

King Saud University
College of Architecture & Planning
Dept. of Architecture & Building Sciences
ARCH 130 : Basic Design I
SEMESTER : First
ACADEMIC : 2008-2009 [1429-1430]

Course Description:

The purpose of this course is to introduce the student to some principles concerning creativity in two dimensions composition, which will ensure, pleasure, firmness, and durability. The understanding of color theory is essential to such creativity.

A. CREATIVITY

Creativity is considered of prime importance to architects and students of architecture (Broadbent, 1973). However, it has been widely acknowledged that the art of design or creativity is ambiguous and it is within the past fifty years that scientists were able to lay their hands on the nature of the process of design and creativity (Lang, 1987). Indeed the process of design is based on ways, which are the pragmatic, the iconic, the canonical, and the analogical way. (Broadbent 1973) The analogical way is considered the most creative way of design but also the canonical comes next, but both the iconic, the canonical, and the analogical way. (Broadbent 1973). The analogical way is considered the most creative way of design but also the canonical comes next, but both the iconic and the pragmatic are the lowest in creativity, (Lang 1987). Thus, creativity is crucial to any method used in design. There are also other creative ways that are based on metaphors and three types of analogies, which are direct, personal and symbolic (Broadbent, 1973).

In canonical design, the use of principles and rules are basics for creation (Lang, 1987). Broadbent, the founder of these ways, describes the canonical design as practiced by the architects: "a concern for pattern, for order and regularity, which was often expressed in the form of an overriding grid..." (Broadbent, 1973). Thus, one may safely conclude that the canonical design way contains some degree of creativity.

The Canonical Design

In canonical design, a two or three-dimensional grid is employed to ensure modularity and order in design. Principles and rules in the canonical design therefore, constitute the core of the creative process. This is taken seriously and put in a much wider scope to cover the creation of any "process of purposeful visual creation" (Wong 1972). There is a visual language of creation that have principles and rules that a designer if made aware of them as a knowledge of creativity will boost his ability in visual creation (Wong 1972). This body of knowledge is put in a monograph entitled: "Principles of Two-Dimensional Design" by W.Wong. The design process takes into

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consideration both "unit form" and "grid structure" as the basis for any design creative. There are also other monographs by the same author on three-dimensional design and on form, in general.

In this, paper the monograph mentioned above is utilized and is considered the reference and textbook for the course in basic design(1).

Canonical Design – Course Outline

As mentioned above, the knowledge and principles acquired in this course, on which creativity is based, is drawn from the content of the monograph entitled: "Two-

Dimensional Design". One should be aware that other principles and interpretations are available and can be included from other monographs. It is only this particular interpretation of the visual language that has been utilized in this course because they are "on the rigid side and oversimplified... and based on systematic thinking and have less to do with emotion and intuition" (Wong 1972).

These principles are put in ten chapters, which are, (I) Repetition, (II) Structure, (III) Similarity, (IV) Gradation, (V) Radiation, (VI) Anomaly, (VII) Contrast, (VIII) Concentration, (IX) Texture and (X) Space. The following is a brief description of these principles.

(I) **Repetition**: Means that to use an element over and over again in a creation. Indeed this is "the simplest method in design". However, to avoid monotony, variations of repetition may be introduced using directional and spatial variations.

(II) **Structure**: The repeated forms have to be placed in certain positions to create order. Therefore, a structure for their placement is needed. Structure is "to govern the positioning of forms in a design". Indeed, the structure is the orthogonal grid which "consists of equally spaced vertical and horizontal lines crossing over each other, resulting in a number of square subdivisions of the same size". Furthermore, if the basic grid is monotonous variations of the basic grid are introduced to lessen monotony.

(III) **Similarity**: Repeated forms, though creating order may also create a monotonous design. In order to break monotony, variations of the forms can be introduced much stronger than those mentioned in repetition. A detailed set of rules pertaining to the "unit form" and "grid structure" is given to produce similar shapes.

(IV) **Gradation**: Similarity creates shapes that are closely related and if put in a specific sequence will generate gradation. It is the beginning of making the design more visually dynamic. A detailed set of rules pertaining to the "unit form" and "grid structure" is given to produce gradation.

(V) **Radiation**: It is the transformation of the orthogonal repetition grid structure to a grid whose lines are not perpendicular to each other but rather "coverage into and revolve regularly around a common center". Three types of radiation structures are proposed which are: centripetal structures, concentric structures and centrifugal structure. Furthermore, each type has its own variations and in all reaches twenty-five different types of radiation structures. Radiation is also a special form of gradation.

Thus it is a transformation of gradation. A detailed set of rules pertaining

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to the "unit form" and "grid structure" is given to produce radiation.

(VI) **Anomaly**: Anomaly is used to break the monotony of regularity and defined as "the presence of irregularity in a design in which regularity still prevails". To apply this principle in a creative design both unit forms and structure that governs their position are elucidated and methods are given. A detailed set of rules pertaining to the "unit form" and "grid structure" is given to produce anomaly.

(VII) **Contrast**: Indeed, anomaly by definition is a contrast between regularity and irregularity. Thus, by expanding the concept of anomaly one can reach the state of contrast. To achieve contrast, opposites in visual elements (including shape, size, color etc.) and also opposites in relational elements (including

direction, space etc.), are formulated. A detailed set of rules pertaining to the "unit form" and "grid structure" is given to produce contrast.

(VIII) **Concentration**: Contrast of less and more, if extended, a concentration is created. Concentration is "distribution of unit forms which may be thickly gathered in certain areas or thickly scattered in other areas of the design". To perform concentration, methods are prescribed for both the unit form and the concentration structure. A detailed set of rules pertaining to the "unit form" and "grid structure" is given to produce concentration.

(IX) **Texture**: This principle, unlike the former ones is not a transformation of one state to another. It describes the surface characteristics of a shape. Textures have three types. For creating each type of textures methods are prescribed.

(X) **Space**: It is possible to create the sense of space in a two-dimensional design via illusion.

Course Procedure

The procedure taken in this course has as its goal the utilization of these ten principles as the canon laws of creative designs. This procedure is as follows:

Ten principles are given over 10 weeks time. A principle is given every week. The course is held twice a week. In each week the following procedure is taken:

(a) One principle is introduced at the first meeting in the week (the summary given above under canonical design outline gives an idea of such material).

(b) On the second meeting of the week, which is after 2-3 days from the first meeting, the students are given a written quiz for the duration of 15 minutes covering the details of the principle. Basic questions are asked to check the student comprehension of the principle. A sample of a question can be: explain the variation of the basic grid structure. The quiz is graded out of ten.

(c) Following the quiz, the student will present his creative design based on the learned principle orally ally. The student will also defend his work and give the reasons of his designs based on the principle, which he had examined at the beginning of the class meeting. This process requires a great deal of reasoning. A grade is given out of ten for the student reasoning ability.

(d) Following the student's reasoning, the instructor criticizes the creative work of the student in a positive way and, in some instances, the theoretical knowledge

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is explained in person. A grade is given to the student work presented in class (out of ten).

(e) Two to three days later, the student submits his final assignment in black and white measures 25-cm. x 25 cm. The instructor introduces the next principle.

This concludes the course cycle every week.

(f) By the end of the tenth week, the student is given a week to prepare for:

(g) A final project combining all the ten chapters and therefore, representing the students ability in creativity at he end of the semester utilizing all what he learned at once (Fig.11), and

(h) A final exam to measure the knowledge of the student acquired throughout the course. The exam, which extends for 2 hours, covers the ten chapters taught.

Tools:

The students can use the traditional methods of creating forms via cut and past manually. Students are recommended to use cut and past via computer programs such as auto cad Release 11. The computer labs are available for the students used during studio hours and during student's free time. Furthermore the principles mentioned above can also be

applied manually or via computer programs such as auto cad program Release 11.

B. COLOR THEORY

The color theory includes: the Munsell System and chart, The twelve-Part Color Circle the Seven Color Contrasts, and Color Harmony.

Vocabularies:

Students should know the following vocabularies:

(1) COLOR, TEXTURE, DIRECTION, POSITION, SPACE, GRAVITY, PRACTICAL REPRESENTATION, MEANING, FUNCTION, FRAMAL, REFERENCE, PICTURE, PLANE, FORM, STURCTURE,

(2) FORM, CONCEPTUAL, OVERALL, SHAPE, BODY, EXTREMITIES, GEOMETRIC, ORGANIC, RECTLINEAR, IRREGULAR, HAND DRAWN, ACCIDENTAL, FORM, VOLUME, COLOR, DISTRIBUTION, INTERRELATIONSHIP, DETACHMENT, TOUCHING, OVERLAPPING, PENETRATION, UNION, SUBTRACTION, COINCIDING, SPATIAL, EFFECT,

(3) REPETITION, UNIT, SHAPE, SIZE, COLOR, TEXTURE, DIRECTION, POSITION, SPACE GRAVITY, REPEATED, INDEFINITE, ALTERNATE, GRADATION. SIMILAR, SUB-UNIT, SUPER-UNIT, LINEAR, SQUARE, RECTANGULAR, TRIANGULAR, CIRCULAR, REFLECTION,

(4) STRUCTURE, REPETITION, GRADATION, RADIATION, SEMI-FORMAL, INACTIVE, INDEPENDENCE, OFF-CENTER, POSITION, SUBDIVISION, INTRUDES, ADJACENT, UNITED. VISIBLE, INVISIBLE, EXIST, ACTUAL, POSITIVE, NEGATIVE, COMBINATION, BASIC, GRID PROPORTION, CHANGE, SLIDING, CURVING, REFLECTION, COMBINNING, FURTHER, HEXAGON, MULTIPLE,

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SUPERIMPOSITION.

(5) SIMILARITY, ASSOCIATION, IMPERFECTION, DISTORTION, UNION, SUBTRACTION, TENSION, COMPRESSION, GRADATION,

(6) GRADATION, PLANAR, ROTATION, PROGRESSION, TENSION, COMPRESSION, PATH, SPEED, PATTERN, MOVEMENT, PARALLEL, CONCENTRIC, ZIGZAG, REFLECTING.

(7) RADIATION, CENTRIFUGAL, MULTIPLE, HIDDEN, CONCENTRIC, STRAIGHTENING, SHIFTING, SPIRAL, DISTORTED, HIDDEN, CENTRIPETAL.

(8) ANOMALY, ATTRACT, ATTENTION, RELIVE, MONOTONY, TRANSFORM, REGULARITY, UNAFFECTED,

(9) CONTRAST, DOMINANCE, MAJORITY, EMPHASIS, MINORITY, (10)CONCENTRATION, FREQUENT, ABSENCE, QUANTITY, TOWARDS, AWAY, FREE, OVER, DECONCENTRATION,

(11)TEXTURE, DECORATIVE, MECHANICAL, DRAWING, PAINTING, TRANSFERRING, RUBBING, SPRAYING, SPILLING, POURING, STAINING, DYEING, SMOKING, BURNING, SCRATCHING, SCRAPING, COLLEGE, IMAGE, TACTILE, AVAILABLE, NATURAL, MODIFIED, ORGANIZED,

(12) SPACE, FLAT, ILLUSORY, SHADOW, DEPTH, OUTLINED, UNIFORMALY, FLUCTUATING, CONFLICTING,

(13) COLOR, PRISM, RED, ORANGE, YELLOW, GREEN, BLUE, PURPLE, HUE, VALUE, LIGHT, DARK, CHROMA.

Time Table

Week (1) Chapter one Introduction and Chapter two, including Vocabularies.

Week (2) Introduction to auto Cad.

Week (3) Repetition.

Week (4) Structure

Week(5) Similarity

Week(6) Gradation

Week(7) Radiation

Week(8) Anomaly

Week(9) Contrast

Week(10) Concentration

Week(11) Texture

Week(12) Space

Week(13) Seven Color Contrast

Week(14) The twelve part Color Circle.

Gradation Distribution:

(1) Each weekly assignment will carry 6% (for parts A), no. of assignments are 10 and total grade is 60%.

(2) Each assignment it will carry 10% (for part B) no. of assignments are 2, and total grade is 20%.

(3) Weekly quizzes will carry total of 10% (for part A).

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(4) Weekly class assessment for part A will carry 5%.

(5) Final exam and assignment carry 5% (for part A and B).

Watch Out For

(1) Assignments have to be given on time as it is fixed on weekly bases, no late assignments will be accepted unless accompanied by medical report.

(2) Medical reports are those sealed from King Saud University Hospital.

(3) Students reaching absences of 25% of the semester will be dropped out from the course.

Bibliography:

Wong Wucius, Principles of Two-Dimensional Design, Van Nostrand Reinhold Company, N.Y. 1972.

Van Hagen, Ernst, Itten, Elements of Color, Van Nostrand Reinhold, N.Y.

AutoCAD Release 11, Reference Manual, AutoDesk Inc. 1990.