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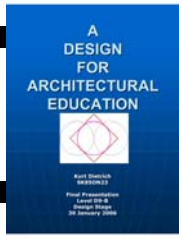


Design Level: 9-A & 9-B – Architectural Thesis A Design For Architectural Education				
Year	**Studio Coordinator**	**Mentor**	**Advisor**	
2004-2006	Roger Mitchell, SAA	Alton Tangedal, SAA	David Edwards, SAA	

Project Description

The profession and practice of Architecture is not properly understood by the majority of the public. ("Architects make blueprints.") The general public is ignorant of the skills, role and contribution of the Architect relative to cities, culture and the built environment. If there is no understanding of what comprises the profession, there will be no requirement or respect for the skills of an Architect.

This thesis intends to address the public perception of Architecture through an educational setting. The thesis process begins with development of an educational curriculum for the purpose of instruction in architectural design principles. This curriculum will be developed in consultation with practicing educators. The curriculum will be developed during the research stage until it is deemed completed by the participating educators.

The thesis process continues through creation of an architectural program based on the curriculum, including functional and spatial parameters. The architectural program will be created with the intent to facilitate the instructional aspect of the curriculum. The architectural design concepts, leading to a final design solution, will be derived using the program requirements.

The final architectural design will demonstrate the method by which the delivery of the educational curriculum and architectural program have been incorporated into a built form.

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

Two Part Methodology:

Part One: Research and Programming

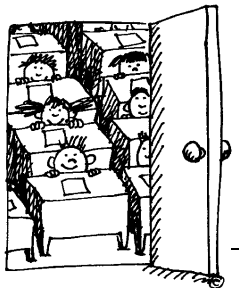
The first part of the thesis project will research architecture and design principles relative to proposed educational components.

The research stage will be presented in graphic and written format. The process during this stage will follow a circuitous path of:

- Research of the specific item: existing literature, history, developments;
- Analysis relative to architectural design;
- Development of curriculum and instructional guidelines. This development will be coordinated with the Education Advisor to create a Unit of Work. By definition, a Unit of Work defines the objectives of the curriculum;
- Development of spatial and functional program for each item;
- Review of the specific item with the advisor team to ensure relative aspects have been addressed;
- Additional research as required.

A brief summary of the proposed educational components to be reviewed relative to architectural principles includes:

- **Design Elements**
- **Mathematics**
- **Science**
- **Geography/Geology**
- **Social Aspects**
- **History**
- **Art**



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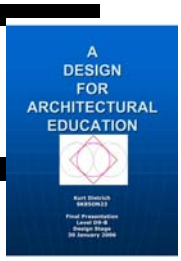


Design Level: 9-A & 9-B – Architectural Thesis: A Design For Architectural Education

Part Two: Building Design Solution

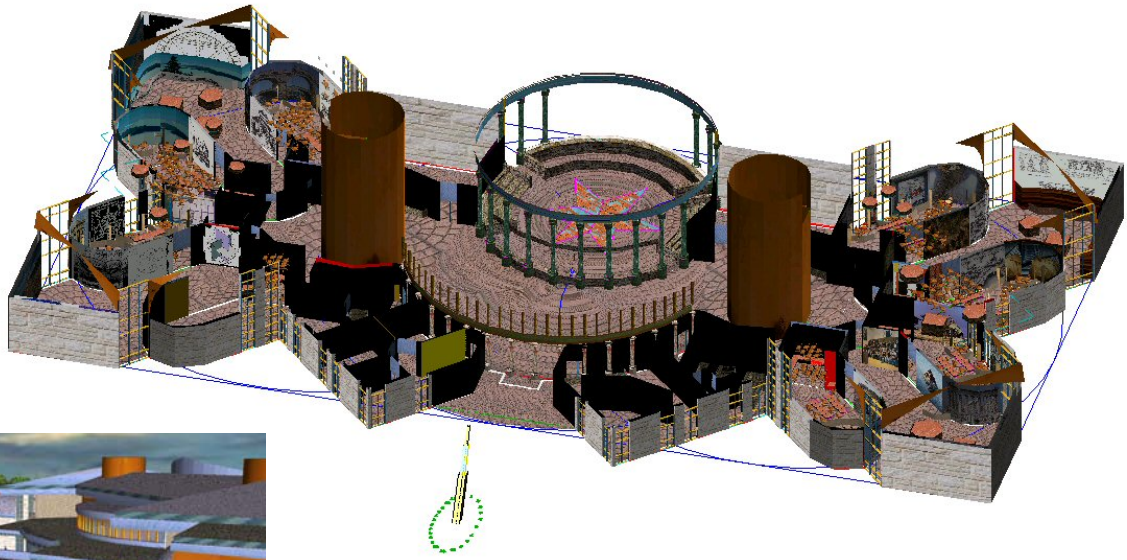
Part Two of the Thesis Project involves design review and options, functional programming, conceptual design, design development and illustration of the intended final solution. This stage creates a design solution that embodies and reflects the principles developed through the Research Stage.

This stage will carry on from Stage One through:

- Functional programming and relationships
- Spatial analysis based on curriculum needs defined in Stage One;
- Conceptual design and design development;
- Graphic analysis of research concepts, integration into design solutions;
- Final design solution;
- Graphic / verbal presentations;
- Final Presentation documentation and arrangement.

This stage will be completed in a conventional methodology of architectural design. It will include mentor/advisor meetings and interim presentations appropriate to the design development.

Site selection will be completed according to the principles established during the Research Stage (Geology/Geography). The site will be chosen with respect to the educational context of the problem.



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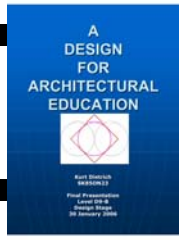


Design Level: 9-A & 9-B – Architectural Thesis: A Design For Architectural Education

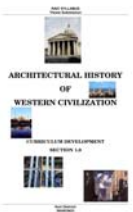
Research and Documentation Stage:

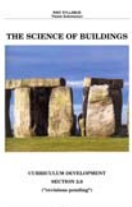
Each curriculum section researched and written included the following components.:

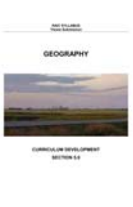
- **ABSTRACT**: {Definition of architectural relevance}
- **PREAMBLE:** {General course outline, extent, etc}
- **COMPONENT INTIATIVE:** {Goals for this component}
- **COMPONENT COURSE MATERIALS:** {The meat}
- **INSTRUCTIONAL STRATEGY: {**Fixed options}
- **ACTIVITIES:** {Student activity listing for the class}
- **ASSESSMENT METHOD:** {student performance/retention}
- **COMMON ESSENTIAL LEARNINGS:** {How educational component fits the Common Essential Learnings}
- **ENVIRONMENT:** {Type of environment required}
- **MATERIALS / RESOURCES REQUIRED:** {Listing of required materials}

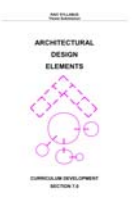
These sections comprised the instructional component of each curriculum division. The summary of all sections was completed for review at the mid-point jury.

No.	SECTION	COMMON ESSENTIAL LEARNINGS					
		Communication	Creative/Critical Thinking	Independent Learning	Numeracy	Technology	Personal/Social Values
1.0	ARCHITECTURAL HISTORY OF WESTERN CIVILIZATION	Verbal communication related to studies. Written communication relative to submissions and research.	Understanding of cultural and social forces through history and how these forces shaped the built environment.	Research and written submissions relative to the course content.	Understanding of time frames, historic time periods and their duration.	Basic understanding of structural concepts related to building construction. Knowledge on technological advances and affects on the built environment.	Basic understanding of societal structure and how the knowledge base of each time period affected the type of buildings constructed. Introduction into the growth, changes and demise of power bases throughout history, along with their impact on society. Relative to understanding current governments and power agencies and their potential impact on future development and construction.
2.0	THE SCIENCE OF BUILDINGS	New terminology and definitions Verbal and written skill enhancement	Understanding of forces that affect man-made environment	Research and written submission relative to course content	Understanding of load conditions, failure points and calculated structures	Basic understanding of structural concepts related to buildings Understanding of affect of natural forces influencing structures	Enhanced knowledge of relationship between engineering and architecture Greater understanding of natural forces within constructed environment
3.0	ART AND ARCHITECTURAL DESIGN	New terminology and definitions Enhancement of non-verbal communication skills through artistic compositions to convey an idea	Understanding the nature of art and architecture Understanding relative to production of an aesthetic building environment.	Research and written submission relative to course content	Proportional studies on artistic rendering techniques	Basic understanding of technical production requirements for artistic image generation	Enhanced knowledge of relationship between art and development of architectural design Understanding of artistic forces influencing architectural development
4.0	SOCIOLOGY AND ARCHITECTURE	Enhancement of non-verbal communicative skills through observation.	Understanding the nature of societal structure. Understanding the rationale behind architectural design principles and the environmental resolution.	Independent research (text and on-site) relative to human study.	Study of group philosophy.	Reading of built form relative to construction in time and place (availability within society regarding construction techniques.)	Enhanced knowledge of society (culture & sub-cultural definitions). Greater understanding of personal space. Greater understanding of behavioral attributes relative to local society.
5.0	GEOGRAPHY	New terminology and definitions. Communication techniques relative to environmental influences.	Understanding the environment as a technical element as well as a theoretical influence on design. Ability to analyze environmental factors relative to potential design solutions.	Research and written analyses. Independent study of established applications.	Site surveying technology, including application of mathematics for topography analysis. Mathematical analysis of solar and wind influences on design solutions.	Understanding of soil types, materials, and methods of technical solutions (combined with science of buildings curriculum). Understanding of urban design concepts relative to land efficiency and urban planning.	Group project activities. Response to environmental variables and emotional aspects of site design.
6.0	MATHEMATICS	Communication techniques relative to graphic analysis. New terminology and definitions.	Ability to perceive and apply geometric and proportional theory. Understanding of the mathematical complexity within the design process.	Research, assignment, and written submissions. Independent study of established design concepts and applications.	Mathematical calculations for area, volume, quantity and proportion. Application of formula relating to design estimating. Application of geometric principles. Integration of percentages within mathematical calculation; applications of budget variances and the influences of costs (hard and soft) related to design calculations. Creation of spreadsheets to provide realistic analysis of budgets and design area breakdown.	Understanding of budget estimates. Understanding of development costs and influences on design solutions. Understanding of material types, costs, and impact on design solution. Understanding of long-term effects relative to design decisions.	Group project activities. Understanding of group participation relative to design solutions in a construction environment.
7.0	DESIGN ELEMENTS	New terminology and definitions Enhancement of non-verbal communication skills.	Understanding of essential design components Understanding of analysis and assessment of design solutions.	Research, graphic assignment, community studies. Independent study of established design concepts and applications.	Mathematical applications of design elements and relationships (scale and proportion). Application of geometric principles.	Understanding of composition elements, materials and design terminology (i.e.: proximity, connection, context)	Enhanced knowledge base relative to the built environment. Awareness of environment and context relative to design solutions. Understanding of cultural influences relative to architectural design.









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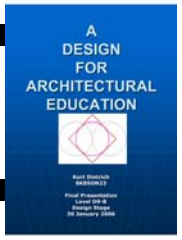
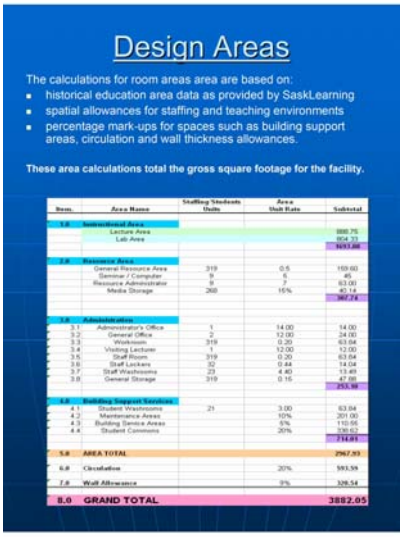


Design Level: 9-A & 9-B – Architectural Thesis: A Design For Architectural Education

Design Programme and Design Areas:

A design programme of individual room areas was generated upon completion of each curriculum section.

- These programme items were completed in conjunction with the teaching requirements of the curriculum
- Each space was reviewed relative to its specific requirements, spatial qualities and special features including design influences from the curriculum sections.
- The total design programme is available for review upon the web distribution site.



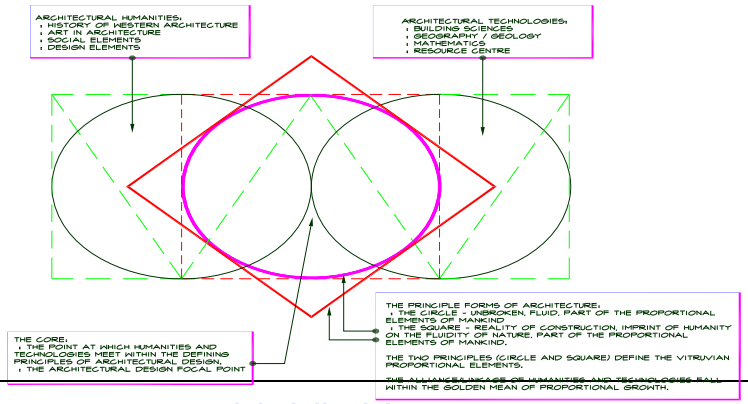
The calculations for room areas area are based on:

- historical education area data as provided by SaskLearning, Government of Saskatchewan.
- spatial allowances for staffing and teaching environments
- percentage mark-ups for spaces such as building support areas, circulation and wall thickness allowances.

Design Parti:

Design solution completed to link directly into curriculum basics.

- Intended for use as an instructional spaces as well as teaching "tool", facilitating curriculum delivery by containing elements used in instruction.



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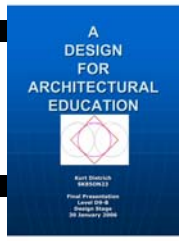
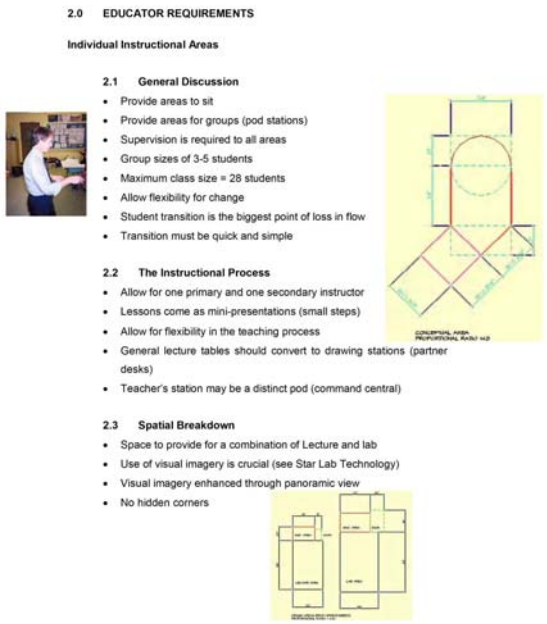


Design Level: 9-A & 9-B – Architectural Thesis: A Design For Architectural Education

Instructional Area (Classroom) Design: Completed through an analysis of Educator Requirements based on the Curriculum content created in Stage One.



2.0 EDUCATOR REQUIREMENTS

Individual Instructional Areas

2.1 General Discussion

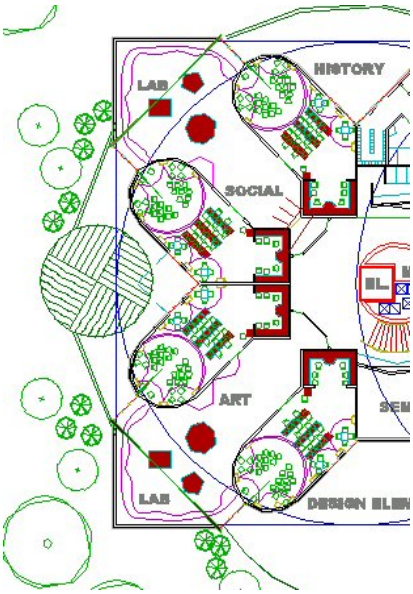
- Provide areas to sit
- Provide areas for groups (pod stations)
- Supervision is required to all areas
- Group sizes of 3-5 students
- Maximum class size = 28 students
- Allow flexibility for change
- Student transition is the biggest point of loss in flow
- Transition must be quick and simple

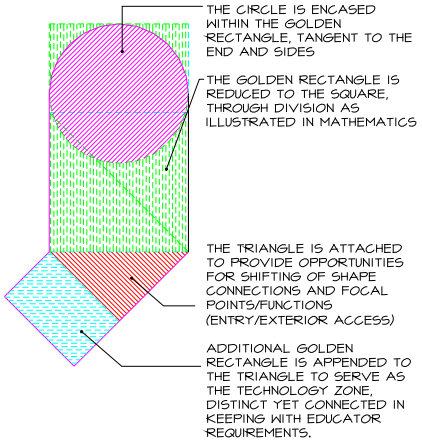
2.2 The Instructional Process

- Allow for one primary and one secondary instructor
- Lessons come as mini-presentations (small steps)
- Allow for flexibility in the teaching process
- General lecture tables should convert to drawing stations (partner desks)
- Teacher's station may be a distinct pod (command central)

2.3 Spatial Breakdown

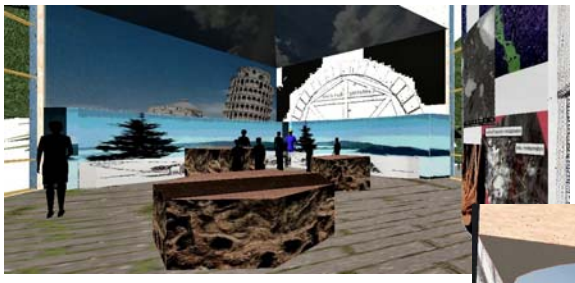
- Space to provide for a combination of Lecture and lab
- Use of visual imagery is crucial (see Star Lab Technology)
- Visual imagery enhanced through panoramic view
- No hidden corners





EDUCATIONAL PODS:

- Instructional area planned for each curriculum section as per programme requirements and educator input.
- lab areas combined with like sections to make better use of equipment and functions.
- the combination of instructional and lab areas create an environment for experiential learning to respond to curriculum requirements related to:
- Instructional Strategy: Direct, Indirect, Independent, Interactive
- Student Activities: Oral, Visual, Kinesthetic, Written
- Student Environment: classroom, lecture, audio/visual, flexible



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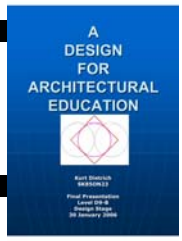
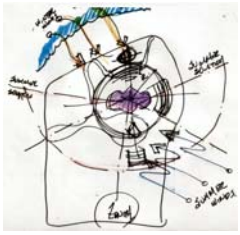
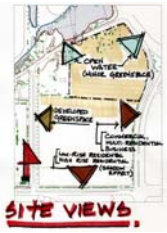


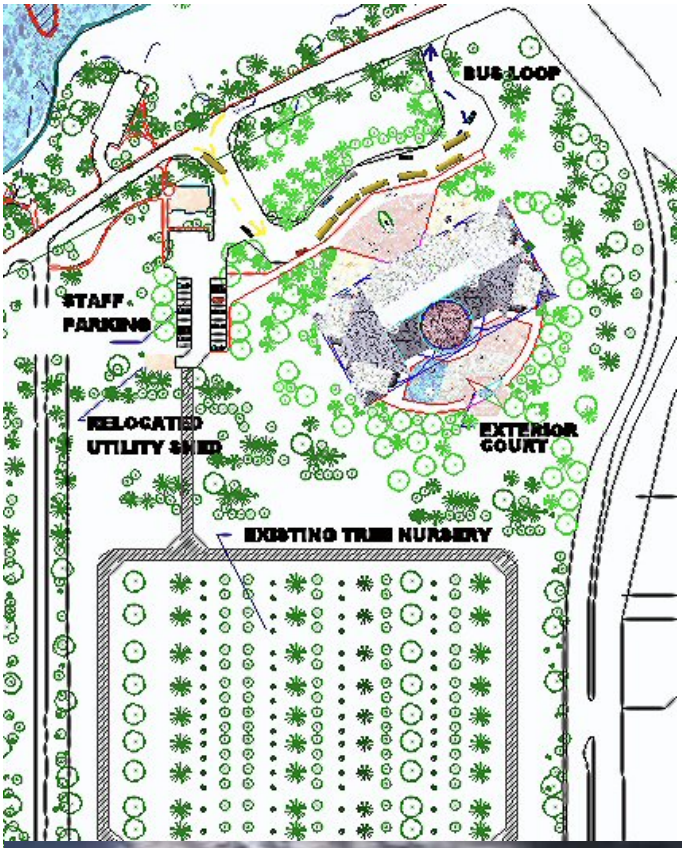
Design Level: 9-A & 9-B – Architectural Thesis: A Design For Architectural Education

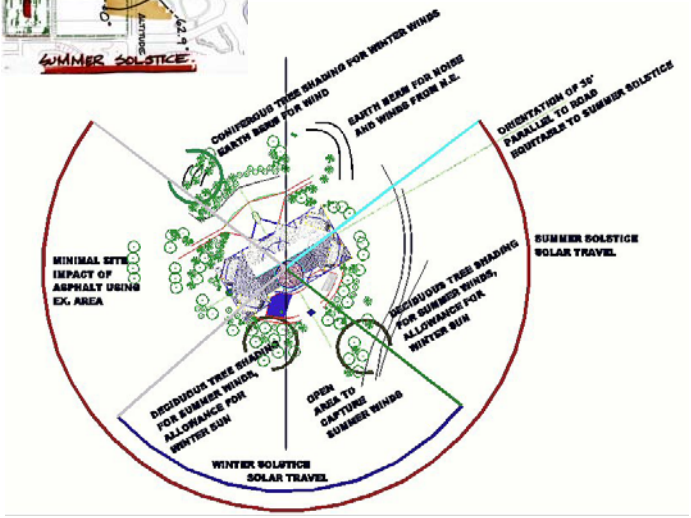
Site Analysis and Design:

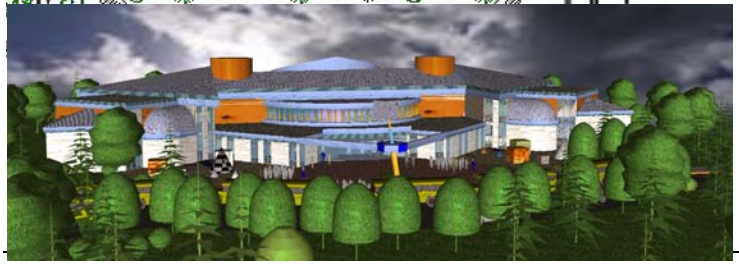
- Site development locates design concept on north half of available area, in accordance with Geography principles.
- Orientation is aligned with entrance road (north), in keeping with Summer Solstice sunrise azimuth.
- Southern orientation aligns for cooling winds while north-west winds are blocked through use of berms and landscaping.
- Exterior site development allows for instruction to occur

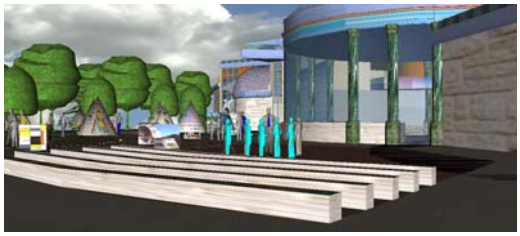












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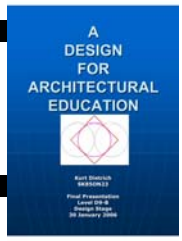
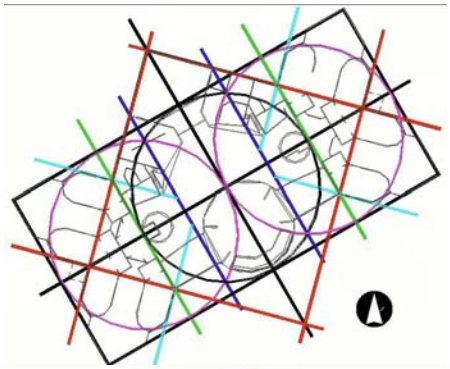
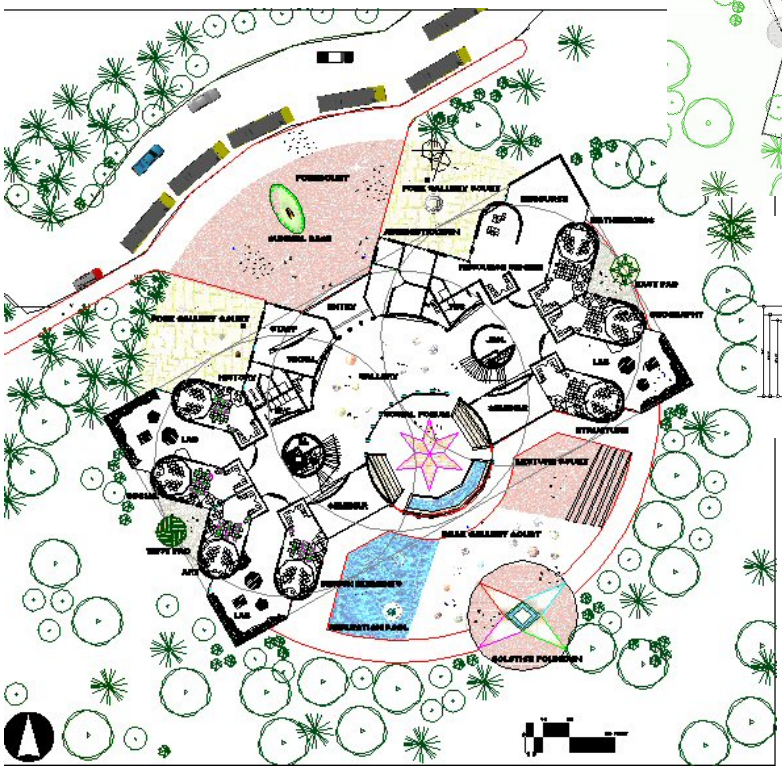


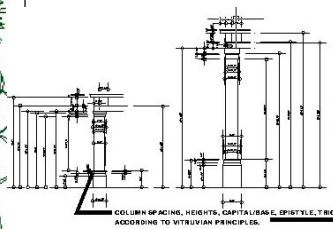
Design Level: 9-A & 9-B – Architectural Thesis: A Design For Architectural Education

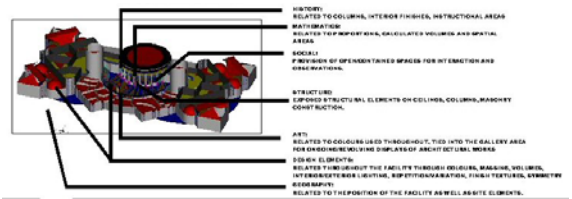
The Design Plan:

- Design Geometry reflects the initial Parti through the circle and rotated square typology.
- Structure geometry designed from “inside-out” through initial development of instructional pods to linkages through to assembly.
- Study of geometry to be applied through Mathematics Section, as well as History, Structure, Design Elements and Art.









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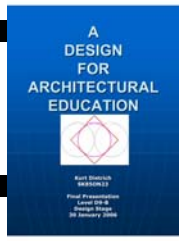


Design Level: 9-A & 9-B – Architectural Thesis: A Design For Architectural Education

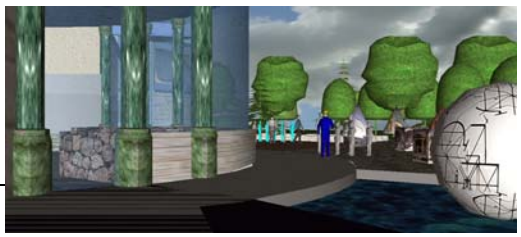
The Exterior Elevations:

- Elevations designed to reflect design elements through:
- Varied use of materials/finishes
- Proportional relationships of trims/elements within each mass.
- Massing relationships between building elements

NORTH

SOUTH

EAST / WEST



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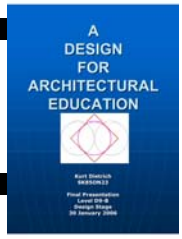
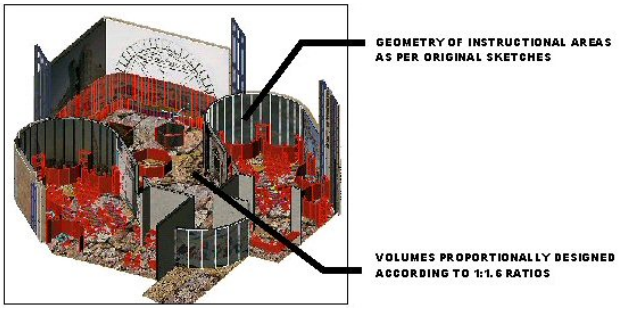
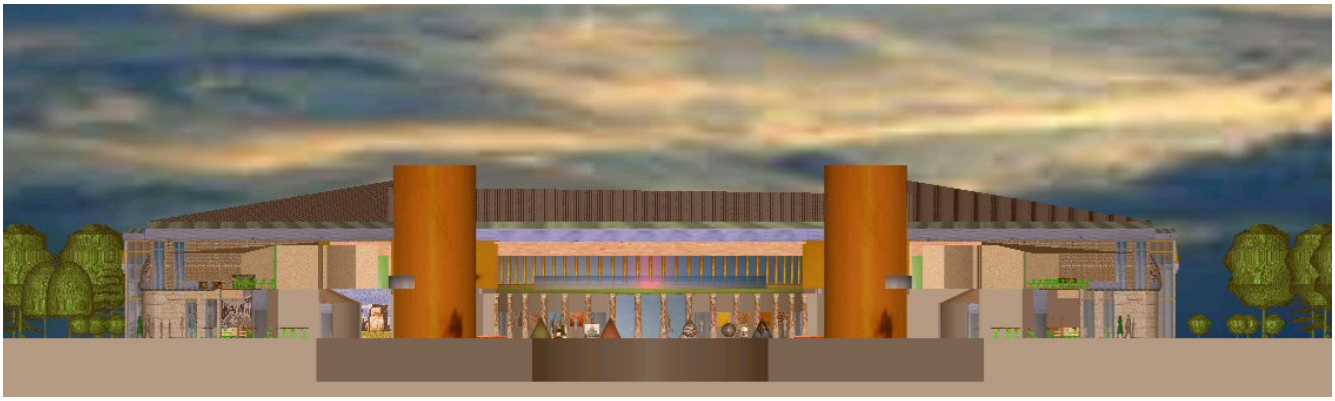


Design Level: 9-A & 9-B – Architectural Thesis: A Design For Architectural Education

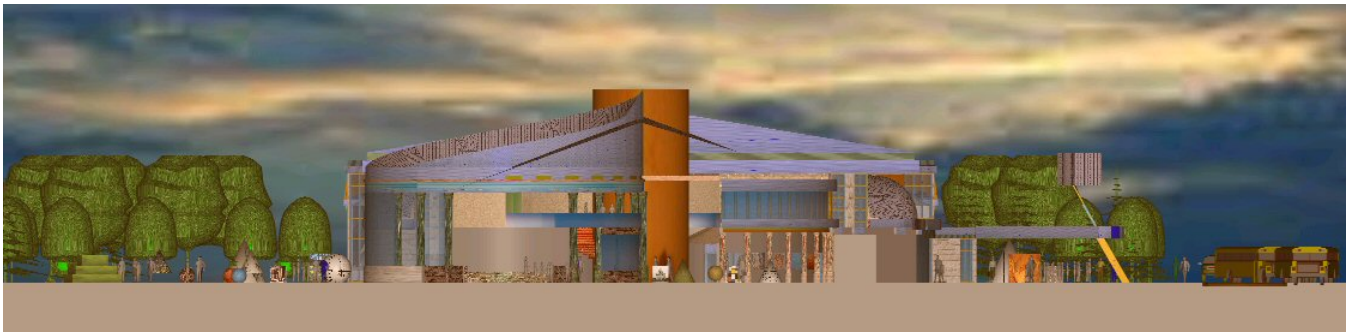
The Building Sections:

- Incorporates proportion, volumes, and scale
- varied levels within the spaces
- cylindrical anchors symmetrical around core area
- additional elements discussed during student defense presentation

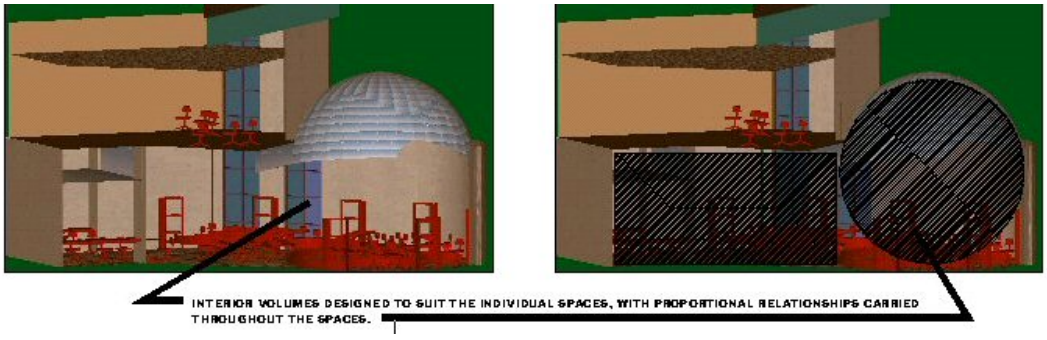




EAST-WEST SECTION



NORTH-SOUTH SECTION



INSTRUCTIONAL AREA SECTION

kd@kdietrich.com
www.kdietrich.com