit state for building structures.

Keywords: Deflection limits, Steel structures, European Standard

90. SOME INVESTIGATION RESULTS ON PREDICTION OF GEO-RISKS IN TUNNELING IN VIETNAM

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Abstract: The geological conditions for tunneling construction tasks are generally complicated and in many cases. There are potentials of geological risks (geo-risks) to develop into accidents. Prediction of geological risks are therefore one of the most important works in the design stage, and in order to have a safe construction of underground structures. The paper presents some results on prediction of geological risks (geo-risks, geohazards) in Tunneling in Vietnam using numerical methods and propose some hints for the future works.

Keywords: geological risks, prediction, tunneling in Vietnam, UDEC, FLAC 2D.

91. EFFECT OF COMPACTION ON SEEPAGE FLOW

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Abstract: The purposes of this study are to investigate effect of compaction degree and to clarify seepage performance of embankments constructed by coarse grained soils. In order to accomplish the purposes, a series of the model tests was performed on a full-scale embankment constructed by a typical coarse grained soil. In the process test, the effect of degree of compaction such as dry density, water content, permeability on seepage flow-induced failure was investigated in detail. Finally, evaluation of seepage flow behavior in coarse grained soil under change of compaction degree was discussed based on the results of a series of upward seepage test.

Keywords: coarse grained soils, permeability, degree of compaction, water content, seepage test.

92. BEHAVIOR OF EARTH CONCRETE WALL UNDER SHEAR: FROM EXPERIMENTAL TO NUMERICAL APPROACH

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Abstract. This paper concerns the study of a novel construction material based on “raw earth” with stabilizer which is called “earth concrete”. It is constituted with sand, aggregate, “raw” earth (or soil), water, superplasticizer and to improve its physical behavior, a small quantity of Portland cement. The objectives of this construction material are to take the advantages of the traditional raw earth construction, such as its low embodied energy, its interesting hydrothermal behavior and environmentally friendly; but also, the ones of the ordinary concrete by improving the strength, durability and resistance to water erosion. Although this kind of material has recently started to be studied and developed in some countries, the conducted studies are mainly concentrated at the material level. To our knowledge, at the structural level, no research has yet addressed, and "earth concrete structures" behavior under mechanical loading is not sufficiently understood. This paper presents experimental results on localized compression capacity of an earth concrete wall. Tests were conducted on 1mx1mx0.3m wallet manufactured in the laboratory. Numerical simulations using finite element method (FEM) are also conducted. Verification of the conformity and accuracy of the numerical model was made by comparing the numerical results to the experimental ones.

Keywords: earth concrete, compression-shear capacity, experiment, finite element method.

93. NUMERICAL SIMULATION OF DEFORMATION ON CLAYEY SOIL USING THE ELASTO-PLASTIC THEORY FOR SETTELEMENT PREDICTION

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Abstract: In construction activities, it is important to investigate soil settlement on soft clay. However, soil parameters are occasionally not obtained before construction for consolidation analysis. In such cases, soil settlement cannot be simulated. This paper reports on a method for calculating the final settlement of soft clay using soil parameters obtained after construction. The soil constitutive model SYS Cam-clay model was used to describe the soil structure, verconsolidation, and anisotropy. Using this model, the initial state could be estimated from the behavior of soil under various conditions.

Keywords: SYS Cam-clay model, consolidation, numerical simulation, settlement

94. DETEMINE THE REGION OF DEFORMATION PLASTIC BY EXCEL WHEN DESIGN OF EMBANKEMENT ON THE SOFT SOIL

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Abstract: The paper presents the results of constructing the coordinate function of the plastic deformation zone boundary and applying it in Excel to serve geotechnical survey work to design embankment on soft ground, there by analyze elucidate the formation and development of plastic deformation.

Keywords: Plastic deformation area

95. LATERAL DEFLECTION OF TALL BUILDINGS

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Abstract: This paper presents the lateral deflection characteristics of tall buildings. To reduce lateral deflection, in general, the place to start adding stiffness is in the beams. The deformed shape configurations of frame and wall, shear wall - frame interaction, reduced stiffness of members due to cracking to lateral deflection are investigated.

Keywords: RC, Tall buildings, Lateral deflection

96. EVALUATION OF DEEP FOUNDATION PIT DEWATERING AFFECTING DISPLACEMENT OF SURFACE AND DIAPHRAM WALL

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Abstract: Combined with the actual work, the paper analyzed the dewatering process in the construction of the deep foundation pit to affect the displacemen of surface and diaphram wall. Since then, it is necessary to pay attention to issues when the deep foudation pit dewatering to ensure the construction process is safe and convenient.

Keywords: deep foundation pit, dewatering, diaphragm wall

97. GAP ANALYSIS OF FIRE SAFETY FOR METRO TUNNEL AND UNDERGROUND STATION IN VIETNAM - ESSENTIAL TO COMPILING SAFETY STANDARD

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Abstract: Fire in tunnel is most importance issues in undeground section. Due to characteristics of mass rapid transit and volume passage connecting urban areas, fire protection objective in metro tunnel and underground station is therefore to suppress any fire that may occur, stop the fire spreading to adjacent vehicles or carriages, and minimize damage to the tunnel and infrastructure. This paper presents the fire safety characteristic of metro tunnels and the importance of compiling standard as guidance for designer, and operator in Vietnam.

Keywords: safety, fire metro tunnels, fire prevention, standard.

98. SECONDARY STRUCTURES WITH THE SAFETY AND UTILITY OF THE BUILDING

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Abstract: Every type of structures in building has its role, so all need to be concerned. However, in design as well as construction the primary structures are often more concerned, and secondary structures, then little or no interest in full. Quite a lot of trouble or inconvenience of the building appear from causes of sub-structures being negligent designed or implemented.

Keywords: Secondary structures, safety and convenience, inconvenience of the building.

99. SOME ISSUES ON CALCULATION OF LOAD CAPACITY OF PILE UNDER EARTHQUAKE FORCE

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Abstract: The calculation of the bearing capacity of piles under earthquake force in Vietnam has been relatively mentioned in the current standards as in the national standard TCVN 10304: 2014 or in the construction industry standard TCXD 205: 1988 for civil and industrial construction works. Besides, for bridge and road constructions, we can also use TCVN 11823: 2017 built on the basis of AASHTO-LRFD standard. However, the calculation of the pile bearing capacity under earthquake force according to the current standards system still have some unclearly problems. It is difficult to apply as well as not yet fully reflect the behavior of the pile under earthquake force. Based on theoretical analysis and on the specific calculation results with the same boundary conditions such as pile size, soils characteristics and earthquake force, the paper presents some discussion when calculating bearing capacity of piles under earthquake force according to TCVN10304: 2014, TCXD205-1998 and TCVN11823: 2017.

Keywords: Bearing capacity, earthquake, design standard

100. DEVELOPMENT OF LOAD TRANSFER CHARACTERISTICS OF DRILLED SHAFT IN SHALES FOR USE IN LRFD

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Abstract: This paper presents the development of load transfer models and their variability using intensive repression analysis on full scale load test data. Five functional models, and two different types of regression analyses were performed, non-weighted least squares regression and weighted least squares regression. The hyperbolic function obtained from non-weighted least squares regression was found to best fit the load transfer data. This paper also presents the effects that load transfer *t-z* models' methods of normalization have on the resistance factors of service state limit for drill shafts in shales. The obtained *t-z* and *q-w* models are presented in hyperbolic forms with their quantified variability for use in modeling and for probability analysis which is the basis for the development of Load and Resistance Factor Design.

Keywords: Regression analysis; Foundation design; Service limit state; Probabilistic analyses. Load and resistance factor design (LRFD);

101. DYNAMIC PROGRAMMING IN CONSTRUCTION PLANNING

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Abstract: When establishing the construction planning, it is necessary to set up various construction planning to determine the best construction planning. Currently, the methods of evaluation and selecting construction planning depend mainly on the qualifications and experience of the engineer. The paper presents to apply dynamic programming to select the best construction planning.

Keywords: construction planning, dynamic programming, methods of evaluation

102. AUTOMATION OF BUILDING INFORMATION MODELING IN THE MOHAMMED VI TOWER'S FACADE

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Abstract: In recent years, Building Information Modeling (BIM) has increasingly gain popularity among both clients and contractors. BIM offers far more information of the project than the traditional 2D drawings set, while also giving all shareholders ability to maintain control of which change was made to the shared model. However, the application of BIM often varies drastically between disciplines and companies. Meaning each company uses different BIM tools (software) for his work, and migration between software often result in loss of information. To tackle such problem in a complex project like the Mohammed VI Tower's facade, a scientific workflow between architect and structure engineer is needed. The concept design is first made in Rhinoceros, then with the help of Grasshopper, exact coordinates of façade location point will be extracted into Excel files. Using API, Revit will be able to read those coordinates and automatically create column and beam systems to support the façade. By following this workflow, changes from architects can be quickly adapted and reflected in structure model with minimum error.

Keywords: BIM (Building Information Modeling), Revit API, Rhinoceros-Grasshopper, C# coding, Mohammed VI Tower.

103. DIGITAL TWIN'S ROLE IN CONSTRUCTION INDUSTRY IN VIETNAM

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Abstract: Digital Twin is a virtualization model of a building, process (construction or operation) or a service. By digitizing data from buildings (physics) to create into a digital copy of the work itself, architects and engineers rely on it to make quick decisions. Therefore, the application of Digital Twin in vietnam construction industry is necessary to ensure the data is collected in a complete and accurate way. This paper introduces the Digital Twin, its needs and roles in the industrie 4.0 revolution in Vietnam construction industry.

Keywords: Digital Twin, BIM, Modeling , Industry 4.0

104. THE CONTINUING PROFESSIONAL DEVELOPMENT IN CONSTRUCTION ACTIVITIES IN VIETNAM

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Abstract: In construction activities the continuing professional development (CPD) is growing up and many countries in the world applied it as a mainstream process that aims to contribute to the sustainable and secure buildings. Many ASEAN countries decided to apply officially this process and issued the guidance, control measures, sanctions obvious. The continuing professional development in construction activities is associated with continuing education for participants in this activity, this is a notable characteristic.

Keywords: continuing professional development, CPD, construction activities

SESSION 3:

URBAN INFRASTRUCTURE AND ENVIRONMENTAL ENGINEERING SYSTEMS-SUSTAINABLE DEVELOPMENT TENDENCY FOR FUTURE CITIES.

105. TECHNICAL INFRASTRUCTURES INDICATORS A IMPORTANT CONTENT IN THE NATIONAL URBAN DEVELOPMENT DATA SYSTEM

Vũ Thị Vinh

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Abstract: Today, many countries in the World have developed their set of Urban Indicators as an important tool to: Monitor national and local priority issues such as socio-economic development and provision of urban services; Facilitate the management decentralization of local government for understanding their strengths and weaknesses in development to improve the competitiveness of cities. At the same time, the Urban Indicator sets reflect urban development trend of a nation or locality that provide information for data-based decision-making processes. In other words, the urban indicator set if a tool for diagnosing the strength or weakness health of a city. In our country, with the suport of the World Bank, the "*National Urban Dababase System*" project was implemented by the Ministry of Construction in 2016 which significantly contributes to the urban management and development.

Keywords: Urban Indicators, Urban Infrastructure Indicators, National Urban Dababase System"

106. SMART CITY AND TECHNICAL INFRASTRUCTURE PLANNING

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Abstract: Smart City criteria are being applied by ministies, agencies and local authorities. This model is not new to the world, but it is still in the first stage in Vietnam. Similar to all project, planning is initial step to start building a smart city. The paper presents an overview of smart city and the linkage to technical infrastructure, in which, need to add some contents in order to facillitate the construction and management of smart city.

Keywords: SmartCity, Transport City, Sustainable Urban Drainage and Safe Water Supply.

107. APPLY CHARACTERISTICS OF SEWAGE SLUGE TYPES IN EVALUATING THE DEWATERABILITY AND CONDITIONING OF THESE SLUGE

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Abstract: It is a significant increase in the amount of sewage sludge generated by Wastewater Treatment Plants (WWTPs) while the costs for treatment of these sludge account for over a half of costs of the whole WWTP. This study researches how to minimize these costs by decline bio solids produced. The objectives of this study is evaluating the dewaterbility of sewage sludge basing on characteristics of these sludge, which are anaerobically digested sludge (ADS) and aerobically digested sludge (AEDS) taken from 2 WWTPs of Sydney Water Corporation, Australia. Thanks to the comprehensive understanding regarding these sludge characteristics, the dewatering process would be optimized. The study outcomes show that AEDS required the lower polymer demand for conditioning in comparison with ADS. As well as this, the good correlations between protein and polysaccharides which play important role in deciding polymer demand.

Keywords: characteristics, sewage sludge, dewaterability, conditioning

108. PROPOSING A LIST OF INDICATORS FOR MANAGEMENT OF SMART URBAN WATER SUPPLY IN THE PERIOD OF 2020-2025 AND ORIENTATION TO 2030

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Abstract: Smart urban infrastructure is an essential foundation for the formation and development of smart cities, in which urban water supply plays a very important role.Managing smart urban water supply towards sustainable development is a big issue attracting the interest of the whole society. The article has scientific content including 2 main issues: Reasons and Proposals of the list of indicators for management of smart urban water supply in the period of 2020 - 2025 and orientation to 2030 (including 4 groups, 8 subgroups and 21 indicators). The use of indicators to evaluate the efficiency of intelligent urban water supply management is an important link to accelerate the process of building smart urban areas in Vietnam.

109. DETERMINATION OF TECHNOLOGICAL PARAMETERS FOR MODELLING FILTRATION PROCESS IN TERTIARY WASTEWATER TREAMENT BY FLOATING GRANULAR PLASTIC MEDIA FILTER

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Abstract: A pilot scale experiment was carried out in tertiary wastewater treatment using floating plastic granular media filter. The floating media filter has been working with 120 cm depth of polystyrene bed. Wastewater from secondary biological treatment of WWTP was treated in the pilot filter with filtration velocity of 5, 7.5 and 10 m/h. Head loss development and evaluation of SS, COD, NH_4^+ removals during filtration were objectives of the study. Based on the filtration theory of Minz D. M (Russian scientist), these important coefficients of filtration process like a (particle separation intensity), b (particle adhesion intensity) and T_{bv} (filter's protection time), were determined by simple graphic method of head loss development. The results of graphics analysis in 7.5, 10 and 5.0 m/h velocity filtration regime allowed to determine a = 0.562, b= 11.480 and T_{bv} = 23.24 hours; a = 0.750, b= 9.382 and T_{bv} =12.54 hours and 5 m/h, a = 0.375, b= 15.24 and T_{bv} = 42.12 hours respectively.

Keywords: head loss, particle separation intensity, particle adhesion intensity, filtration velocity, filter's protection time, suspended solids (SS), floating plastic media.

110. THE DEVELOPMENT OF ROAD NETWORKS IN ACCORDANCE WITH THE SPACE STRUCTURE OF ECOLOGICAL URBAN

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Abstract: Through the road network, it is possible to see the urban spatial structure and sometimes the road network is one of the decisive factors back to the layout of urban functions. Development of public transport networks is not the only and mandatory solution for ecological urban construction. Road network can not only have public transport, car traffic or bicycle or walking trafficIn ecological urban areas, road networks need to create harmonious, balanced and least damaging development to the ecological environment, so we need to maintain a balance between different types of transport. different. Each city often has a complex spatial structure and often changes. Developing suitable road network for each spatial structure will contribute to the development of ecological urban, creating a balance with nature, reducing ecological footprints and responding to climate change.

Keyword: Road network, Transport, eco-city, Ecological footprint

111. SOLUTIONS TO OVERCOME AND MINIMIZE AIR POLLUTION IN VIETNAM'S RURAL AREAS

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Abstract: Along with the process of industrialization and modernization, the development of rural areas within Vietnam's territory is an indispensable process to boost socio-economic growth and improve the quality of life of rural population. This development on the one hand brings great benefits contributing to the rural development. On the other hand it detoriarates and contaminates the environment in general and the air environment or the air quality in particular. In fact, air pollution in rural areas has caused many negative impacts, which ironically is counterproductive to the effort of developing these areas. Such impacts include the damage to people's lives and health, the decline of socio-economic speed, the increasing risk of environmental conflicts and so forth. ... Therefore, it is necessary and quite urgent to find mitigation-oriented solutions to air pollution in rural areas in the current period. Given such indicative argument, the paper focuses on analyzing the current status of the air environment, identifying the sources of air pollution in rural areas and proposing some solutions to overcome and minimize the air pollution in rural areas in Vietnam.

Keywords: air pollution, environment, rural area, solution, minimize …

112. INFORMATION TECHNOLOGY APPLICATION IN MANAGEMENT OF SMART URBAN WATER SYSTEM IN VIETNAM

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Abstract: Smart water supply is an essential demand of citiesin Vietnam and worldwide. For the construction, operation, and management of a smart water supply system, using information technology (IT) solutions is imperative. Examples include the application of IT in the automatisation of water production operations; use ofa geographic information system (GIS) for the management of water supply networks; anddigitalisation for ensuring cash-free payment methods. IT solution applications can be classified into five main groups, some of which are proposed by the present authors. Many software for operations management of smart water supply system, which are present in this paper, have been applied in Vietnam. Therefore, IT plays a critical role in the field of smart urban water system management in Vietnam.

Keywords: management software, SCADA, smart water supply, WaterGems.

113. INFORMATION DISSEMINATION - AN APPROACH IN ENVIRONMENTAL MANAGEMENT WITH COMMUNITY PARTICIPATION.

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Abstract: The role of community participation in environmental management is very important and in many different ways. But in order for the community to promote the advantages, get the most and most effective participation in environmental management, it is necessary to disseminate all information about the environment of businesses, industrial production activities quickly. fast, timely, transparent to all people.

Keywords: Information dissemination, community participation, environmental protection

114. EXPERIENCE PLANNING DEVELOPMENT OF ROAD NETWORK TOWARDS ECOLOGICAL CITIES IN THE WORLD

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Abstract: Ecological urban development is becoming a trend of many countries in order to create livable cities those are balanced with the nature, reduce ecological footprints and respond to the climate change.There are many cities in the world that have built ecological cities and have achieved good results to help improve the living environment, balance the ecosystem, connect people with the nature and develop sustainably.Vietnam has had initial orientations for ecological urban areas, however, there are not enough legal documents for ecological urban constructions.The urban road network is considered to be the backbone of the city and always puts forward a step ahead to create a premise for other components to develop.The article outlines some of the contents of the road network development plan. Some cities in the world thereby give some solutions for Vietnam.

Keywords: Road network, Transport, eco-city, Ecological footprint

115.INTRODUCTION OF PRE-TREATED TRICKLING FILTER (PTF) SYSTEM

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Abstract: Pre-treated Trickling Filter (PTF) system is an advanced energy-saving wastewater treatment process developed for Southeast Asian countries. PTF leverages an excellent advantage of trickling filter technology, such as very low power consumption (no need of aeration) and easy operation & maintenance. In combination with pre-filtration and post-filtration processes and also by using new filter-bed media, we overcame the disadvantage of conventional trickling filter, such as large footprint and odor & filter fly nuisance. This paper describes a development background of PTF, and also explains technological features of the system. Furthermore, the first full-scale PTF project (2,000 m3/day) in Hoi An City, Vietnam, will be introduced in this paper.

Key words: PTF technology, pre-filter tank, trickling biological filter tank.

116. NECESSITY OF PIPE COLLECTION SYSTEM AND FORMALIZATION OF COMPREHENSIVE HOUSEHOLD CONNECTION ON PLANNING OF URBAN SEWAGE SYSTEMS

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Abstract: Polluted water environment problems in urban area in Vietnam are critical issue due to increasing water consumption as country's economic growth. Although huge govermential efforts to solve these issues have been implemented, the sewerage systems with interceptor often used in urban area have many problems due to low quantity and diluted inflow wastewater. The cause of this comes from no consideration of proper piped collection system and household connection on sewerage project planning. Up to now, most of donors and govermential officials have just only focused on Treatment system rather than complicated work of pipe network collection and household connection. As one of feasible and inevitable solution, VSC project would like to recommend that sewerage Facilities Map with flow calculation and the necessity of formalization of comprehensive household connection work, which should be incorporated into govermential procedure, based on Japanese experience and VSC project.

Keywords: interceptor, pipe network collection, house-hold connection, VSC Project

117. POTENTIAL APPLICATION OF MACHINE LEARNING MODELS IN EXAMINING TRAVEL MODE CHOICE

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Abstract: The study on travel behavior plays an important role in the transportation field. This article presents an overview of machine learning application in commuting mode choice research. The summarization synthesized from numerous academic papers indicates that the researchers are now paying more attention to apply and develop machine learning in this sector. While the researches applied conventional methods are decreasing because of its intrinsic limitations, artificial intelligent techniques show their advantages in solving travel behavior problems. These include the ability to handle big and complex input data, the performance of prediction and revealing the interaction between explanatory variables, etc. The findings of the present study, on one hand, concrete the power of machine learning and, on the other hand, encourage researchers and practitioners to apply advanced methods confidently in the transportation domain.

Keywords: Travel mode choice, machine learning, travel behavior, data mining, transportation, review.

118. INTEGRATING LIDAR TECHNOLOGY AND GIS TO CREAT SLOPE MAP FOR PLANNING TECHNICAL PREPARATION OF URBAN CONSTRUCTION LAND

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Abstract: Planning of technical preparation for construction land is one of the contents of urban land construction planning. One of the works of technical preparation planning is to evaluate the construction land according to natural conditions: topography, geology, climate, hydrology ...According to Vietnam standards on urban construction planning - Design standards stipulate: terrain slope is one of the criteria for evaluating urban construction land. Therefore, the creation of the slope map is one of the important tasks of the planning design of technical preparation of urban construction land. In this paper, the author introduces the method of creating a slope map integrating LiDAR technology and geographic information system GIS, serving the evaluation of construction land in the area of technical preparation planning urban construction land. This method will help to build slope maps quickly, intuitively and with high accuracy.

Key words: Lidar, GIS, DEM, slope map, technical preparation.

119. RESEARCH ON BUILDING FLOOD MAP WHICH APPLICATES IN THE URBAN INFRASTRUCTURE ENGINEERING PLANNING TO PREVENT, RESPOND WITH THE CLIMATE CHANGE IN THE COASTAL URBANS OF QUANG NINH PROVINCE

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Abstract: As a coastal province, in recent years, Quang Ninh has suffered severe consequences of climate change affecting the Urban Infrastructure Engineering System, affecting the living environment and damage economic of coastal communities. The paper presents the research results of the provincial scientific research project on the method of mapping based on the integration of hydraulic and hydrological models MIKE-NAM and GIS geographic information system. On that basis, to establish a flood map in the planning of urban technical infrastructure to prevent and respond to climate change in Ha Long City, Cam Pha City and Mong Cai Border Gate Economic Zone. and Quang Yen town, Quang Ninh province. Research results of the flood maps set as a basis for flood risk analysis under climate change and sea level rise follow to these scenarios RCP 4.5 and RCP 8.5. Its evaluate and propose Urban Infrastructure Engineering planning solutions to prevent and respond to Coastal Urbans of according to the planning stages to 2030, vision to 2050.

Keywords: Urban Infrastructure Engineering Planning, Flood Map

120.IRON REMOVAL IN THE GROUND – RESEARCH OF DRESDEN ENGINEERING UNIVERSITY - GERMANY

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Abstract: The Technical University of Dresden has studied the process of removing iron of groundwater in the ground on the experimental model. The experiment was studied in two processes: removing iron and consuming oxygen right in the ground. Through the time of researching and applying experimentation to the fact that the production achieved good results, the experts have summarized and evaluated the new method of iron removal and the proposal was applied in practice. Therefore, the method of iron removal of underground groundwater was quickly put into production in Germany and brought high economic efficiency. This is a valuable lesson of foreign countries which is very useful for Vietnam's water industry.

Keywords: Iron removal, Groundwater, In the ground.

121. URBAN CONSTRUCTION MANAGEMENT IN VIETNAM - REALITY AND SOLUTION

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Abstract: Urbanization and industrialization are indispensable trends reflecting social development. Strong urbanization on a global scale rapidly increases the number of large cities. Urban issues and urbanization are increasingly important, reflecting the level of development of each country. Vietnam is one of the countries with rapid urbanization compared to other countries in the world and in the region. Currently, Vietnam's urban areas have developed rapidly in both quantity and quality, meeting the socio-economic development of the whole country. Nationally there are about 830 cities with 36% urbanization rate. According to the overall planning orientation of developing Vietnam urban system until 2025 and vision to 2050; by 2020, the urban population will be around 44 million, accounting for 45% of the national population; In 2025, the population is about 52 million, accounting for 50% of the country's population. Despite the strong development, the current urban areas of Vietnam have not really met the social development needs. n addition, there is a lack of consistency, lack of consistency between managers, planning consultants, architects, builders in the process of urban management and development control that made the cityscape Marketing becomes heterogeneous, threatening the sustainable development of the city. In order for the planning of construction and urban development to be disciplined, effective, with high practical value, it is necessary to build a management system with appropriate mechanisms and institutions for love Practical picture of new socio-economic development in our country.

Keyword: Urbanization; urban management, urban planning

122. PUBLIC TRANSPORTATION IN HAI PHONG CITY: PLANNING AND CURRENT SITUATION

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Abstract: Hai Phong is the class-1 urban center of the country and the third largest population in Vietnam with 2.1 million people. Hai Phong has developed the public transport system since 2004 but so far only meets 1% of travel demand while the planning orientation is 10%, it can be seen the reality and orientation is quite a distance. This article introduces the content of public transport planning, the current situation of public transport system in Hai Phong city. Analyzation and making comparisons between planning and reality of Hai Phong public transport, find out the cause of the difference. Research results will be useful for research directions and propose planning solutions to improve service quality and meet the travel demand of people.

Keywords: planning, public transport, management, quality, Hai Phong, bus…

123. TECHNOLOGICAL SOLUTION FOR WASTEWATER TREATMENT OF THE MACHINERY PLANT

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Abstract: The paper describes solution for wastewater treatment of tractor plant in Russia. The amount of wastewaters from the plant is 4861 m^3/day. Various options for the recirculation of pre-purified effluents from different shops of the tractor plant are considered. To develop a rational scheme of wastewater disposal and assess the possibility of reuse of industrial wastewater, the composition and mode of wastewater disposal are studied. As the results showed, there were technological schemes of 04 local wastewater treatment plants (LWTP) with mechanical, physical and chemical methods applied in purpose of water reuse for production processes. The solution for the purification of storm water also was provided with its reuse for industry. Total water reuse is about 49,7% of water needs for the plant.

Keywords: machinery plant, local wastewater treatment plant, water reuse, industrial wastewaters, electrolysis, flotation, ion exchange.

124. EXPERIENCES AND CHALLENGES IN JAPAN FOR SUSTAINABLE DEVELOPMENT OF SEWERAGE SYSTEMS

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Abstract: In Japan, wastewater treatment coverage ratio has reached about 90%, and it can be said that the installing stage of sewerage infrastructure based on the urgent demands for sewerage systems derived from the rapid industrialization and urbanization has been almost completed. Meanwhile, sewerage management in Japan are now facing urgent needs to focus on the maintenance and rehabilitation of facilities rapidly installed in the high economic growth period. Furthermore, every sector involved in sewerage works, central and local government, research institutes and private companies, is tackling emerging social demands, such as recovering resources and energy from sewage sludge, accelerating Public Private Partnership. This paper introduces the experiences and new challenges for sustainable development of sewerage works in Japan which can be beneficial to foresee the future and set the right orientation of sewerage systems in Vietnam which are now under development.

Keywords: Sewerage, Wastewater, Management, Maintenance, Resource, Japan

125. CRITERIA FOR DEVELOPMENT PLANNING OF ROAD NETWORK TOWARDS ECOLOGICAL URBAN IN VIETNAM

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Abstract: Building ecological cities is becoming a growing trend in the world. In Vietnam, there are not enough documents on ecological urban construction regulations. The road network is considered to be the frame, the backbone of the city, and the framework is solid to ensure a balanced, harmonious and sustainable city. Road network in ecological urban areas has its own characteristics, it needs to study from many different aspects, based on that, build a system of criteria towards ecological urban.The system of criteria developed will be the basis for identification, evaluation and development of ecological urban areas.

Keywords: Road network, Transport, eco-city, Criteria

126. TRAFFIC DEVELOPMENT PLANNING IN SMART URBAN IN VIETNAM

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Abstract: The transport system plays an important role in urban development planning, deciding the urban structural morphology. he planning of development and management of the system of cooperation and transport is reasonable, contributing to the development of economy, social stability, minimizing environmental pollution, contributing to sustainable urban development. Smart urban development is a trend of many countries in the world. pplication of information technology in planning, urban management, operation of urban services, environmental protection, community safety in a smart way to improve the quality of life, promote growth economic, urban sustainable development. In Vietnam, the development of smart urban areas is at the beginning with many opportunities but many challenges. ietnam's cities are facing complex problems due to the speed of urbanization, rapid population growth, the gap between rich and poor, migration, traffic jams, security and health, education, energy, housing development, treatment of environmental pollution... In order to develop smart urban planning, especially transport development planning plays an important role. Urban transport system to satisfy the travel needs of the people optimally with convenient public transport services, a range of walking, comfort, and smart technology application in the supply. information to people ...Smart urban development needs to be developed on the basis of intelligent transportation system. Research strategies to develop smart urban transport, capacity building of urban traffic management agencies, service providers and community awareness.

Keywords: smart urban; urban transport; Smart urban transport

127. RECYCLE WASTE TO RESPONSE TO CLIMATE CHANGE

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Abstract: Informal recycling systems can bring significant economic and social benefits to developing countries. This paper studies that there are also climate change benefits associated with informal recycling. Despite the health and social problems associated with informal recycling, it provides significant benefits that need to be retained especially global issue such as climate change. The integrated methodology between the international researcher's groups of humanities social sciences (JEAI Recycurbs Viet) and engineering (AIM) in researching an important issue is encouraged and carried out which aims to achieve the multidimensional, comprehensive and higher significant research results. In which, The JEAI Recycurbs Viet (new research team in developing countries through partnership with the French National Research Institute for Sustainable Development research units) studies about the waste collection and recycle in the city of Hanoi in Vietnam and Asia-Pacific Integrated Model (AIM) is a family of analytical models which are developed by research institutes in Japan.

Keywords: recycle, informal waste recycling, greenhouse gas, climate change

128. METHODS AND EXPERIENCE OF JAPAN ABLE TO HELP VIET NAM IN CONSTRUCTION OF COLLECTION SEWERS AND CONNECTION OF SEWERAGE DEVICES

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Abstract: Most of wastewater treatment plants (WWTPs) which have been constructed in Vietnam are currently facing two problems: (1) Many WWTPs are not operating at full capacity because wastewater is not collected enough to the WWTPs; (2) BOD concentration in the influent of many WWTPs is low because the influent is from the interceptor sewer and storm water with the first cascade from combined sewer, in which the domestic wastewater is preliminary treated through the septic tank. Thus, the construction of interceptor sewers and connection of household sewerage devices should be implemented synchronously when building the WWTPs. Japan is the country which has much experience in sewerage and wastewater treatment, then learning their methods and experience shall help the development of sewerage projects in Vietnam better.

Keywords: Collection sewers, Connection, sewerage devices.

129. PLANNING AND CONSTRUCTION MANAGING THE URBAN GRADS AND DRAINAGE SYSTEMS TOWARD URBAN SUSTAINABLE DEVELOPMENT

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Abstract: These days, creative smart planning and sustainable development are the objectives of urban planning and management. It is necessary to discuss solutions in planning urban infrastructure systems and drainage systems, which cover from plan to construction, operation and maintenance. These solutions need to be carried out synchronously for the whole urban area and integrated with landscape plan as well as infrastructure systems plan. These solutions aim to protect the ecology balance, mitigate the concrete surface areas, increase the absorbability and reduce the flood flows towards sustainable urban development.

Keywords: The urban grads; Drainage systems; Sustainable urban development

130. CURRENT SITUATION AND FORECAST OF GREENHOUSE GAS EMISSIONS IN URBAN SOLID WASTE TREATMENT TO BUILDING THE VIETNAMESE CARBON MARKET

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Abstract: Socio - economic growth along with high levels of urbanization create increasing pressure on Vietnam's urban solid waste management. Intended Nationally Determined Contributions (INDCs) of Viet Nam also identifies the waste sector, including landfills, which is one of the main sectors contributing to the goal by 2030 to reduce 8% of greenhouse gas emissions (GHG) compared to the Business as Usual Scenario (BAU) in the base year 2010 [7]. The paper presents the current situation and forecast of GHG emissions from solid waste treatment in Vietnam to initially set up national database system to “Vietnam Partnership of Carbon Market Readiness - VNPMR”.

Keywords: Greenhouse gas, carbon market, urban solid waste

131. A METHOD FOR RELIABILITY IMPROVEMENT OF 22 KV POWER DISTRIBUTION SYSTEMS USING LOOP AUTOMATION

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Abstract: Automation of electric distribution systems have enhanced the effectiveness and reliability of electrical supply. Presently, there are a variety of technical solutions for distribution system automation. The application of LOOP AUTOMATION is proposed in this paper. This work presents the features of power system in Vietnam as well as the benefits of power system automation. The operational principle of LOOP AUTOMATION and how reclosers are configured to implement in this scheme is also described. A 22 kV distribution system in Gia Lam Power Company is used to validate the proposed solution.

Keywords: loop automation, power distribution systems, electric system reliability.

132. ASSESSMENT OF CURRENT STATUS AND STRATEGY FOR DEVELOPING WATER SUPPLY AND DRAINAGE SYSTEM FOR ENVIRONMENTAL PROTECTION DUY TIEN DISTRICT HA NAM PROVINCE TOWARD TO THE SMART URBAN

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Abstract: In the project of Duy Tien Urban Development Strategy towards smart urban 2030 and vision to 2050 (by Assoc. Vu Thi Vinh - Infrastructure planning specialist/Head of consultant team together with expert group set up in 4/2018) proposed five strategies, that is: urban-rural development; industry; agriculture, culture - tourism and infrastructure development [9]. Strategic part of infrastructure development includes: transport infrastructure; water supply; to drain off waste water; flood water drainage - irrigation and irrigation; electricity - lighting; telecommunications and solid waste management systems and cemeteries. Thus, in the infrastructure development strategy, the water supply and drainage system plays a very important role. Strategies proposed to develop a water supply and drainage system for Duy Tien district will contribute to achieving the objectives of the Scheme [9]. As one of the experts to develop the Duy Tien Urban Development Strategy. In this article, the author further analyzes and assesses the current situation and proposes strategies to develop water supply and drainage infrastructure systems to protect the environment, towards smart urban.

Keywords: Smart urban, water supply system, sewerage system

133. BIM SOLUTIONS FOR DESIGN, CONSTRUCTION AND MANAGEMENT IN DRAINAGE AND WATER SUPPLY OF BUILDING

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Abstract: Building information modeling (BIM) is a modern technology that aims to improve the way people to design, construction and operating works. Vietnam is already gearing up for making national construction code standards of BIM. With barriers and advantages in the construction field, BIM technology in Vietnam has a first step with the attention from the government, Ministry of Construction and the helpfulness of Construction Consulting and Design company. BIM achieves a certain level of success. This paper examines deverlopment and trend of BIM in Vietnam. Comparison Indicators for project with BIM or without BIM. This analysis uses BIM in project from design, construction and management and also Revit's drawbacks in BIM tecnology with The real processes of a work.

Keywords: BIM, MEP, water supply, drainge, construction, operating works.

134. APPLING DAXESOFT SOFTWARE PACKAGE TO IMPROVE THE QUALITY OF TEACHING AND LEARNING AT GENERAL HYDRAULIC SUBJECT

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Abstract: The application of information technology for teaching in general and teaching hydraulic of Universities in particular has become very popular. Along with the development of information technology, software simulation support for hydraulics also updated more. The software helps learners intuitive, easy to acquire new knowledge while stimulating interest learning, help teachers achieve high efficiency in the process of teaching and applying to scientific research and project. In this paper, it presents the application of hydraulic calculation software of Daxesoft (UK) to calculate basic problems in general hydraulics such as the flow rate from a tank, for a variety tank shapes, to calculate the tank empty time under flow due to gravity (Pipe flow advisor), calculating flow rate in a pipe, pressure drop in a pipe and sizing a pipe diameter (Pipe flow wizard), calculating fluid flow in open or closed loop pipe networks with multiple supply & discharge tanks, multiple pumps in series or in parallel, and multiple pipe sizes & fittings (pipe flow expert), Applying hydraulic software makes it easier for students to acquire knowledge. In addition, the software also apply to deploy for scientific research as well as to design basic hydraulic works.

Keywords: Pipe flow advisor, Pipe flow wizard, pipe flow expert, hydraulics, open channel, water supply network.

135. TREATMENT OF COLORED WASTE COLORED TEXTILE ACTIVITIES - CREATING COTTON WITH SUNPHAT IRON / Lime

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Abstract: In this study, wastewater treatment was dyed with iron sulphate / lime alum. The study was conducted on a sample of homemade wastewater with active dye Sunzol Black B 150%, Sunfix Red S3B 100%. The results show that the use of iron sulfate / lime alum has the ability to handle the high color, processing efficiency reaches 90-95%; COD removal efficiency reaches 70-72%. The optimal conditions for dye treatment and dye mineralization are: pH 11, stirring speed of 80 rpm, stirring time of 5 minutes, alum sulphate concentration of 850 mg / L and lime of 550 mg / L.

Keywords: wastewater treatment, textile dyeing; coagulated copper.

136. ASSESSMENT OF CURRENT STATUS AND PROPOSAL OF SOLUTIONS FOR IMPROVING SOLID WASTES MANAGEMENT AT CON DAO TOWN – BA RIA VUNG TAU PROVINCE

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Abstract: The study presents the results of practical research on solid waste management in Con Dao island district, Ba Ria - Vung Tau province. Survey results and actual surveys showed that solid waste in island district has its origin mainly from living and tourism resources of people and visitors. In recent years, the number of tourists to the island has increased sharply due to the development of land-based transport to the island, leading to an increase in the volume of solid waste in the locality. The amount of solid waste generated on the island is about 14-15 tons/day, collected to Bai Nhat treatment area for disposal by manual burial and burning. However, this treatment area has been overloaded, the amount of solid waste is about 70,000m^3. Based on the data collected from the survey process, the author proposes some solutions to improve the efficiency of solid waste management in the island district.

Keywords: Domestic solid waste;solid waste situation in Con Dao; proposed solutions.

137. RESEARCH APPLICATION OF CCTV TECHNOLOGY FOR OPERATION AND MAINTENANTE OF SEWER PIPELINES

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Abstract: CCTV (Closed Circuit Television) is a breakthrough in the application of information technology to monitor the operation and maitenante of the sewer pipelines. Using CCTV, the managers can observe the flow regime, the status inside the sewer pipelines is clearer and more accurate…, specialy for small pipelines. Therefore reduce risks and hazardous jobs for workers out of the gases (H_2S, NO_x, CH_4…).

Keywords: CCTV, operation and maitenante, sewer pipelines.

138. INTERGRATED INTELLIGENT TRANSPORTATION SYSTEMS PLANNING IN URBAN PLANNIG

Nguyễn Văn Minh

TS, Viện Quy hoạch Đô thị và Nông thôn Quốc gia

Abstract: Intelligent Transportation Systems (ITS) is being developed, researched and built by ministries, agencies and local authorities to solve the problem of traffic congestion. This issue has been studied by countries around the world since the 60s of the 20th century, but in Vietnam it is still in the early stages. The article presents an overview of the ITS and ITS planning and the relationship with urban planning in which in addition to the traditional planning content, it is necessary to integrate some new contents of ITS planning to meet the construction requirements building and managing the city in a new age.

Keywords: Urban planning, Transportation planning, Intelligent Transportation Systems, Intergrated planning

139. THE EXPERIMENTAL RESULTS AND THE ODM-2F FILTER DESIGN METHODOLOGY IN THE PROCESS OF ADVANCED WASTEWATER TREATMENT TO REUSE FOR THE PURPOSE OF WATER SUPPLYING WITHOUT DRINKING

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Abstract: Treatment and reuse of urban wastewater is needed in the future by 2030, with a vision to 2050, to ensure water supply for economic, social development, environmental protection - minimizing exploitation of natural water sources and sustainable urban development. The paper presents the experimental results of treatment of suspended sediment (SS) and proposed the ODM-2F filter design methodology in the process of advanced wastewater treatment from output of urban municipal wastewater treatment plant. That meets the reuse requirements for demand of urban non-dringking water.

Keywords: advanced wastewater treatment, ODM-2F filter materials, reuse of wastewater

140. UTILIZATION OF ANTENNAS AND PROPAGATION FOR PIPELINE TRACKING AND LEAKAGE DETECTING IN WATER RETICULATION

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Abstract: Nowadays, safeguarding, consuming drinking water reasonably and eradicating water loss are becoming multi-sectorial genuine concern around the globe. A sizeable amount of water loss on account of the flaws in the aging pipeline networks is confronting the water consumers, producers, legislators and regulators. The first and toughest question is how to find ruptures among huge water reticulation, whose conduits are frequently made of diverse materials and buried at various depths. This article lays emphasis on a number of innovative propagation techniques, contrasts them, and proposes several ways to integrate these methods for pipeline tracking and leakage detecting in water reticulation. The current work also proposes a Hungarian case study, which could be an invaluable source of reference for water leakage detection in Hungary, one of the leading countries in water resource management. Furthermore, the authors have proposed several sensible hypotheses, probably lying at the bottom of this degrading fluid transportation infrastructure that exist all over the globe.

141. TRANSPORTATION PLANNING TOWARD X.0 URBAN

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Abstract: Due to the rapid development of applied science and technology, urban areas have been created and changed, as well as society's superstructure and infrastructure. Transport system plays an important role in urban areas with many aspects including socio-economic development, decision on the form of spatial development structure, land use and other urban technical infrastructure systems. The paper presents generations of urban, urban development trends; generations of transportation planning and forecast of transportation planning in future cities.

Keywords: Transportation planning, industrial revolutions, urban area, urban development.

142. CITIZEN SCIENCE, CROWDSOURCING AND THE POTENTIAL AVAILABILITY OF CROWDSOURCING IN WATER-RELATED RESEARCH.

Ha Do Minh

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Abstract: Crowdsourcing is a new method in which the information collected by crowds. Leveraging the development of technology (i.e. personal devices, mobile phones, tablets), crowdsourcing or citizen science encourages citizen to collect and share the data to the scientists. By contributing data collection to the scientists, citizen also gain benefits, knowledge and excitements from this data collection. Crowdsourcing were used in many other fields of science such as astronomy, biology, transportation (e.g. VOV – Transportation, in Vietnamese is V.O.V Giao thông), however has not yet gained the popularity in water research. Flood information in general is hardly collected, especially during the flooding time due to flood temporal and spatial distribution. Otherwise, limitation of preservation process, equipment and human resources constraint the amount of floodwater data and increase the cost of dataset. With the features such as real-time data collection, numerous data input, wide-space distributed data, crowdsourced data is expected as low-cost method to enrich the sparse water-related data environment, especially in delta cities – where is flood-prone and has massive of potential "living sensors" – the citizens. This paper discusses about citizen science, crowdsourcing and the potential availability of crowdsourcing in water-related research in Vietnam context.

Keywords: crowdsourcing, crowdsourced data, citizen science, flood data.

SESSION 4:

ECONOMY AND URBAN DEVELOPMENT MANAGEMENT

143. WHAT ABOUT THE PEOPLE FROM URBAN DEVELOPMENT PROJECTS? - SPATIAL JUSTICE PERSPECTIVES

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Abstract: This paper aims at re-examining and reviewing urban development projects from 'spatial justice' perspective. Current urban development projects used to be planned and implemented by physical scale such as money, buildings and infrastructures, thereby neglecting human scale such as social networks, people's solidarity, and history in the project site. The impacts or results of development projects also tend to be approached by place's prosperity, somewhat apart from people's prosperity. In this context, any human scale cannot be found in the development project planning. Most projects for regional development fail to reflect people's prosperity, and tend to be evaluated just only from monetary terms. Especially, original residents cannot afford to pay for the new buildings and infrastructures constructed by urban development projects. In brief, urban development projects based on physical scale, in other words market-oriented development projects tend to replace the poor with the rich in the project site. Then more fundamental question can be raised, "For whom development projects?", or "What about the people from urban development projects?" Urban planners should answer this question from human scale perspectives, by complementing or modifying market principles in real estate market from 'spatial justice' perspective.

Keywords: Urban development projects, spatial justice.

144. URBAN PLANNING MANAGEMENT TOWARDS SUSTAINABLE URBAN DEVELOPMENT

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Abstract: Along with the process of industrialization and modernization, the urban system in Vietnam is paid much attention showing in the rapid increasing of urbanization rate of Vietnam as well as the number of cities and in the enhacement of the urban quality. Contributing to that success, urban planning has really taken part in creating resources in socio-economic development. In addition to that, the urban planning management in Vietnam still has isues that are not compatible with the market-oriented economy, not suitable to the administrative reform process and lack of stakeholders' participation. This article will analyze and evaluate the status of urban planning management as well as refer to lessons from some countries. Since then, the article will give some suggestions for renovation of urban planning management to suit the specific conditions of Vietnam in the context of international integration in order to build modern and sustainable Vietnamese cities which are rich in identity.

Keywords: Urban planning management, sustainable urban development, participation, integration.

145. PUBLIC SPACE OUT OF NOTHING: TOWARD THE USE OF TDR IN VIETNAMESES CONTEXT USING PRIVATE RESOURCES IN THE MAKING OF NEW PULBIC SPACES

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Abstract: Decree 11/2013/ND-CP of the Government on the management of urban development investment is a policy framework that needs to be concretized by effective implementation tools and solutions in urban development areas. On the other hand, it is necessary to ensure the sustainable development of Environment - Socio - Economic issues, based on the rights of the parties involved. The Transfer of Development (spaces) Right (TDR) programs has been successfully implemented in many countries around the world for the implementation of urban development policies with various objectives and implementation methods such as. The main objective of the program is to balance the benefits of affected parties in urban development projects. This paper presents some perspectives of new TDR program to develop policy mechanisms for the development of public spaces in VietNam urban which invested and operated by private resources, based on benefit sharing of stakeholders, including: Investors - Managers - Communities.

Keywords: Sustainable Development, Urban Policy, Real Estate; Air Right, Transfer of Development Right, Land use, FAR.

146. BREAKTHROUGHS TO DEVELOP QUALITY URBAN IN VIETNAM

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Abstract: Vietnam's urban area is in the development stage focusing on quantity, demonstrating by spreading urban development phenomenon, expanding urban areas beyond the actual development needs of the city. The phenomenon of cities those are racing to upgrade urban types by horizontal expansion, gathering and combining rural communes/area in order to achieve the target of population agglomeration and densification or area are quite common. In the future period, compact, green and smart city development is a trend focusing more on urban quality, which is expected to achive urban efficiency, sustainability, true quality of life of citizen, environmental protection, greenhouse gas emission reductions, efficient urban resource exploitation and meet the real needs and market demand. In that trend, the problem is how to create a breakthrough in the goal of urban quality development? The article discusses breakthrough ideas to achieve this goal

Keywords: Breakthrough, urban development, urban quality, Vietnam.

147. SUITABLE STREET GEOMORPHOLOGY FOR SUSTAINABLE CITIES: A CONSIDERATION IN TERMS OF URBAN SOUND ENVIRONMENT IN HANOI

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Abstract: Streets are one of major components of urban structure; they play important role in urban spatial arrangement. Street spaces and and street geomorphology are also formative and identifiable factor of an urban along with its development. Along the time, streets' geomorphology has been forming and then transforming to keep pace with socio-economic development and urban planners' viewpoint. We analyze street geomorphology in terms of urban sound environment through sound transmission phenomenon. Duration of sound transmission or sound level obtained in an urban area helps to clarify the environmental characteristics of that urban's space. Street space varies in terms of width, height, continuity or discontinuity, solidity or emptiness; all of those factors affect to sound transmission in urban space. Each urban space inherits a distinctive sound environment, each urban environment has its own sound field that reflects its spatial geomorphological characteristics. Street geomorphology which is suitable with urban sound environment will be best comfortable with that urban living environment. This is a necessary requirement toward sustainable urban development, now and in the future.

Keywords: Urban structure, urban space, urban geomorphology, street geomorphology, sound transmission, urban environment, sound level, urban comfort, sustainable city.

148. REALITY OF URBAN CONSTRUCTION AND MANAGEMENT IN HA DONG DISTRICT

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Abstract: Ha Dong is a district in the capital Hanoi, 10km southwest of the center. This is the place where the city-level administrative offices of the capital are located. Ha Dong is a land rich in cultural traditions and is now one of the localities with the fastest socio-economic development of Hanoi. In particular, in the past years, there are many key construction, traffic and urban infrastructure projects of the city which are gathered here: Roads around the land of the construction investment project of the Hospital and Trade center in Duong Noi ward, Yen Nghia drainage pumping station project, Constructing a project of 05 roads (BT) connecting urban areas and residential areas in the area ... However, the rapid development of these projects poses a challenge for Hanoi City as well as Ha Dong district in particular to pay special attention to urban construction and management to ensure stable development, orderly, sustainable, creating a favorable living environment for people in the region.

Keywords: urban management; construction project; traffic project; urban infrastructure project.

149. THE ROLE OF ECOSYSTEM SERVICES IN THE MANAGEMENT OF URBAN DEVELOPMENT IN VIETNAM TOWARDS SUSTAINABLE DEVELOPMENT

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Abstract: In a number of studies on planning method innovation in Vietnam, integrated planning is considered a new and effective way. It addresses a wide range of issues from urban finance, the environment, land and urban infrastructure in order to provide solutions that are associated with the goal of sustainable and efficient urban development. Specifically, among the three factors of sustainable development - Socio-Economic - Environment, the element of environmental sustainability always seems to be ranked behind the factors of economic and social development by long-term impacts. term and need a long time determined. Currently, the issue of protecting the natural environment in developing urban areas in Vietnam is facing many difficulties in general, of which, one of the biggest factors is the change of views on ecosystem services. , urban ecosystem in urban development management in association with planning orientation. Urban ecosystems need to be maintained and developed, or not, there should be specific policies in the protection of landscapes and urban ecosystems. The paper provides perspectives on urban ecosystems, ecosystem services and its important role in the sustainable development of urban areas based on the principles of integrated approach in planning research and design.

Keywords: Ecosystem Services, Urban Ecosystems, Sustainable Development, Urban Planning

150. DEVELOPMENT POLICY FOR URBAN AND PERI-URBAN AGRICULTURE IN THE HANOI'S URBANIZATION PROCESS

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Abstract: The process of urbanization is strongly happening in countries as well as in Vietnam; besides the positive impacts on the development of cities, it also reveals many negative impacts on the process of urban development in general and peri-urban areas where there are many pressures and difficult problems to be solved such as: population pressure, traffic, environment, inadequacies among urban areas and rural areas, etc.. Hanoi capital city with high urbanization speed, especially suburban districts, the policy of urban agriculture development is considered as one of the optimal solutions to help Hanoi overcome the challenges of urbanization and industrialization; moreover, sustainable urban and peri-urban agriculture development is an inevitable development trend of the future agricultural development process, contributing to reduce environmental disasters and protect energy and water sources, helping sustainable urban environment.The paper addresses other perspectives for ensuring sustainable urbanization for Hanoi - peri-urban agriculture: Policies and factors affecting peri-urban agriculture development; Opinions, recommendations and solutions for urban agriculture development policies of Hanoi City.

Keywords: Urbanization, Development policy, Peri-urban agriculture.

151. CONTRUCTION AND SMART URBAN DEVELOPMENT - THE INEVITABLE TREND OF VIETNAM IN THE COMING TIME

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Abstract: Many developed countries in the world have built successful urban model, smart cities. In Vietnam in recent years have mentioned this concept and have started to implement this model in some cities, but there are many questions of the construction of a smart urban in the implemental process. Urban Smart (Smart city) is a modern city, intelligent economy, environment, governance, transport, energy, health, education, and applies solutions advanced information technology. Information technology and communications are used efficiently, the government provides services, convenient to the people and businesses, contributing to improve the quality of life and increase the competitiveness of the economy. This article has refered to some basic contents to construct for intelligent urban, review the status intelligent urban construction in some cities and provinces of Vietnam, and propose some recommendations for forming and building smart urban, smart cities.

Keywords: Urban Smart, Smart city, information technology, economy, construction and urban development.

152. CONSTRUCTION PLANNING MANAGEMENT OF VIETNAM MILITARY BARRACK

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Abstract: Military barrack is a functional zone with useful constructions which serve the lives and activities of military officers and cadres. In terms of planning management, the military barrack is a small urban area with a special function.

The country places a strong emphasis on building a powerful army to assure security and defense on the entire territory. Therefore, the state focuses on investing in building military system to satisfy the demand for eating, accommodation, sport, and training especially the mobility to fight of soldiers. Building management of military barrack is divided into many levels such as battalion, regiment, the military zone which depends on the scale of the barrack.

The article introduces the overall situation of the management, planning and building of the military barrack in Vietnam. It analyzes the disadvantages and reasons which is the basis of the next researches to propose methods.

Keywords: planning, management planning, military barracks, Ministry of national defence

153. EXPERIENCES ON URBAN ARCHITECTURE, LANDSCAPE MANAGEMENT OF SEASIDE CITIES IN THE WORLD

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Abstract: Space and coastal landscape architecture management are always challenges for urban managers in the world. In the last two decades, the world has witnessed the spectacular transformation of big cities in the development of urban landscape and space. Urban and super-urban planning is gradually formed and managed in line with the national development orientation. This development is particularly strong in Asia in general and Southeast Asia in particular, and Vietnam is not out of that trend. Studying how to manage space, landscape architecture in coastal cities like Seoul, Taipei, Kuala Lumpur will help Vietnam supplement valuable lessons.

Keywords: urban management, spatial management, landscape architecture, international experience.

154. MOBILIZING RESOURCES FOR URBAN DEVELOPMENT INVESTMENT

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Abstract: Demand for urban development investment is huge, while government budget for construction investment is increasingly limited and the ability to access loans from international financial institutions and other countries is more and more narrow. Meanwhile, mobilizing resources for economic development investment actually includes many contents, functions and methods of research and implementation.

The determination of scientific bases, application of theoretical and empirical basis for mobilizing resources for urban development investment in accordance with Vietnam's practical conditions is an important foundation for the process of building and implementing urban development projects, both in a scientific and rational way which saves costs and improves investment efficiency.

Therefore, it is necessary to have appropriate synchronous solutions to mobilize all resources of society to participate in urban development investment.

Keywords: Resourses mobilization, urban development investment.

155. CONFERENCE TO REVIEW 30 YEARS OF FOREIGN DIRECT INVESTMENT IN VIETNAM

Le Thu Giang

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Abstract: After 30 years, Vietnam has become one of the countries that attracted FDI successfully. This capital is one of the important motivations for promoting Vietnam's economic growth, contributing to the implementation of many important socio-economic development goals of the country throughout the past. In addition to the achieved results, the FDI sector has also revealed many limitations. In the coming time, the forecast of international investment environment will have very fast changes, requiring us to have new solutions to attract more efficient and sustainable FDI ... The article will assess the outstanding results in attracting FDI over the past 30 years, pointing out some limitations, thereby offering some suggestions to boost the attraction of FDI in the new situation.

Keywords: foreign direct investment FDI, economic growth, socio-economic development, FDI enterprises, compete.

156. COMPLETING CAPITAL MOBILIZATION PLAN TO INCREASE REVENUE FOR ROAD MAINTENANCE IN VIETNAM

Nguyen Thi Tuyet Dung

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Abstract: Planning of road transport development in Vietnam to 2020 and vision to 2030 has emphasized the role of maintenance work in order to make the most of existing transport infrastructure capacity to ensure efficiency and sustainability in exploitation. The Government has also implemented numerous policies to mobilize investment capital for road maintenance and recorded some achievements (in the 2013-2017 period, the average capital allocated for national highway maintenance was VND 6,778.644 billion/year, many times higher than the period from 2009-2012 which was VND 2,615.13 billion/year). However, the limitations in planning to mobilize medium- and long-term capital make it difficult; granted capital for annual maintenance has not met the demand. Based on the analysis of existing capital and capital needs as well as the survey results, with the aid of SPSS software, the author has proposed solutions to complete capital mobilization planning through improving capacity for medium and long-term maintenance planning, which aims at increasing revenue for road maintenance.

Keywords: capital mobilization, maintenance plan, road maintenance.

157. THE ESTABLISHMENT OF MARKETING STRATEGIES IN REAL ESTATE ENTREPRENEURS DURING THE AGE OF 4.0-INDUSTRIALIZATION REVOLUTION IN VIETNAM

Dang The Hien

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Abstract: Real estate entrepreneurs play an important role in the development of Vietnamese economy while the establishment and application of marketing strategy during the ego of 4.0-industrialisation revolution is an survival issue that can define the development of the firms and real-estate market as well. There are numerous factors that can affect the establishment of firms' marketing strategies including: the factors involved in directing the operation and understanding customers; the factors involved in the compentance of approaching market, the factors involved in controllable abilities. These factors can play a variety of essential roles in defining diversified marketing strategies in real-estate firms in current globalisation economies, from that, the author can offer a framework of marketing strategies.

Keywords: Marketing strategies, real estate entrepreneurs, 4.0-industrialisation revolution.

158. THE ADAPTIVE CAPACITY OF HUMAN RESOURCES IN THE CONTEXT OF URBAN DEVELOPMENT: CASE STUDY OF BAC NINH PROVINCE

Cu Thanh Thuy

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Abstract: The process of urban development influences and directly impacts on many aspects of life such as economic development, social problems such as employment pressure, quality of human resources and immigration issues from rural areas to urban areas. Therefore, the study about the adaptive capacity of human resources in the context of urban Development is necessary, especially for localities with rapid speed of urbanization in the first group of the country like Bac Ninh province. The sustainable livelihoods analytical framework by DFID (1999) was used as a theoretical basis for this study. Data used for the study were collected from a random survey of 138 members with labour transference in the process of urbanization. With these collected data, the study calculates the specific adaptive capacity of each group of labor force resources including: physical resources, human resources, financial resources, social resources and natural resources. Research findings show that, the quality of human resources, financial resources of human resources has the lowest adaptive capacity index among the five resources. Based on that calculation, the author proposes recommendations to improve the adaptive capacity of human resources in the context of urban development in Bac Ninh province.

Keywords: Urban Development, human resources, Bac Ninh province.

159. PROBLEM–BASED METHOD FOR PROJECT–BASED TEACHING IN TERTIARY EDUCATION

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Abstract: Problem-based method is studied and applied in higher education institutions in many countries. This is positive for both teachers and learners. Instructors who are able to have the big picture shall form topics based on knowledge areas, which lead to the establishment of detailed lessons with common goals and skills to broaden the knowledge of learners. Learners shall earn the ability to analyze, thereby better master the taught knowledge and better practice skills in the learning process. Project-based is a type of teaching in which learners perform a complex learning task, which combines theory and practice and creates products that can be introduced. This task is carried out by learners with high self-reliance, from goal identification, planning, project implementation, inspection, adjustment, process evaluation and performance results. Combining problem-based with project-based teaching will stimulate cognitive activities, hence the learning attitude of learners has many positive factors. Promoted thinking ability shall help them enjoy and become more self-conscious on the path of seeking knowledge.

Keywords: problem-based teaching; project-based teaching.

160. A SOLUTION TO MOBILIZE FINANCIAL RESOURCES FOR SMART URBAN AREA DEVELOPMENT FROM SECURITIZATION OF CAPITAL FOR PROFITABLE FACILITIES

Nguyen Thuy Linh

MS, Lecturer, faculty of urban management, Hanoi Architectural University

Abstract: The demand for capital investment is a pressing issue for most cities in Vietnam. Meanwhile, the budget revenue of urban areas is very limited thus leading to the urgent need to seek other sources of capital to ensure the urban development. REITs (Real Esate Investment Trust) appear as a solution to mobilize capital from society transparently and effectively for the needs of profitable public facilities or commercial urban area. REITs serve simply as an intermediation between the real estate market and the stock market. Beside the main function of creating a new effective funding, REITs could also create and boost the liquidity in these fields. Moreover, the income generating from REITs would be more focused with low market correlation investment that provides diversification from equities and debt markets without the volatility of forex and commodities.

Keywords: Financial resources, REITs, Smart urban area, profitable facilities.

161. SOLUTIONS IMPROVE ATTRACTION OF INVESTMENT FOR ROAD DEVELOPMENT IN VIETNAM

Pham Thi Tuyet[(1)], La Ngoc Minh[(2)] , Le Minh Ngoc[(3)] and Chu Minh Anh[(4)]

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Abstract: From theoretical and practical studies, the author has surveyed and interviewed experts and scientists in the field of road transport on the situation and solutions to attract investment capital for road development in Vietnam in recent years, now and in the future, to propose appropriate, synchronous and scientific solutions to enhance the capacity to attract investment capital for road development in Vietnam in the near future. The demand for socio-economic and political development of the country.

Key words: To attract investment capital, road traffic in Vietnam, attraction of investment in road development, solutions to attract investment in road traffic.

162. ANALYSIS OF THE FACTORS INFLUENCING URBAN ECONOMIC DEVELOPMENT

Nguyen Kieu Nga

MS, Lecturer, faculty of urban management, Hanoi Architectural University, Email: ngank@hau.edu.vn

Abstract: Economic development is important in urban and countries. So, the questions are: What are the factors of economic development? Why do some cities grow faster than others? The author points to a number of important factors affecting urban economic development, which may change or not in the short and long term. For example, some elements of natural resources, geographical location, urban manager's capacity, infrastructure, market size, human resources...

Keywords: urban economy, economic development, urban, analysis.

163. ANALYZING CONSTRUCTION INVESTMENT PROJECT IN RISK CONDITIONS USING QUANTITATIVE METHODS

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Abstract: Investment is the activity of investing capitals in socio-economic fields to gain benefits in different forms. Construction investment is often implemented in an uncertain context, long investment period, large amount of money, supplies and labor, and long operation. These factors put construction investment projects at high risk and make what happen in reality deviate from forecast, which is too much to accept. Therefore, besides analyzing financial efficiency, investors must pay attention to the safety of the project, in which financial safety plays a very important role. This paper is going to examine some quantitative analysis methods and indicate the conditions to use them for economic analysis construction investment projects in risk conditions. The purpose is to help managers and investors have the right decision in construction investment activities.

Keywords: Project sensitivity, risk, mathematical expectations.

164. SEVERAL LESSONS LEARNT FOR VIETNAM REGARDING MANAGEMENT OF INVESMENT PROJECTS IN URBAN DEVELOPMENT BY PPP METHOD IN SOME COUNTRIES FOR THE CURRENT PERIOD

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Abstract: The Public Private Partnership model (PPP) is widely adopted by countries all over the world for the development of urban infrastructure. Through PPP, apart from the benefits gained, there are many failures occoured in both developed and developing countries. Previous experience proved that the effectiveness of PPP projects is under the influence of various factors which mainly are ones that releated to the management of the public and private investor. Currently in Viet Nam, there is a need for further study on the experience of implementing PPP at the early development stage in other countries.

Keywords: International experience, project management, urban development, PPP.

165. AUTOMATIC WORKFLOW FOR QUANTITY TAKE OFF & COST ESTIMATION

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(2) Vice Rector, Hanoi Architectural University

Abstract: This paper shows the analysis about the existing issues that not have been solved yet of the current popular workflow of quantity take off and cost estimation, then propose other methods, utilizing the value of BIM model, combining with other global solutions. This document is also mention and introduce one solution that developed by its author and successfully implementation into the projects that he was involved.

Keywords: BIM (Building Information Modeling), 5D BIM, Quantity Take Off, Cost Estimation.

166. MANAGEMENT STATEMENT OF VIETNAMESE URBAN LAND USE IN 2014 - 2018

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Abstract: Urban land is the foundation for urban construction, development and land inventory, showing that the urban area of Vietnam (2015) has 1,642,420 ha, accounting for 4.96% of the national natural area. an increase of 125.27 thousand hectares compared to 2010, an average of 530 m2/person, however there are big differences between regions, urban construction land has 605,870 thousand hectares, accounting for 36.89% of urban land and average land. average of 195.44 m2/person, structure: the rate of land reserved for infrastructure construction is still low (29.78%), transportation land is 16%, (compared to the requirement of 20-25%); the area of land for water supply and drainage, tree land is lower than the prescribed standards; the water surface area (ponds and lakes), and land for waste collection and treatment are lacking. Average index of residential land / person: 56, 06 m2 / person, (highest in the Southeast: 40.73 m2 / person, lowest in the Central Highlands 14.60 m2 / person). The use of residential land is not yet economical and inefficient; houses mainly divided into lots, adjacent houses, tube houses; High-rise condominium also accounts for a low rate, Social housing has not met the requirements. According to Resolution 134/2016/QH13 The Adjustment of Land Use Plan to 2020 and the 5-year land use plan (2011-2015), Vietnam's urban land fund by 2020 has: 1,941,740 ha, (in which urban land:199,130 ha, decreasing 3,300 ha compared with the approved in Resolution 17/2011 / QH13). The adjustment of residential land is necessary, and it shows the forecast of urban land fund when planning land use planning is not close to reality and shortcomings of the real estate market (housing segment).

Keyword: Uban Land Use, Management.

167. STUDYING THE IMPLEMENTATION OF SOME RIGHTS OF LAND USERS ON HOA LU DISTRICT, NINH BINH PROVINCE

Tran Trong Phuong[(1)], Ngo Thanh Son[(2)], Tran Van Khai[(3)], Nguyen Bich Ngoc[(4)]

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Abstract: Researching the implementation of some land use rights (LURs) in the area of Hoa Lu district, Ninh Binh province to propose solutions to improve the efficiency of land use rights. The research results showed that in the period of 2013-2018, the district had 4,024 transfer transactions, 1,068 inherit transactions, 1,757 donate transactions and 7,783 mortgage transactions. Procedures for implementing land use rights at the Land Registration Office were easy to understand and implement; most transactions were done according to appointment cards; The ability to implement regulations relating to the implementation of LURs and to find information and LUR transactions was relatively easy. However, all types of land use fees, charges and taxes were high. In order to improve the effectiveness of LUR implementation in Hoa Lu district, it is necessary to synchronously implement solutions: Solutions to manage activities related to LUR implementation; Solution of propaganda and education and law dissemination; Solutions to investment in facilities and staff; Policy solutions.

Key words: land management, land use rights, Hoa Lu district.

168. THE VOLATILITY OF REAL ESTATE PRICES IN VIETNAM OVER THE YEARS - CURRENT SITUATION & SOLUTIONS

Vuong Thi Anh Ngoc

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Abstract: Over 30 years, Vietnam's real estate market has grown and achieved many achievements. However, there are many inadequacies and problems have not been solved yet. One of the obstacles is that real estate prices in Vietnam is higher many times than per capita income and is higher many times than the countries with the same per capita GDP. Based on this fact, the article analyzes about the real estate prices fluctuations in Vietnam through each stage to show the uncertainty of the real estate, to find out the causes and propose some management solutions for sustainable development.

Key words: Real estate, real estate market, price, price volatility.

169. MANAGEMENT OF CONDOMINIUM OPERATION AND USE – THE CHALLENGES IN REAL ESTATE MARKET DEVELOPMENT

Nguyen Thi Lan Phuong

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Abstract: The real estate market is one of the important markets of the economy, although the level of the proportion of the real estate in the total social wealth in the countries are different, it often accounts for about 40% of the material wealth of each country. It can be said that the development of the real estate market has a pervasive impact on many aspects of a nation's activities; so many countries around the world consider the real estate as one of the "pulls" of the economy. The development of the real estate market is always affected by many different factors, such as issues of policy mechanisms, issues of market trends, prices, etc; however, one of the important factors is customer interests as well as traditional - social perceptions. This article deals with the consequences of the negative impact of real estate use on the real estate market in general and the management of the use of condominiums in particular on the real estate market of big cities like Hanoi and Ho Chi Minh City. The article provides an overview of the real estate market with condominium types; introducing different types of condominiums and development trends. The impacts and influence on the real estate market due to the operation and use of condominiums are also analyzed and mentioned such as issues of policies, mechanisms, management organizations, etc and inadequacies in the management and operation and use of condominiums.

Keywords: Real estate market; Management of operation and use of condominium; Policy mechanisms ; Regent, management board.

170. THE PARTICIPATION OF COMMUNITY IN MANAGEMENT OF NEIGHBORHOOD IN PARKS/PLAYGROUNDS IN HANOI – THE REALITY AND SOLUTION

Nguyen Lien Huong

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Abstract: The role of public space is universal, yet its functions and characteristics vary according to the particularities of the area and the community there. This research goes around a central question of how to manage public space with the participation of community. There were many international lessons that show way forwards. Like many fast developing capital cities, Hanoi has been facing increasing challenges caused by market-based hyper-urbanization, which oftentimes neglects to provide adequate social space for residents. Neighborhood parks/playgrounds are physical environments and social places for people to relax, exercise and interact. Therefore, they should be planned and managed with the participation of local community who know well their reality. Besides, the community's power always ready to improve the life quality.

Keywords: neighborhood in parks/playgrounds management, the participation of community, Hanoi.

171. COMMUNITY PARTICIPATION IN THE MANAGEMENT AND DEVELOPMENT OF THE HOUSING REAL ESTATE MARKET

Ngo Bao Ngoc

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Abstract: In the past two decades, along with the growth of the economy, the real estate market in Vietnam has had many amazing changes and development. The real estate market not only develops at a steadily pace in scale but also develops with various types of real estate markets. To facilitate the real estate market ti contribute to the market economy positively, the government has issued policies and regulations to attract investors and stakeholders, especially to meet housing needs for the market. The process of managing and developing the housing real estate market in Vietnam, especially in big cities such as Hanoi, Ho Chi Minh city and Da Nang, has many great opportunities and challenges, it will only mention opportunities and challenges when mobilizing community participation in managing and developing the housing real estate market. The article will generalize the process of developing the real estate market in general and the housing real estate in particular; introduce the current types of housing real estate and development trends; positive impacts in mobilizing community participation; as well as inadequacies in the current management and development policies of real estate market.

Keywords: Community participation, Real estate market, housing real estate market, Mechanism, Policty, Management.

172. PUBLIC TRANSPORT MANAGEMENT IN HAI PHONG CITY WITH INTEGRATED ORIENTATION

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Abstract: Hai Phong city has a development orientation up to 2035, vision to 2050 as a municipality, building a modern and synchronous system of infrastructure and urban area; promoting the role of an important transportation hub of the whole country, the main gate to the sea of the northern provinces. The public transport system has also been focused on developing with many different types such as buses, bus rapid transit and urban railways. According to this orientation, the public transport system is quite complicated, so research, analyze and introduce integrated orientation of public transport management consistent with the development and integrated management trend of Vietnam and the world.

Keywords: public transport management, integrated, TOD, Hai Phong.

173. EFFECTS OF CLIMATE CHANGE ON THE DEVELOPMENT OF URBAN INFRASTRUCTURE IN QUANG NINH PROVINCE

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Abstract: Quang Ninh province will be severely affected by the impact of climate change (CC) and sea level rise. Quang Ninh to 2050 will be: large urban areas of international stature; Motivation national economic development; the historical and cultural heritage of international, world natural wonders. The challenges for sustainable development due to the impact of climate change on the development of urban infrastructure have to identify clearly. The solutions are: (1) constantly update database and the scenarios for the sea level rise; (2) Construction and management solutions must be proactively integrated, integrated and continuously implemented from research to specific implementation.

Keywords: climate change, sea level rise, urban infrastructure, sustainable development.

174. SOUND MATERIAL-CYCLE SOCIETY IN JAPAN: A REVIEW FROM KYOTO CITY

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Abstract: Our resources is reducing more and more due to the economic activities, it is essential that each of us takes up the global environmental issues and endeavor to attain the mutual achievement of environmental protection and economic development. The key to this mutual is the power of science and technology. The Japanese notion of “mottainai”, which recognizes value in things and reduces the amount of waste, has the potential to be even more effective when linked to science and technology. In Japan, people, the central and local governments and businesses are working cooperatively to establish a sound material-cycle society in which waste is reduced, products are reused and waste is recycled as a resource under the Fundamental Law and Plan for Establishing a Sound Material-Cycle Society. A review provides lessons learned in Japan through years of experience in dealing with environmental issues, will prove useful for those who are seeking to intensify the 3Rs approach..

Keywords: sound material-cycle society, 3R, recycling.

175.AN INTEGRATION OF TECHNOLOGIES AND COMMUNITY EMPOWERMENT ON COMMUNITY PLANNING- A CASE STUDY OF YANGMINGSHAN'S TERRACED FIELDS

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Abstract: Urban Planning is an interdisciplinary professionn and requires many disciplines integrated together. However, most of academic researches only focus on one-dimension study, either quantitative or qualitative. This research used GIS (geographic information system) technologies to provide evidences to help farmers understanding the current environment and help the local farmers to improve their business and quality of daily life.

The case study area is the terraced rice fields in Yangmingshan National Park. Yangmingshan National Park is located in the northern margin of the Taipei Basin with a large area. It is an important ecological core of Northern Taiwan, as well as the source of numerous important rivers and have become a special cultural landscape within Yangmingshan National Park. However, the environment and climate changes, as well as the impact of urban expansion activities, resulting in maintaining the irrigation system and the terraced area is decreasing. Therefore, how the conservation and sustainable management of this system are becomes one of Yangmingshan National Park's important issues for future sustainable development. Through community meetings, local leaders' interviews, and surveys, we helped residents focus on the current irrigation ditches and terraced as a basis for the terraced planning and management. Giving the educational purposes, planning combined with strengthen the protection of the ecological habitat.

Keywords: GIS, community empowerment, national park, terraced fields

CONFERENCE PROGRAM SESSION 1

INTERNATIONAL CONFERENCE ON ARCHITECTURE AND CIVIL ENGINEERING (ICACE 2019)

"EDUCATION - INTERGRATION & SUSTAINABLE DEVELOPMENT"

Venue: Room U204 - Hanoi Architecture University (HAU), km 10, Nguyen Trai street, Thanh Xuan district, Hanoi, Vietnam.

Time: 10h15- 12:30 , 16th September 2019 (Monday)

Tiểu ban 1/ Session 1 - Room U204		
Thời gian/Time	**Chương trình hội thảo /Conference program**	**Người trình bày /Address**
Chair: Assoc. Prof. Dr. Arch Luong Tu Quyen, Dr. Arch Vuong Hai Long		
10h15-10h35	Presentation 1: Symbiotic relations between people and urban authorities to develop smart cities	Pham Trong Thuat. *Faculty of Architectura - Hanoi Architecture University (HAU)*
10h35-10h55	Presentation 2: LAND – CULTURE:A New Paradigm	Viraj Chatterjee. *Landscape architecture - University of Hong Kong (HKU)*
10h55-11h15	Presentation 3: Urban Design - From Theory to Practice in Vietnam	Do Tran Tin - Pham Thi Ngoc Lien. *Faculty of Urban and Rural Planning - Hanoi Architecture University (HAU)*
11h15-11h35	Presentation 4: Teaching architectural history and conservation to educate and train architects in sustainable development	Dang Hoang Vu. *Faculty of Architectura - Hanoi Architecture University (HAU)*
11h35-11h55	Presentation 5: A study on policies transformation - Experiences to maintain Ha Noi greenbelt and green corridor	Dao Phuong Anh: *Faculty of Urban and Rural Planning - Hanoi Architecture University (HAU)*
11h55-12h15	Presentation 6: Challenges on fire safety in orgnization of the high- rise architecture in Viet Nam	Tran Phuong Mai. *Faculty of Architectura - Hanoi Architecture University (HAU)*
12h15-12h30	**Thông tin khoa học - Scientific Information**	
12h30-13h30	**Tiệc chiêu đãi - Lunch Party**	

CONFERENCE PROGRAM SESSION 2

INTERNATIONAL CONFERENCE ON ARCHITECTURE AND CIVIL ENGINEERING (ICACE 2019)

"EDUCATION - INTERGRATION & SUSTAINABLE DEVELOPMENT"

Venue: Room U401 - Hanoi Architecture University (HAU), km 10, Nguyen Trai street, Thanh Xuan district, Hanoi, Vietnam.

Time: 10h15- 12:30 , 16th September 2019 (Monday)

Tiểu ban 2 / Session 2 - Room U401		
Thời gian/Time	**Chương trình hội thảo /Conference program**	**Người trình bày /Address**
Group 1 Chair: Assoc. Prof. Vuong Van Thanh, Dr. Nguyen Cong Giang		
10h15-10h35	Presentation 1: Numerical simulation of deformation on clayey soil using the elasto-plastic theory for settelement prediction	Kazuhiro Kaneda, Tomohiro Tanikawa, Junji Hamada / *Takenaka Corporation*
10h35-10h55	Presentation 2: Behavior of earth concrete wall under shear: from experimental to numerical approach	Thi Loan Bui, Xuan Huy Nguyen, Tien Dung Nguyen, and Tan Trung Bui. *University of Transport and Communication, INSA Lyon*
10h55-11h15	Presentation 3: Evaluation of the effects of dewatering schemes for foundation pit on displacement of surface and diaphragm wall	Minh Tinh Do, Van Hiep Len, Thi Chinh Tran and Minh Ngoc Do. *Hanoi Architecture University, Universty of Transort Technology*
	Group 2 Chair: Assoc. Prof. Pham Phu Tinh, Assoc. Prof. Vu Quoc Anh	
11h15-11h35	Presentation 4: Characterization of damage in cement-based beams by acoustic emission technique (aet)	Tat Tam Nguyen. *Hanoi Architecture University*
11h35-11h55	Presentation 5: Predicting strength of self-consolidating concrete with artificial neural networks (ann)	Trung Tu Nguyen, Hoang Hiep Vu and Thanh Hung Pham. *Hanoi Architecture University*
11h55-12h15	Presentation 6: Experimental investigation for shear resistance of exterior joints using ultra high performance steel fibre reinforced concrete (uhpsfrc) under cyclic load reversals	Trung Hieu Tran. *Hanoi Architecture University*
12h15-12h30	Thông tin khoa học - Scientific Information	
12h30-13h30	Tiệc chiêu đãi - Lunch Party	

CONFERENCE PROGRAM SESSION 3

INTERNATIONAL CONFERENCE ON ARCHITECTURE AND CIVIL ENGINEERING (ICACE 2019)

"EDUCATION - INTERGRATION & SUSTAINABLE DEVELOPMENT"

Venue: Room U306 - Hanoi Architecture University (HAU), km 10, Nguyen Trai street, Thanh Xuan district, Hanoi, Vietnam.

Time: 10h15- 12:30 , 16th September 2019 (Monday)

Tiểu ban 3/ Session 3 - Room U306		
Thời gian/Time	**Chương trình hội thảo /Conference program**	**Người trình bày /Address**
10h15-10h20	Introdution at session	
10h20-10h25	Speech	Head of Infrastructure Department. Ministry of Construction
Chair: Assoc. Prof. Dr. Tran Thanh Son		
10h25-10h40	ICACE-3.01S: Necessity of pipe collection system and formalization of comprehensive household connection on Planning of urban sewage systems	Mr. MORI Tamaki - *JICA Expert of Project for Enhancing Management Capacity of Sewage Works in Socialist Republic of Vietnam*
10h40-10h55	ICACE-3.02S: Utilization of Antennas and Propagation for Pipeline tracking and Leakage detecting in Water reticulation	Thien Hoang Dinh, Tamás Madazász, Balázs Kovacs - *Institute of Environmental Management, University of Miskolc, Hungary*
10h55-11h10	ICACE-3.03S: Experiences and Challenges in Japan for sustainable development of sewerage systems	Ms. Makoto Ibaraki - *JICA Expert, Sewerage Policy Advisor in Ministry of Construction*
11h10-11h25	Discussion	
Chair: Assoc. Prof. Dr. Nguyen Hong Tien		
11h25-11h40	ICACE-3.04S: Smart city and technical infrastructure planning	Asso. Prof. Nguyen Hong Tien - *Vietnam Water Supply and Sewerage Association*
11h40-11h55	ICACE-3.05S: Potential application of machine learning models in examining travel mode choice	Doctoral candidate. Tran Vinh Ha, Asso. Prof. Takumi Asada, Asso. Prof. Mikiharu Arimura *Muroran Institute of Technology, Hokkaido, Japan*
11h55-12h10	ICACE-3.06S: Transportation planning toward X.0 urban	Dr. Nguyen Van Minh - V*ietnam Institute for Urban and Rural Planning – Ministry of Construction*
12h10-12h25	Disscussion	
12h25-12h30	Conclusion	
12h30-13h30	Lunch Party	

CONFERENCE PROGRAM SESSION 4

INTERNATIONAL CONFERENCE ON ARCHITECTURE AND CIVIL ENGINEERING (ICACE 2019)

"EDUCATION - INTERGRATION & SUSTAINABLE DEVELOPMENT"

Venue: Room U411 - Hanoi Architecture University (HAU), km 10, Nguyen Trai street, Thanh Xuan district, Hanoi, Vietnam.

Time: 10h15- 12:30 , 16th September 2019 (Monday)

Tiểu ban 4/ Session 4 - Room U411		
Thời gian/Time	**Chương trình hội thảo /Conference program**	**Người trình bày /Address**
10h15-10h20	Introduction at session	
Chair: Assoc.Prof.Dr.Arch. Nguyen Tuan Anh - Prof. Dr. Sang Hyuck Sohn		
10h25-10h40	Presentation 1: Public space out of nothing: toward the use of TDR in Vietnameses context using private resources in the making of new pulbic spaces	PhD. Nguyen Hoang Minh *Post Graduate Falcuty, HAU*
10h40-10h55	Presentation 2: Breakthroughs to develop quality urban in Vietnam	PhD. Dao Thi Nhu (1), PhD. Nguyen Quoc Toan (2) (*1) Ministry of construction, (2) University of Civil Engineering*
10h55-11h10	Experiences and Challenges in Japan for sustainable development of sewerage systems	Ms. Makoto Ibaraki - *JICA Expert, Sewerage Policy Advisor in Ministry of Construction*
11h10-11h25	**Discussion**	
11h25-11h40	Presentation 4: A solution to mobilize financial resources for urban development from securitization of capital for profitable public facilities or commercial urban area	MSc. Nguyen Thuy Linh *Hanoi Architectural University*
11h40-11h55	Presentation 5: The participation of community in management of neighborhood in parks/playgrounds in Hanoi – The reality and solution	MS. Nguyen Lien Huong *Hanoi Architectural University*
11h55-12h10	Presentation 6: Public transport management in Hai Phong city with integrated orientation	MS. Le Thi Minh Huyen *Hanoi Architectural University*
12h10-12h25	**Discussion**	
12h25-12h30	**Conclusion and Thanking**	
12h30-13h30	**Lunch Party**	


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