AGENDA OF MEETING

Date: **Wednesday, 19 October 2005**

Present:	Roger Mitchell	Syllabus Coordinator
	David Edwards	Studio Coordinator
	Alton Tangedal	Thesis Advisor
	Kurt Dietrich	Thesis Candidate

Purpose of Meeting: Weekly Progress Meeting

ITEM / DISCUSSION

This thesis will provide a design solution for a building to facilitate instruction of an educational curriculum related to architectural design principles

37.1 Educator Activities

- Will be coordinating class days with Sherman.
- Sessions will be taped by Steadicam/Regina for future reference.
- Activities do not comprise a requirement of the thesis process.

37.2 Stage Two (Level D9-B)

Process is underway.

- Process begins with development of an educational curriculum for instruction in architectural design principles.
- Process continues with an architectural program (based on curriculum) to facilitate the instructional aspect.
- Process concludes with an architectural design that demonstrates the method by which the educational curriculum and architectural program have been incorporated into a built form.

This stage will carry on from Stage One through:

- Site selection and analysis,
- Conceptual design and design development;
- Graphic analysis and integration of research concepts into design solutions;
- Final design solution;
- Graphic / verbal presentations;
- Final Presentation documentation and arrangement

The Research Process:

• Research of the specific component: existing literature, history and developments.

• Analysis relative to architectural design.

• Development of curriculum and instructional guidelines in coordination with Education Advisors.

• Development of spatial and functional program for each area.

• Review of the specific item with the advisor team to ensure relative aspects have been addressed

- Three dimensional design underway.
- Instruction spaces are designed according to the golden ratio theory (1:1.6) This item relates to classroom and lab widths/height ratios.
- Presentation spaces in classrooms are based on circular ratios (Parthenon theory).
- Site planning underway according to geography theory presented in the curriculum.
- Building is sited to minimize impact on the natural environment through roads.
- Orientation suits the angular impact of winter solstice.
- Building design will feature overhangs and solar shading to respond to summer/winter solstice activities.
- Site planning will allow for buses to transport students and park away from the facility for the duration of their stay.
- Site parking will make use of the existing parking lot west of the facility location, minimizing ecological impact.
- Computer renderings are being perfected in order to reflect materials and teaching environments properly.

- **Section 1.0: Architectural History of Western Civilization**
- Vitruvius and the order of proportion.
- The Grid theory of Ecole des Beaux Arts.
- Renaissance influences relative to the proportions of man.
- Use of Materials to reflect historical development

- **Section 2.0: The Science of Buildings**
- Clearly identifiable structural elements.
- Allow for study of structure to occur within facility.
- Exposed structure to illustrate influences.

- **Section 3.0: Art in Architectural Design**
- Display areas for sketch materials and presentation submission.
- Areas allowed for sketching in groups.
- Natural elements and materials for sketch purposes.

- **Section 4.0: Sociology and Architectural Design**
- Study of human nature, social observations, interactive relationships
- Role playing in class setting for situations

- **Section 5.0: Geography**
- Land forms, contextual placement, natural force influences, landscaping; bringing the exterior in - unity between spaces

- **Section 6.0: Mathematics**
- Allowances for special circumstances relative to areas of study
- Geometric study and analysis of the building form, clear geometry

- **Section 7.0: Architectural Design Elements**
- Influence on design strategies on composition: light, shade, texture, colour, composition and presentation.
- Clear Massing, volume and spatial resolution

Design Areas Special Conditions:

- Student Commons:
- Student Commons included as a central circulation space for the overall facility.
- Area will serve as observation (Social), sketching (Art) and study (History and Design).
- Area will also contain water elements (Geography)

- Individual room areas:
- Individual room areas have been separated to include spaces for instructors and storage within each element. This is a response to the dedicated nature of the facility relative to the instruction.

- Additional storage:
- Additional storage requirements identified for each space, based on percentage allowances of the net floor area for the specific space.

- Circulation allowance:
- Circulation allowance is increased to allow for additional display, observation and gathering spaces around the facility.

- Special features:
- Commons serves as the student hub.
- All areas of the curriculum bear influence on the design solution parti.

- Future site development:
- Site has to allow for bus accommodation to serve individual classes in each instructional area.
- Site area also must allow for exterior class instruction around the facility.
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1.0 ARCHITECTURAL DESIGN PRECIS

1.1 The Site

- Conveniently located to major traffic routes
- Southern exposure
- Use of existing landscaping
- Allowance for bus parking
- Allowance for student drop-off
- Staff parking underground to minimize site impact
- Provide an exterior focal point (gathering spot) outside the building shell (Clock tower)
- Access to or views of exterior water elements
- Minimize structural impact on site (earth berms, underground development)
- Allow for exterior teaching spaces
- Respect Climatic conditions
- Maintain and develop Landscaping elements
- Allow for exterior activity of student projects
- Lecture area or gathering spaces on the exterior site
- Site development tied to atmospheric influences (summer and winter solstice)
- Wind breaks designed into site elements
- Directional orientation
- Physical and visual link for interior to exterior

1.2 The Building Exterior

- Natural materials on the lower level to provide connection with earth
- Base composed of rough hewn or natural stone: connection to earth, related to geography and prairie rock formations (stone piles, stone boats, etc); stone elements within the facility to bring natural warmth and solidity, allowance for texture and variation of stone as teaching tool.
- Cut stone for main floor building face: provides texture, colour and form.
- Integration of façade elements in keeping with classical architectural detailing and concepts.
- Steel: used on the upper floor or clerestory sections, rising out of stone. Steel is indicative mankind's contribution to the building process, encased in glass (a sand/stone composite material), exposed connections and details to be used in the teaching environment.

1.3 The Building Interior

- Atmosphere: light, water, air; vision, movement, activity, opportunities.
- Clear circulation
- Use of central commons as the gathering space
- Seating, gathering and observation points within central space for student activities, projects and studies.
- Seating and display areas within circulation for student interaction and viewing of completed assignments.
- Clear distinction between Humanist and Technology wings.
- Direct access to Administration area
- Vertical circulation (where applicable) to be visually supervised.
- Exposed structural connections reflect the nature of assembly.
- Maintain the exterior aesthetic through to the interior (use of rough and cut stone, upper sections of steel)
- Allow for water elements (movement, sound, white noise) in commons.
- Use of elemental colour sections within interior for distinct definitions.
- Classical detailing to be integrated, yet not token, to provide an instructional platform for student interaction.
- Open areas of movement including wide stairways, ramps; use of stairs as seating areas; ramps providing transition and sense of movement.

ARCHITECTURAL HISTORY OF WESTERN CIVILIZATION

- The Ancient World
- Egyptian Architecture
- Greek Architecture
- Roman Architecture
- Early Christian Architecture
- Byzantine Architecture
- Romanesque Architecture
- Gothic Architecture
- Renaissance Architecture
- Baroque Architecture
- The Eighteenth Century
- The Nineteenth Century
- The Twentieth Century

THE SCIENCE OF BUILDINGS

- Science of Buildings
- Building Materials
- Seasonal Construction
- Structural Force Loads
- Action and Reaction
- Forces on Structural Systems
- Structural Frame
- Foundation Systems
- Floor Systems
- Wall Systems
- Roof Systems
- Building Orientation
- Wind Effects
- Snow Loads
- Exterior Systems
- Rain Penetration
- Thermal Insulation
- Vapour Barrier
- Air Leakage
- Humidity
- Condensation
- Sealants

ART and ARCHITECTURAL DESIGN

- Introduction
- Development of Design
- Art within Architecture
- Article I – Sketching
- Article II – Graphic Presentation/Analysis
- Article III – Artistic Composition

SOCIOLOGY and ARCHITECTURAL DESIGN

1.0 The Context of Society
2.0 Cultural Traits
3.0 Individual Social Aspects
  (1) Self-Worth/Friendship Formation
  (2) Group Involvement
  (3) Personal Space
  (4) Personal Status
  (5) Individual and Group Territory
  (6) Communication
  (7) Personal Safety and Security
4.0 The Role of Architectural Design

Architectural theory is crucial to the manner through which architectural design is completed. Theory in the profession has changed dramatically within the 20th Century as the means and methods of design and construction have grown. An abbreviated list of the various forms of contemporary architectural design includes:

- Productivism (technically based)
- Rationalism (formal composition)
- Structuralism (anthropological)
- Populism (contextual)
- Regionalism (locality based)
- Deconstructivism (abstract)
- Post-Modernism (similar to Populism)
- Modernism (similar to Productivism)

Codes in design are represented by three means of communication:[1]

1) Codes specific to design establish the relationship between the plan, elevation, and sectional volume of the building. This code is initially used to illustrate the intended solution to the client, and subsequently the built product is interpreted by society as a whole.
2) Codes common to the arts and cultural norms (icons, colours) are used within the design solution to respond to cultural norms that are common within the societal structure. The medical icon is a symbol taken from biblical references that is known within a given society and incorporated into structures serving that purpose.
3) Codes that are non-specific within a culture but accepted as norms are used to reinforce the influence of cultural integration. These codes are subtle, such as rhythm used in music, dance, art, and architecture, which can be shared among the arts and are common to the specific culture.

Semantics is concerned with the way in which objects (individual) act as signifiers of a concept or physical reality, such as a front door or individual space. Syntactics is concerned with the organization of language (parts to the whole) as a synthesis of the meaning.

GEOGRAPHY

1.0 Five Modes of Understanding
2.0 Topography / Soil
3.0 Orientation
4.0 Solar Orientation
5.0 Wind & Water Elements
6.0 Urban Design
- City Planning Models
- Energy and Environmental Design
- Civic Environmental Design

The five modes (methods or concepts) of understanding proposed in Genus Loci include:

(1) Thing: relates to the tangible collection of site elements (rocks, soil, vegetation) and creates the understanding of this collection as an entity unto itself – Stonehenge is an entity made up of the elements of its location and structure, thereby classified as a "thing' in this definition. Meaningful places, collections of things, make the life of the coherent civilization possible.

(2) Order: Order consists of the heavenly influence (a cosmic influence) related to the local geographic structure. The relationship of the cosmic to the concrete (land forms) creates an accepted structure of the "place"; a union of earth and sky (cosmos) to define an order.

(3) Character: relates to the definition of natural elements, relating them to human traits. This aspect is commonly referred to as assigning characteristics to inanimate objects. The assignment of human characteristics to natural elements creates an understanding of the land form and location.

(4) Light: Light is symbolic within our civilization as being a positive element, source of inspiration, and related to the heavens through the religious overtones applied to the presence of light. An understanding of the forces and nature of light relative to the land forms (duration, intensity, clarity) will provide for a more resolved design solution. Light is, however, temporary as it changes throughout the day and over the seasons. It is inherently connected with the rhythms of nature through the seasons.

(5) Time: Time incorporates the rhythm of our existence as we move in and around our chosen spaces. The element of time, like that of light, is in a constant state of movement, always changing but never repeating. These two latter elements clearly reflect the existence of civilization on earth, though the presence of the land (earth) remains a constant.

- Earthly aspects are characterized by the elements found in the modes of 'Thing' and 'Character'. These modes relate to the physical aspects of land forms and natural elements.
- Heavenly (sky) aspects are characterized by the elements found in the modes of 'Order' and 'Light'. These modes relate to the cosmic influences felt upon a particular site area or region.
- 'Time' is the mode assigned to neither heaven nor earth since time is both ever-changing (as the heavens) and constant in its progress (the constant relating to earth). Time is also that element that is assigned to the specific period of civilization relative to the architectural practices.

Water elements can be included into architectural designs in several ways, such as:

- Stillwater ponds: reflective pools with only minimal surface disruption. These items are used primarily within zones of contemplation or public seating.
- Fountains: create both noise and movement. The interplay of water and light create a distinct atmosphere when used in the proper context. Fountains are used on both exterior and interior applications to augment spatial qualities.
- Waterfalls: can be used in lieu of the fountain in situations that place the water source away within the space. Waterfalls provide similar effects with noise and lighting as a fountain.

MATHEMATICS and ARCHITECTURAL DESIGN

- Introduction
- Cost Estimating
- Mathematical Building Analysis
- Geometry
  - What are we doing? (building type)
  - Who is it to serve? (occupant / function)
  - Where is it to be located? (site area)
  - When is it to be constructed? (seasonal criteria)
  - How large is the budget? (total funds available)
  - Why is this project initiated? (reasons for development)

Geometric patterns are all around us. The principal three found in architectural design as noted herein are the:

- Circle: translates into an ellipse, arc, parabola or contiguous sine wave. This item represents the "fluid motion" of architectural design solutions.
- Square: translates into a rectangle or grid system. This item represents the "fixed" element of architectural design solutions. Weaknesses can be perceived on the square as it has corners, or connections, that "change" the direction of the line. A circle as a pure form does not present any "weak" sides.
- Triangle: translates into modified squares or rectangles, creates what can be perceived as "slope" within design, leading the eye or participant in a specified direction. This item provides a sense of "movement" as a rectilinear pattern; straight, not fluid as a circle. A triangle in architectural design creates focus and direction, although like a rectangle it does present "weak" sides and even dominant lines within itself.

A Golden Rectangle is a geometric shape whose side dimensions equate to the ratio of 1:1.68033. When the rectangle is sectioned off into a square (relating to the initial discussion of 'perfect' shapes), the remaining area creates another Golden Rectangle whose sides maintain the ratio noted.

The Fibonacci Series is both complex yet incredibly simple. The simple side relates to the equation "1 + sqrt5 / 2 = a". The end result for "a" will be 1.618033… This number related to '1' is the Golden Ratio. The Fibonacci Series uses the Golden Ratio as the basis for its mathematical derivation.

ARCHITECTURAL DESIGN ELEMENTS

- Introduction
- The Process of Design
- Section 1.0: Architectural Design Elements
- Section 2.0: Architectural Design Principles
- Section 3.0: Additional Design Considerations

Architectural design elements include:

- Materials
- Colour
- Line
- Shape
- Mass
- Space
- Texture

Architectural design principles include:

- Balance
- Connection
- Contrast
- Emphasis
- Form
- Grouping
- Imagery
- Meaning
- Symbolism
- Pattern
- Placement/Proximity
- Proportion
- Rhythm
- Scale
- Unity
- Variety

3.0 Additional Design Considerations

- 3.1 Function
- 3.2 Time
- 3.3 Lighting in Architectural Design
- 3.4 Acoustic Influences in Design
- 3.5 Architecture and the Environment
- 3.6 Landscaping and Architectural Design