PROCEEDING

SUSTAINABLE DESIGN IN
Creative Industry
TOWARDS BETTER HUMAN LIFE

10 March 2011, Denpasar Bali

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Sepuluh Nopember

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INTERNATIONAL CONFERENCE ON
CREATIVE INDUSTRY 2011

SUSTAINABLE DESIGN IN
CreativeIndustry
TOWARDS BETTER HUMAN LIFE

Certificate

Awarded to

Prasetyo Wahyudie

In appreciation of contribution as **Presenter**
in **International Conference on Creative Industry 2011**,
theme: Sustainable Design in Creative Industry Towards Better Human Life

10 March 2011 at Sanur Paradise Plaza, Denpasar - Bali, Indonesia

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Faculty of Civil Engineering and Planning ITS

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Ir. Baroto Tavip Indrojarwo, M.Si

Dr. Ir. Bambang Iskandriawan, M.Eng.

PROCEEDING

SUSTAINABLE DESIGN IN CREATIVE INDUSTRY TOWARDS BETTER HUMAN LIFE

INTERNATIONAL CONFERENCE ON CREATIVE INDUSTRY 2011

Organized by:

DEPARTMENT OF INDUSTRIAL DESIGN

Faculty of Civil Engineering and Planning

Sepuluh Nopember Institute of Technology

10 March 2011, Denpasar Bali

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PREFACE

Welcome address from

Prof. Ir. Priyo Suprobo, MS, PhD.

Rector of Sepuluh Nopember Institute of Technology

Ass. wr. wb. and sincere greetings to all.

It gives me great pleasure to welcome all the speakers, participants and distinguished guests to the International Conference on Creative Industry (ICCI) 2011 at Sepuluh Nopember Institute of Technology. There are fourteen field of creative industry will be discussed in parallel session. I trust that you will find the ICCI 2011 informative and Interesting, and hope that numerous creative industry discussions will be deliberated and friendship will bloom as well. I hope that you exploit your best shot and effort during this one day, not only to present your paper but also to get to know each other and broaden your relationship. The Organizing Committee is ready to assist you and help you. Please, feel comfortable during your stay in Bali.

Sepuluh Nopember Institute of Technology is among the top universities in Indonesia which focus on research-driven activities especially in science, engineering and art fields. The variety of research activities are multi-disciplinary in nature, extending across faculties and departments, often crossing traditional subject boundaries. Thus, this conference is initiated to provide opportunities for the young researches to gain invaluable experience and useful insights on issues pertinent to their areas of specialization. In addition, this conference also aims to enhance the contribution and strengthen the role of the graduate scholars in responding to various issues and challenges facing graduate education.

I would like to take this opportunity to express my greatest utmost gratitude to the Reviewers and the Organizing Committee for their relentless effort and undivided attention in ensuring the successful implementation of the conferences. Las but not least, my sincere appreciation to all the sponsors and all those involved in making this seminar possible

Personally, I hope you gain benefit from this conference, and get pleasure from your stay in Bali.

Wass wr wb. Thank you.

PREFACE

Welcome address from

Prof. Ir. Joni Hermana, MSc, PhD.

Dean

Faculty of Civil Engineering and Planning

Institut Teknologi Sepuluh Nopember (ITS)

Assalamualaikum Wr. Wb.
Peace be upon all of us

First of all, I would like to welcome you all – our distinguished guests and delegates from national and overseas to the International Conference on Creative Industry 2011. I wish you have a pleasant stay in Indonesia, especially here, in Bali and may this conference be a rewarding experience to you.

I should admit that it is a great honour and privileged for me to address a message in this wonderful occasion. The Conference – which is organized by our colleagues from the Department of Product Design, Faculty of Civil Engineering and Planning – is hoped to become the accentuation of ITS commitment towards the development of creativity as a part of new economic backbones for the nation. As we know we have just been leaving the information technology era to the –what so called – conceptual era.

The conference is conducted to cover a wide range of design and creative industry issues. I hope this one day conference will facilitate interesting discussions and exchange of ideas between all participants. Furthermore it would provide us a state-of-the-art of information and knowledge in the challenging world of design and creative industry. The growing success of our institutions and expertise should urge us to develop our competitive capabilities, especially as we face certain challenges which would be overcome through more smart works, working together hand in hand. We will work mutually to develop a common path and collaboration opportunities for future actions and researches on multi disciplinary design areas.

I would like to take this opportunity to express my sincere appreciations and gratitude to the invited speakers and the organizers of the Conference for their commendable efforts in organizing and conducting the conference and also to the co-organizers as well as participants for their distinctive roles in making this conference a success.

I would like to conclude my remarks by wishing all the best for the Conference and wish all participants have a very pleasant stay here in Bali.

Thank you.

Wassalamualaikum Wr. Wb.

PREFACE

Welcome address from

Ir. Baroto Tavip Indrojarwo, MSi

Head
Department of Industrial Design
Faculty of Civil Engineering and Planning
Sepuluh Nopember Institute of Technology

Ass. wr. wb. and sincere greetings to all.

First of all, kindly, I would like to give you a great gratitude for you coming to this important event that is conducted by our department. Our department has been founded for 13 years. As an education institution, it is still an infant. However, we have tried to give our best in contributing our knowledge in the field of Design and Creative Industry especially how we contribute to help the community for having better design facilities, indirectly.

We know that it is still a long way to achieve the target; however, still one step is much better than nothing.

This international conference will help us and, I believe you too, to comprehend more knowledge especially in design and creative industry.

Notwithstanding, the special topic of this conference is for the sustainable design in creative industry, but it will not confine the problems on this region since other regions may have serious problems related to design and creative industry.

We hope that you will enjoy all programs in this conference.

Wass wr wb. Thank you.

PREFACE

MESSAGE from

Dr. Ir.Bambang Iskandriawan, M.Eng.

The Chairman of ICCI 2011 Organizing Committee

Ass. Wr. Wb. and sincere greetings to all.

On behalf of the Organizing Committee, it is my greatest pleasure to extend our warmest welcome to all of you to the 1st International Conference on Creative Industry 2011 (ICCI2011).

The 1st International Conference on Creative Industry has been organized by Department of Industrial Design, Faculty of Civil Engineering and Planning, Sepuluh Nopember Institute of Technology. It will be an opportunity for international community, academics, scientist, and engineers to present and to exchange much ideas and their progress in researches. In line with educational process, this technical conference is designed to promote tremendous researches, enhance the skill in paper writing and oral presentation. All the excellent papers and experiences gained in this conference will be much valuable to increase the quality of research and design achievement. This year around 126 abstract papers had been reviewed and 90 full papers from Indonesia and overseas are accepted for the conference proceeding.

Two keynote and three plenary speakers are invited in the plenary session after opening ceremony. These distinguished speakers are The Minister of Cooperative and Small Medium & Enterprise and General Director of National Export Development as the representative of Trade Ministry. Oral session will be held during conference will be focusing on all aspect in creative industry. We are fortunate to have a lot of fine quality papers that belongs to:

25 papers on Graphic, Advertising, Film, Videos and Television
20 papers on Architecture & Interior and Environment
26 papers on Product and Craft
19 papers on Fine Art, Design Management, Research & Development, Social Art, Music, Fashion and Recording

I would like to thank you to various contributors, speakers and participants for your generous support of this conference. It is my pleasant duty to thank all the members of Organizing Committee and the Advisory Boards of Reviewers for their advices and help. We are grateful to all the Sponsors, Supporters and Exhibitors for their spontaneous response and encouragement by way of committing funds and extending help in kind.

I would like to sincerely thank the Dean of Faculty of Civil Engineering and Planning, ITS as well the ITS Rector, for fully supporting the Committee to make this conference happen and to make it a success.

Finally, we encourage you to explore the beautiful sights of Bali, East Java and Indonesia during your stay. I wish you a very pleasant stay here in Bali and finally, let me wish all of you a meaningful and fruitful conference.

Thank you and hope to see you again in ICCI 2013. Wass. Wr. Wb.

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Sponsor and Association:

Strategic Use of Computers for Developing Creativity in Studio Design

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Abstract-**The basic principle of computer technology in terms of the use of hardware and software in the world of design is utilized to assist in working to improve: efficiency, effectiveness, creativity and quality of the work of designers. On the other hand, the design itself is an unique process and not everything can be done by computer, so the natural ability of a designer is still needed.**

Level 1,2,3,4 design studio activities and final project gives adequate time and provide opportunities for synergizing ability to control and use of computer in its application to activities in the design studio, is expected to even further strengthen the quality and creativity and the ability to design basic. Therefore we need appropriate learning strategies and integrated; curriculum as a whole, related subjects and methods of learning studio itself. This integration is expected to fulfill the desire to shape students to become designers who are more reliable than previous learning systems.

The study of learning strategies and examples of studio application of computer technology shows that the application of computers in design studios did not reduce the basic skills that have been prosecuted in design education, and even was able to further improve student exploration and creativity in design in the design studio.

Key words: **computer, cearivity, design process, design studio**

I. INTRODUCTION

Today, especially in the world of education in Indonesia, an understanding of computers is a requirement that must be held by the world of compulsory education and mastered by students from elementary to college. In most cities in Indonesia, the mastery of computers with certain software is an absolute necessity for primary education to university. Education providers will be categorized as advanced educational and outdated when not using the computer. Computers are integrated in the pulse of life education, it is common even with the requirements of operating a computer with specific software is a new hiring requirements. The more prestigious place to works, the more it takes some mastering software that supports the work in the office.

Software for coloring, stringing composition / puzzle was introduced in kindergarten, microsoft office software has been taught in elementary school, even a few lessons on certain subjects in kindergarten and elementary school have been using packet applied from a particular software application that is made in Indonesia. Junior and senior high school level are taught Corel Draw and Photoshop, Photo Paint and other. Especially in the vocational school has taught software for drawing and animation, for example, Auto-CAD, 3ds-Max, Flash and others. In college of design also taught anymore software Corel Draw and Photoshop, Auto-CAD, 3ds-Max, flash, Archi-CAD, and others, or even college students often been considered to have mastered these software.

This condition indicates that the computer has been integrated in the pulse of life education. That remains an open question is how the planning and implementation, particularly in college of design brings benefits to students, education providers, the education itself and the users of design graduates of higher education?

From the descriptions that bring the sense that a computer with specific software has become a mandatory controlled by design to support student learning and professional preparation in the world of work [2]. The constraints are an internal problem in the education process design due to the back and forth among educators about which ones are preferred; with or without a computer, how and how to manage them. Furthermore, this gap occurs because educators are basically divided into two groups, namely the former did not get the computer education and young educators who have been educated to design using a computer. Everything is divided into groups; freehand drawing, drawing machine and a computer user who feels that his view is more suitable for use in learning in design education.

Conditions on using this computer can understand, because the use of computers to help design was introduced in 1987 by some professors who just returned from studies abroad. At that time the computer is still using the operating system (under DOS) that is less familiar and its main function was only used as a tool for office needs in terms of typing and spreadsheet (for letters, reports and books). Software CAD (Computer Aided Design) under DOS is also introduced, but users of CAD software is encountering many obstacles, where users have a lot to memorize lots of

commands to be able to use them operating smoothly.

Another problem is the price and the needs of the computer. However, slowly but surely, computers for design education began running in 1995's. Computers to design increase rapidly after the presence of CAD software with the operating system under windows and along with the formation of a computer lab in college design. Initially, this software is more widely used to assist in making the working drawings.

This condition indicates that the polemical use of computers in design education is a natural thing, especially in its application to process / activities in the design studio. Furthermore, mastery of computer software is already a staple in design education. What remains to be a concern is the completion of these polemics, polemics should be resolved by intelligent without harming students' education and learning systems in design, even expected to further strengthen core design education and interests of students while engaging in the world of work.

II. METHOD

Activities undertaken in this study were; preceded by observations about the need for computers in design education, followed by observing activity in the interior design studio activities FTSP-ITS, and concludes with case studies.

These steps are expected to be able to obtain optimal results to ensure that the computer can enhance creativity in design in the design studio.

III. RESULTS AND DISCUSSION

A. Strategy and Synergy of Computer-Based Teaching and Teaching Ability Classics In Design in Curriculum Design Education in colleges.

Currently it can be said that almost collages of curriculum design does not provide education for computer software design. CAD software (AutoCAD) is required software that must be mastered by students, both for working drawings and presentation of 2 dimensional or 3-dimensional presentation drawings. The next software is often given of 3ds-Max is more widely used for 3-dimensional presentation.

This understanding implies that the use of computers more widely used as a drawing tool. Computers are also used to facilitate the work of, among others; duplication, image repair work if something goes wrong and as a tool for presentation only. Furthermore, this understanding

makes computer software is considered less appropriate for use in the activities of the design process in the design studio.

As a result of this understanding, the subject curriculum planning computer is less / not understood and is designed to support the design process in the design studio. Even more tragic even considered damaging or reducing the ability of classical design based on free hand drawing skills and creativity.

This paradigm needs to be changed into a new paradigm that is "the use of computer software does not reduce the ability of students in designing classic, even more support for them. Computer software can enhance students' creativity in the design process in the design studio".

This new paradigm brings the consequences of strategies and synergies in curriculum involving computer-based courses with course-based free hand drawing, also placing these subjects in a particular semester. The classical subject in design support capabilities prior to the beginning of the semester, because it is the spirit of the design itself. Computer-based course is given after it was felt that students already have the basics of classical capability in designing, and sketching skills and perspective is right and good. Application of classical and computer skills must also be made in such a way as to synergize the activities in design studios.

The design itself is a unique process and not everything can be done by computer, so the natural ability of a designer is still needed. Until now the computer has not been able to replace the position of designers, and computer designed to help and can increase creativity and realize the dream / design work from designer becomes an "as real as-built". The quality of design can be seen before design work is built. The design is presented as if it was built, which we see from the presentation designers such as photographs and video footage of the exterior and interior designs that have been built.

This understanding brings the consequence that the subject-based free hand drawing and creativity that are the foundation of classical ability to design placed at the semester 1 and 2. It is expected that after the second semester ends, students have understood the meaning of design, the basics of the process/sequence in designing, aesthetic fundamentals, the basics in triggering creativity and how the designers create a masterpiece of design. Students also must be capable and proficient in making communicative drawings in sketch form 2 and 3 dimensions and perspectives. Basic subjects that support the design capabilities are also placed in semester 1 and 2, one of which is drawing techniques that can be

placed starting semester 2. While the compulsory subjects of local and national content-based with no direct connection with the design sought after semester 2.

Computer-based learning courses can be conducted in semester 3, 4 and 5. Semester 3 can be given 2-dimensional CAD which will be used in helping to create working drawings. Working drawings are made with a computer requires a relatively similar to using a drawing machine (drawing manually). Excess drawings using CAD is to make working drawings can be easier and faster for improved / changed, working drawings can be printed in draft form to be corrected before it is printed in final form, all this makes it more efficient than manual drawing. At this stage, the computer is functioning as a tool for realizing design concepts into working drawings.

In general, 2-dimensional CAD learning step only create 'working drawings'. This condition must be changed, 2-dimensional CAD will also be developed further and used to trigger the creativity in the design studio. Certain commands not only used for drawing working drawings can also be used as the basic skills required in triggering creativity should be given, for example, rotate, mirror, scale, and so forth. Inside the 2-dimensional CAD learning, students are given basic training for creativity through those commands in order to find / develop aesthetic patterns.

Furthermore, students were also given the basics of how to use computer software to creativity in determining the color composition of the building facade and so forth. Some final destination will be utilized to trigger and enhance creativity in the design studio.

3-dimensional CAD is given in semester 4 which can use AutoCAD software and 3ds-Max. Generally, the purpose of learning 3-dimensional CAD and 3ds-Max is to make the final presentation alone is an image perspective with the use of materials on building façade along with shadowing (shade, shadow) [1]. Here the computer is functioning as a tool to realize the image in the form of perspective drawing. This thought pattern of activities carried on in the design studio, a computer is only used as a tool for drawing and presentation only.

This mindset should be improved by adding the lesson by using this software for use in studies of three-dimensional form of alternative development, as such studies; landscape contour patterns, patterns of lay-out arrangement, composition, shape, before & after [3] and forth. This last objective can be used to trigger and enhance creativity in course design in the design studio.

Learning this software will become more perfect when taught well to make a presentation in the form of animation. Animation can be used for presentations; specially designed furniture, interior or exterior and is particularly interesting part of the design.

B. Strategy and Synergy Learning Outcomes of Computer Based Teaching in Process Design Studio Design.

After perfecting the curriculum, the learning strategy is needed in the design studio must synergy with computer-based learning course on the design process in the design studio as a guide for learning in the design studio. The Lessons on studio design always starts with refresher courses and briefings for 30-60 minutes at the beginning of the studio, and studio activities as usual. The purpose of the refresher course for college students arrive on time in activities at the studio of design, remind / refresh classical material from the lectures that will be needed in the design process in the studio on the same day.

In accordance with the study in front of a priority to basic skills in design, the design studio 1 and 2 that there are semesters 3 and 4 continue to use manual ability and skill in designing. In both these studios are not allowed to use computers as a tool. Design Studio 1 only using free hand drawing skills to create working drawings and 3-dimensional presentation (main perspective and detail in the form of perspective.) In this studio, the ability of the design process is really ingrained in the minds of students.

Studio 2 had the same studio as the studio 1. In the studio 2, students could use slide rules / drawings machine for the drawing works. For the three-dimensional image presentation, students are still required to create perspective with freehand drawing techniques.

At Studio 3, students are required to use computers to create working drawings and also exploit the computer to create alternatives in the form of two-dimensional designs such as; floor patterns, the pattern of aesthetic elements, blend composition and color selection facade building and etc. In the use of computers, students can take advantage of the existing library on computer software, create their own library or library collections that are sold in the market. For the three-dimensional image presentation, students are still required to create perspective with free hand drawing techniques.

In the studio 4, students are required to use a computer to create images working and also tend to use computers to create alternatives to the two-dimensional form; floor pattern, the pattern of aesthetic elements, blend composition and color

selection facade building and etc. Students also use computers to conduct studies; landscape contour patterns, patterns of lay-out arrangement, composition, shape, before & after design and etc. For the three-dimensional image presentation, students are required to create perspective by utilizing computers.

Studio 5 is the final studio. At this stage, students also must make a report design in book form. At this stage, students are free to choose to use free hand drawing, drawing machine, or computer, may even use a combination. Results are expected in the form of; working drawings, presentation drawings and animation are all done by using a computer. Students also must prepare a work plan and terms, and plan cost budget.

Studio 5 (final studio) is a real picture of the demands of the workplace, so students are expected to be ready and able to plunge into the world of work. All this brings the understanding that the mentor serves as a co-worker and colleague discussions in the design process.

IV. CASES STUDY

Two case studies are used to indicate that basically the use of computer is used not only to create working drawings and presentation drawings in the design studio, but the use of computers can be used to further enhance creativity, ease of creativity and time efficiency in creativity.

The first case illustrates that the use of computers in the design studio at the college and the second case illustrates that the use of computers is also done by professionals, especially for complex jobs and a large scale. Use of computers not only as to follow the development progress of time, but the use of computers actually needed in the design world by professional or higher education providers design.

A. Computers As a Triggers Creativity In Color Studies to make Pattern Floor in Studio Design.

It is undeniable that the color will have a significant influence in the design, as well as the colors on the floor. That was one constraint for students is in making alternative color selection on certain patterns that are expected to be a vocal point of the floor design. Students will find it difficult when doing it manually. Students must make a basic pattern and then photocopied and stained by using crayons are not the same color as the original material, it can take a relatively longer when students use computers.

When students use the computer, it will be able to get a lot of alternative color selection that matches the color of material on the market. Students can take advantage of the existing library in computer software, even from other sources. Here is a study of students participating in studio 3 which utilize computers for creativity in order to get the pattern on the floor in the hotel corridor with geometry patterns.
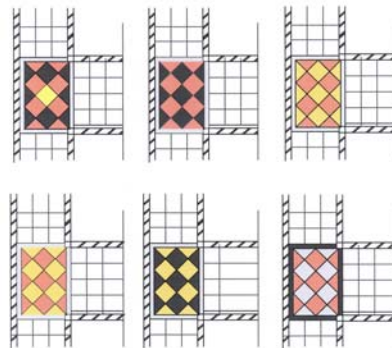

fig 1; Several studies have found the color on the floor in the corridor of the hotel which was done by one student in third interior design studio that utilizes three computers in creativity.

By the same logic, a student can do; study of color on the look of the building, the study of the aesthetic element of the development pattern of the basic design concepts that have been determined and their studies. Use of computers will save time and outcome studies can approach the true reality.

B. Computers As a Triggers Creativity in Creating a Variety of Islamic Ornamental In The Great Mosque of Surabaya. (Professional Projects)

It's not a secret that many parts of the aesthetic elements can be made from geometric shapes. Ornamental pattern closely related to geometric forms, and has become the general rule that the geometry is the language in making aesthetic and decorative elements of Islamic, even geometry are already on the trigger point as a tool of creativity in the design and aesthetic elements of Islamic decoration. Geometry in Islam was prepared and used as "symbolic, Cosmological, and Philosophical significance" based on harmony. In Islamic art, aesthetic and decorative elements and geometric decoration covering all surfaces have a characteristic that is often filled field and combined with the stylized designs of leaves and plants. "[4].

Geometry in Islamic art it requires a deep exploration of the designer since the goal of achieving harmony geometrically in the plan / design to other sections. At the same time this

settlement is a structural problem solving and coordination among the various functions of the building without losing sight of the exterior of a building (through the union, complement or opposition, scale). Design activity is clearly need a computer to obtain an alternative and the precision of drawing.

With the same method, other aesthetic elements created through the exploration of scale (zoom in and out), rotation, duplication, and other deductions. Design would be done to get the module to be mass produced.

fig 2; The result of the design aesthetic element patterns on the dome and roof support, as well as on the wall which utilizes a computer. Even this picture is a 3D presentation drawings are also made by using computers to give the final picture of the overall design.

Source; Koleksi Jurusan Desain Produk Industri FTSP-ITS, 1999.

The author believes, that the results of this design will never achieve maximum results when not in use this computer. This conviction is obtained because the author participated in the design team majoring in Industrial Product Design-ITS FTSP who participated in team design aesthetic elements of this mosque.

Description (A and B) shows how important the mastery and use of computers for students, because the project design in large scale and complex must utilize a computer to create working drawings, presentation drawings, animations and certain studies in the design process.

V. CONCLUSION

Computers already can not be separated from the world of design education. Computer software design can be utilized to assist in working to improve; efficiency, effectiveness, creativity and increased quality of students work.

Level 1,2,3,4 design studios activities, and conclude with a final studio giving enough time, and provide opportunities for synergizing the ability of mastery and use of computer in its application to the activities of design studios, and even expected to strengthen the quality and creativity and the ability basic design.

Appropriate learning strategies and integrated; curriculum as a whole, related subjects and the studio's own method of learning is the key to success in design education. This integration is able to fulfill the desire to shape students to become designers who are more reliable than previous learning systems.

Application of computers in design studios did not reduce the basic skills that have been prosecuted in design education, can even further increase exploration and creativity in design.

Students must be equipped with computer mastery of to enhance creativity, as well as preparation for working on design projects in a large scale and complex.

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