Project 01: Texas Branch Bank Building.

EDUCATIONAL OBJECTIVES:

- To understand the concepts of building systems, including the structural, enclosure, mechanical and interior systems.
- To engage the creative process through active studying, learning, reflecting and critical thinking.
- To understand how design informs and affects daily living in a larger context.
- To identify design idea/concepts through the use of precedents and examples.
- To develop a basic understanding of materials and structure in the design process.
- To learn about basic building and life safety codes.

PRIMARY LEARNING OUTCOMES:
ARCH 3502 addresses the following NAAB criteria http://www.naab.org/ required by NAAB. This course must show physical and visual evidence these criteria are addressed.

A.1 Professional Communication Skills: Ability to write and speak effectively and use representational media appropriate for both within the profession and with the general public.
A.2 Design Thinking Skills: Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards.
A.6 Use of Precedents: Ability to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.
B.3 Codes and Regulations: Ability to design sites, facilities, and systems that are responsive to relevant codes and regulations, and include the principles of life-safety and accessibility standards.
B.4 Technical Documentation: Ability to make technically clear drawings, prepare outline specifications, and construct models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.
B.7 Building Envelope Systems and Assemblies: Understanding of the basic principles involved in the appropriate selection and application of building envelope systems relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.
B.8 Building Materials and Assemblies: Understanding of the basic principles used in the appropriate selection of interior and exterior construction materials, finishes, products, components, and assemblies based on their inherent performance, including environmental impact and reuse.

Task:
Integrate the aesthetic, tectonic and programmatic concerns studied in Assignments and Exercises into the design of a Branch Bank Building described in the following brief.
Architectural Design Givens:

- The client wishes you to design a ‘world-class’ contemporary bank & office building as challenging and contextually responsive as the Dancing House for ING in Prague, Czechoslovakia by Frank Gehry and Vlado Milunić. The intent is not to copy the style, but to be challenged by this contemporary design.
- The specific aesthetics of the building may be the choice of the designer.
- The building is to be high-end bank & office building
- The building should build a relationship to ------------------------------- the area.
- The building shall be three stories in height and have a gross square footage of ~ 10,500 s.f.
- Each floor plate shall have a gross square footage approximately ~3,500 s.f.. The building is to have a full basement for building services and storage.
- The building shall have a building core with the necessary restrooms, storage, electrical, communications, elevators, and mechanical risers that meet building code and life safety requirements and facilitate the space planning of the building.
- The office spaces shall have a minimum of finished floor to ceiling of 10 ft.
- The building will have adequate surface parking on-site to meet the building code requirements of the city.
- The building shall be constructed of Steel Frame structural system unless an alternative system that meets code is proposed by the designer with appropriate precedent and cause.
- The exterior envelope shall be climate-adaptive, providing adequate shading and daylighting strategies to reduce the energy needs of the building.
- The building will use a Variable Refrigerant Flow (VRF) HVAC system as determined by the program, unless an alternative systems is proposed by the designer with appropriate precedent and cause.
- The building will use a Dedicated Outside Air System (DOAS) to meet fresh air requirements of the IBC, unless an alternative systems is proposed by the designer with appropriate precedent and cause.
- The building shall use overhead distribution system for HVAC, Electrical and Plumbing; unless an alternative system is proposed by the designer with appropriate precedent and cause.
- The building is to utilize day lighting strategies to obtain ambient lighting conditions supported by artificial task lighting. The office space should be day lit while limiting the heat gain from the exterior fenestration.
- The roof of the building will be designed as an accessible outdoor space capable of providing outdoor seating and gathering.
**Project Assignments.**

**Assignment-A01 – Bank Building Typology Study.** Build a REVIT ‘bay’ model of the ‘state of the art’ typology for a low-rise bank and office building based on the project programmatic information. Compose a 36” x 72” poster containing building and structural drawings of this Pre-Design Base Building.

**Assignment-A02 – Bank Building Program.** Compose 36” x 72” poster which contains the program information for the design of your bank building based on the class Exercises and your site visit.

**Assignment-A03 – Low-Energy Building Precedent.** Do a case study, using precedents for climate-adaptive Heating, Cooling and Lighting of an office building in a HOT climate. Using your BankCompose a poster which contains

**Assignment-A04 – Conceptual Design Proposal.** Formulate a Design Concept for the current project utilizing the project vision, goals and programmatic objectives. Develop a presentation of this Design Concept.

**Assignment-A05 – Schematic Design Drawings.** Develop a set of Schematic Design Drawings of the Texas Bank Branch Office Building, using REVIT.

**Assignment-A06 – Schematic Design Wall Sections.** Develop a set of Wall Sections and Call-Out Details of the Texas Bank Branch Office Building.

**Assignment-A07 – Design Argument:** Write a Design Argument explaining how your design response met and exceeded the project grading requirements.

**Assignment-A08 – Bank Building ADA and Code Analysis.** Compose a series of sheets containing how your design meets the structural and code requirements of the project.

**Project Prelims**

You will be required to develop three preliminary presentations of the design. These presentations will include all drawings, models, diagrams and images needed to communicate the current status of the proposed design. As stated in the syllabus you will be required to submit progress work on your project. This preliminary work will receive critique and review.  **As pointed out in the syllabus the failure to meet a preliminary assignment will result in a ten point (10) deduction from your final Project Grade for every 24 hours it is late. Do not forget nor miss your prelims assignments.**

Formal Project Prelims will be held on the following dates. They may change as needed to reflect the class progress.

1. **Conceptual Design Review – Power Point Presentation.** Thursday, 18th January & Friday, 19 January @ 1:30p-4:30p
2. **Schematic Design Review – Paper Pin-up Review.** Thursday, 31st March & Friday, 01 April @ 1:30p-4:30p

**Final Design Review:**
**TUESDAY, 09th May 2016 from 9:00a – 5:00p.**

Your final presentation should include all the drawings, graphics and annotations necessary for a reviewer of the presentation to understand your design and evaluate whether you have met the Objectives and Learning Outcomes of the course and the project. The final required content and drawings will be provided by the instructor later. The final presentation will also include Assignment 1.4 – Design Argument (see below).
Project Grading Rubric and Criteria:

Your Project will be graded on the grading rubric listed below using the attached Grading Sheet. Please make sure you study the Grading Criteria on the attached Grading Sheet.

4 - **Superior/Excellent** - Accurate and complete work that **exceeds** the level and requirements requested by the instructor in multiple areas. **Consistently** showing scholarly initiative, innovation, attempts, discrimination and discernment.

3 - **Above Average** - Accurate and complete work meeting the requirements of the instructor, and **exceeding the level requested in a few. Often** showing scholarly initiative, innovation, attempts, discrimination and discernment.

2 - **Average** - Accurate and complete work meeting the requirements of the instructor **and requiring minimal corrections.** Work satisfactory, but needs improvement. **Inconsistently** showing scholarly initiative, innovation, attempts, discrimination and discernment.

1 - **Unsatisfactory** - Work that is **often inaccurate or incomplete**, not meeting the minimum requirements of the instructor. **Rarely** showing scholarly initiative, innovation, attempts, discrimination and discernment.

0 - **Unacceptable** - work that is unacceptable therefore not defined.

Project Grades will be determined by the Grading Criteria listed on the ATTACHED Grading Sheet. You will receive points for each category ranging from 0 – 4 based on the rubric above.

**SCHOLARSHIP**

Among the criteria for your grade there is one called Scholarship. Scholarship is “the methods, discipline, and attainments of a scholar”. Specifically in this context it is the scholarly attributes of a good student. Below are the seven scholarly attributes of a student and their definitions, which will be the basis of this portion of your grade.

- **Initiative** is the readiness and ability in initiating action without-out prodding.
- **Class participation** is the taking part in the class, as in some action or attempt.
- **Exploration** is the careful systematic investigation of the unknown.
- **Innovation** is the introduction of something new resulting from study and experimentation.
- **Attempts** are making an effort to perform, make, or achieve results multiple times.
- **Discrimination** is the act of making fine distinctions between alternatives.
- **Discernment** is the act of using discrimination and judgment to identify the appropriate alternative in a given situation from a variety of options.

**Critical Thinking** – “Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. “ (The National Council for Excellence in Critical Thinking)
Project Grading Sheet and Grading Criteria:

Texas Branch Bank Project.
Your grade will be determined by the five (5) separate categories listed below. You will receive points for each category ranging from 0 - 4. How many points you receive will be based on the grading criteria and rubric from the previous page.

<table>
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<tr>
<th>NAME: ___________________________</th>
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AESTHETICS: ___________________________
The set of principles governing the idea of beauty at a given time and place.
Concept Composition Unity Harmony Contrast Context

TECTONICS: ___________________________
The construction or making of architecture. The science and poetics (art) of a work of architecture’s structure, joinery, and assembly of materials.
Structure Enclosure Joints Mechanical Integration Tectonic Quality

PROGRAMMING: ___________________________
The process of seeking out and defining the requirements that must be met in order for the design solution to be socially and culturally successful.
Analysis Planning Activities Site Function Codes

COMMUNICATION: ___________________________
The written, verbal and graphic communication of the project.
Composition Content Representation Graphic Quality Communication Clarity

SCHOLARSHIP: ___________________________
The scholarly attributes of a good student.
Discrimination Initiative Participation Discernment Exploration Innovativeness Attempts

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APPENDIX A: BANK SPACE REQUIREMENTS
FIRST FLOOR (~3500 s.f.)
- Entry Vestibule – size as needed to provide walk-up ATM.
- LOBBY - 1300 s.f. – 24’ x ??
  - 1-Accessible Greeter Station (movable)
  - 3-Teller Pod (movable)
  - 1-Coffee Bar
- Community (Conference) Room – 1@ ~380 s.f. - Sit 12 people comfortably.
- Texas Room – ~640 s.f. -
- Personal Banker (PB) Workroom – 172 s.f. – 14’ x 12’
- Customer Conference Room - 400 s.f. – 14’ x 12’
- Safe Deposit Vault – ~170 s.f. – min. 8’ minimum
CORE
- HVAC Duct Chase
- Stairwells (per IBCode)
- Mechanical Room. Each Floor
- Data – Telecommunications Room. Each Floor
- Electrical Closet. Each Floor
- Janitor – 24 s.f
- Elevator – Machine Room-Less (MRL)
  (per IBCode and Schindler Brochure)
- Mens and Women’s Restroom (per IBCode)

BASEMENT
- Electrical Room
- Plumbing / Sprinkler Room
- Data/Telephone/Server Room
- Mechanical Room
-
SECOND FLOOR (~3500 s.f.)
- Open to Below (~1000 s.f.)
- Offices – 7 each - ~120 s.f. ~10’ x 12’ 2nd floor
- Administrative Open Office Plan- 7 Stations - ~6’ x 6’
- Work/Copy Room
- Security Closet
- Core Requirements

THIRD FLOOR (~3500 s.f.)
- Open to Below (~1000 s.f.)
- Offices – 7 @ 12’ x 10’ (120 s.f.) 2nd floor
- Administrative Office – Open Office Plan – 7 Stations
- Work/Copy – 2nd Floor
- Core Requirements
MECHANICAL
- Variable Refrigerant Flow (VRF) HVAC system.
- Dedicated Outside Air System (DOAS)
- Machine Less Room (MRL) Elevators.
- Ground Source Heat Pumps (See Fact Sheet)
- Assume 1 ton (12,000 btus) per 1200 s.f.
- Direct Outside Air System (DOAS)

PLUMBING
- Sprinkler System (per IB Code)
- Men’s and Women’s Restrooms (all floors) (per IB Code)
- Stand Pipe
- DHW – Instant water heaters on each floor for bathrooms, janitor and service sinks.

ELECTRICAL
- Exterior Transformer Pad (Studio Companion)
- Electrical Closet every floor (approx. 30” x 6’)
- Overhead Distribution
Mitsubishi Electric – Advancing HVAC

For more than 30 years, Mitsubishi Electric has been a leader in split-ductless, ducted and VRF solutions in the U.S. And we continue to lead the industry in advancing these technologies for residential and commercial applications.

Our smart approach to system design ensures that our modular, configurable systems meet just about any need, taking into account building design and heat load factors.