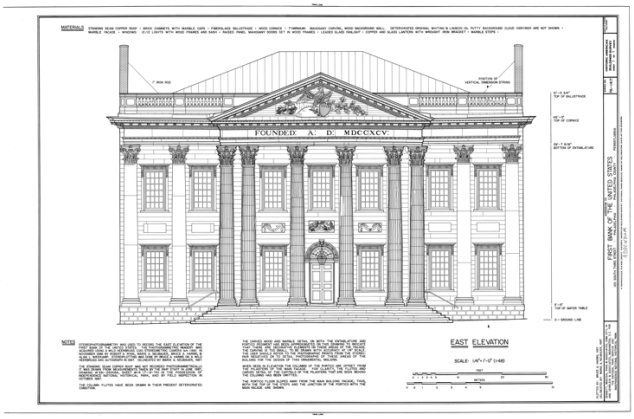
ARCH 5321 HISTORIC BUILDING TECHNOLOGY AND DOCUMENTATION
College of Architecture, Texas Tech University, Spring 2021

Tuesday & Thursday **5**:30–**6**:50 (**CS**T), Online Instruction
Mahyar Hadighi, Assistant Professor, mhadighi@ttu.edu



HABS photograph and drawing; First bank of the United States

Catalog Description

3 Semester Credit Hours
Survey of techniques of restoration and stabilization of historic buildings; standards of workmanship; traditional methods and new technologies. Survey of documentation techniques and preservation design.

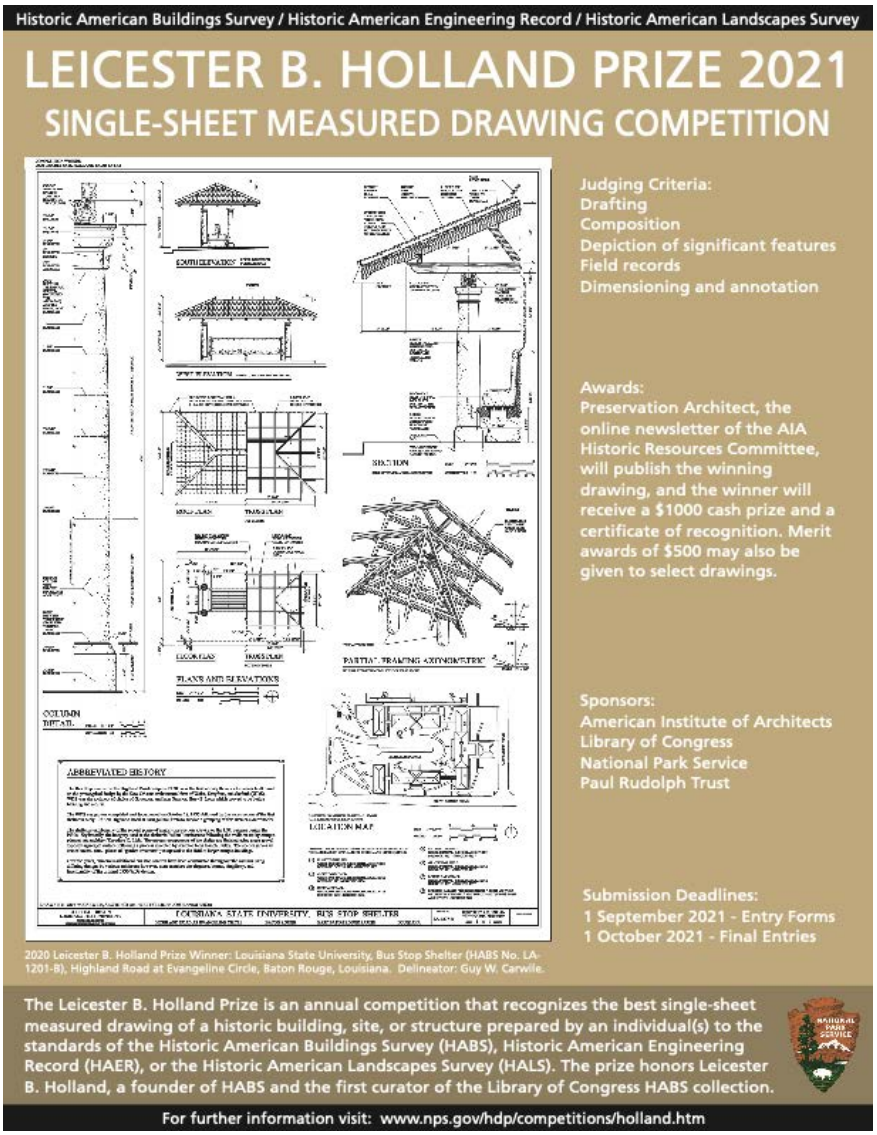
Course Overview and Description

As a core course in the Historic Preservation and Design graduate program, ARCH 5321 has a two-fold purpose: (1) to introduce students to recordation and survey techniques for historic sites with a focus on the standards and guidelines regulated by the National Park Service's Historic American Buildings Survey and (2) to provide students with opportunities to study the cultural object in depth by examining common historical and contemporary building materials with the goal of understanding their basic properties; the ways in which they have been transformed into building elements, assemblies, and systems; typical causes for changes over time; and protocols for conservation.

Students will undertake building research using field notes, digital photography, digital documentation and drawings, and based on the data collected prepare measured drawings both by hand and with CAD. Students will produce two principal outputs for this course: a comprehensive and detailed building investigation, known as a Historic Structure Report (HSR), and a single-sheet submission to the Leicester Holland Prize.

Learning and Performance Objectives

- To develop a general understanding of architectural preservation
- To develop an understanding of the Secretary of the Interior's standards for historic preservation
- To develop an understanding and enhancing skills of architectural documentation for built heritage
- To develop an understanding of building material conservancy
- To explore various methods of architectural documentation and surveying
- To explore how heritage conservation intersects with issues of equity and social justice
- To understand what Historic Structure Report is and the way in which it needs to be prepared
- To learn about steps in which HABS drawings need to be prepared and submitted to the Leicester Holland Prize



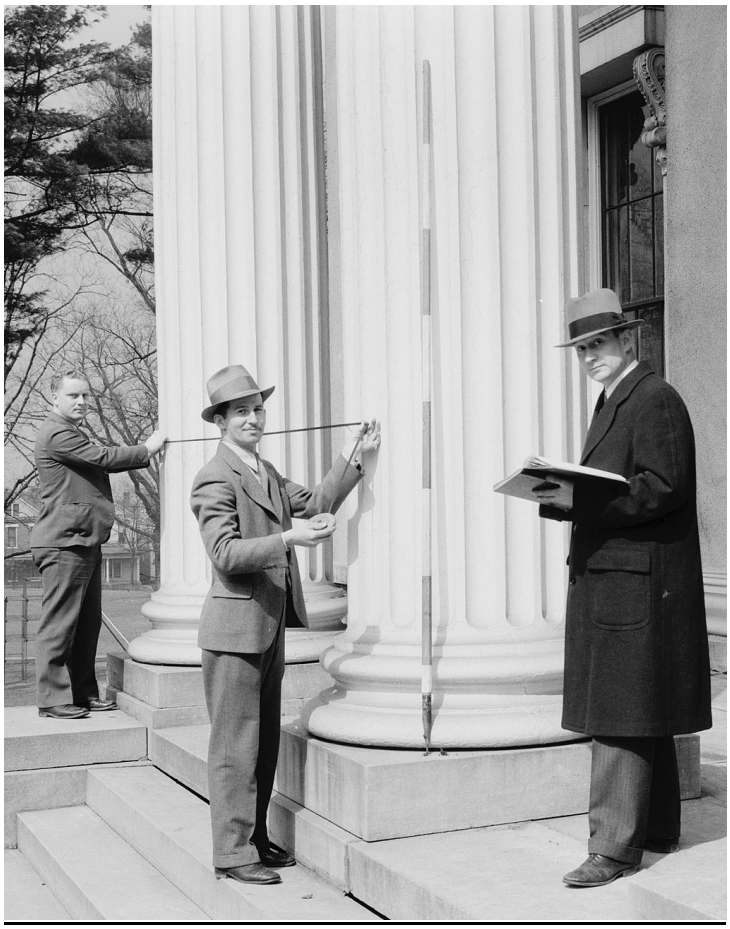
Poster for Leicester B. Holland Prize 2021 Single-sheet measured drawing competition

Methods of Evaluation

Student performance in relation to fulfilling the learning objectives will be assessed based on a series of assignments, a mid-term exam, and participation in class discussions.

1. Deliverables:
    - Week 2: Survey of a floor plan with Building Description (2.5%)
    - Week 3: Brief presentation on potential project site (2.5%)
    - Week 4: Survey of one floor plan of an entire building and its description and analysis (2.5%)
    - Week 5: Survey of a window construction (2.5%)
    - Week 6: Condition description and assessment (presentation and a 5-to-7-page written document) (2.5%)
    - Week 7: CAD floor plans (2.5%)
    - Week 8: Photograph of your final project (2.5%)
    - Week 9: Mid-term exam (15%)
    - Week 10: 50% submission of final drawings (2.5%)
    - Week 11: Part 1 of HSR: History, Significance, and Architectural Description (5%)
    - Week 13: Part 2 of HSR: Condition Assessment (5%)
    - Week 15: Part 3 of HSR: Recommendations for Treatment (5%)
    - Week 16: Final Review and presentation (10%)
    - Week 17: Final Project: HSR (15%) + Single-Sheet submission to the Leicester Holland Prize (15%)

2. Methods of Assessment:
    1. Completion of all deliverables (weekly assignments and final project) in a timely manner
    2. Participation in class discussions and thoughtful engagement with critical questions regarding the context
    3. Mid-term exam



HABS team in 1934 measuring the Kentucky School for the Blind.

Teaching Methods

1. Course Instruction:
   This is a synchronous online course meaning that the instructor and students are together in the same session, which will begin and end at a fixed time.
2. Course Website on Blackboard:
   We will use Blackboard (www.blackboard.ttu.edu) for official course communications and assignment submittal.
3. ZOOM Classroom:
   We will plan to use Zoom video conferencing as our virtual classroom for lectures, presentations, and individual and group discussions. Please join the class on Zoom at the start of each class session. Please turn on your video and mute your microphone unless you are speaking.

Required Texts

- Weaver, Martin E. *Conserving Buildings* (New York: Wiley 1997).
- US Dept of Interior, *The Preservation of Historic Architecture* (online and in print)
- Prudon, Theodore. *Preservation of Modern Architecture* (New York, Wiley, 2008).

The instructor will provide reading materials (digital format) as required. Additionally, the following books are recommended for having a better understanding of the course lectures:

- Chusid, Jeffrey M. *Saving Wright: The Freeman House and Preservation of Meaning, Materials, and Modernity* (New York: W. W. Norton & Company, 2011).
- Young, Robert. *Historic Preservation Technology* (New York: Wiley, 2008)
- Ching, Francis D. K. *A Visual Dictionary of Architecture*, Wiley.

Weekly Outline and Readings

Week 1 January 21	Explanation of the purpose, Introduction to class, content and requirements, final project, and necessary equipment and bibliographic materials
Week 2 January 26 January 28	The Nature of the Project Process: analysis, description and prescription The Secretary of the Interior's Standards for HSRs: history, condition, program; identifying a treatment Hand-Drafting Tutorial; introduction to CAD CAD: lines, layers, and commands; basic of hand drafting Readings: Preservation Briefs 17, 43 Due: Survey (sketch and measure, using appropriate HABS standards) a floor plan of a chosen room. Drawings need not be to scale, but should be clear, legible, and fully labeled and dimensioned. Add written description (information about the building, history, architecture…)
Week 3 February 2 February 4	Exterior Enclosures and their Materials: roofs, walls, doors, and windows CAD: model space, review commands Readings: Preservation Briefs 4, 8, 13, 19, 22, 29, 30, 45, 47 Due: Prepare a brief presentation on potential final project site(s)
Week 4 February 9 February 11	Interior Finishes and their Materials: walls, floors, ceilings, plastic, paints, fabrics Drafting conventions: line weights, etc. CAD: Converting field notes into working drawings; line weights. Readings: Preservation Briefs 18, 21, 23, 28, 40 Due: Survey one floor plan of an entire building; may be same as final project site.
Week 5 February 16 February 18	Wood: woodworking tools and technology Integrating photographs and measured drawings CAD: Using photographs and xrefs in model space; scale Readings: Preservation Brief 9; Weaver Ch. 4 Due: Bring a high-resolution, digital photograph of your final project building (preferably a major elevation) to class. Due: Survey a window construction; include a plan, section, and elevation. Also prepare logistics for fieldwork (letters, permissions, approvals, etc.)

Week 6 February 23 February 25	Stone: Stone availability and fabrication; Natural defects; Poor craftsmanship; Weathering Review requirements of sheet borders; laying out a successful sheet CAD: Using paper space Readings: Preservation Brief 2; Weaver Ch. 5 Due: Building description, condition description and assessment: 5-7 pages max, text and images
Week 7 March 2 March 4	Adobe, Brick, Terra Cotta CAD: Plotting; typeface, and dimensions; Xrefs in paper space, manipulating viewports, laying out sheets, managing drawings Readings: Weaver Ch. 6 Due: Continual progress of final drawings (CAD of plans)
Week 8 March 9 March 11	Architectural Photography Due: Photograph of your final project
Week 9 March 16 March 18	Cements: The mining and manufacture, and use of lime, plasters, "artificial stone," concrete, reinforced concrete, pre-cast concrete, robotic fabrication Readings: Preservation Brief 15, 21, 22; Weaver Ch. 7. Chusid Ch. 5. Mid-term exam (March 18)
Week 10 March 23 March 25	Metals: Decay in iron, steel, copper, bronze, tin, lead, and aluminum Readings: Preservation Brief 27; Weaver Ch. 9. Due: 50% submission of final drawings (Review in Class)
Week 11 March 30 April 1	Updating Systems and Accessibility: natural ventilation; heat gain and heat loss; insulation; fire codes; public access/handicapped accessibility problems; equity and equality Readings: Preservation Briefs 24, 32 Due: Part 1 of HSR due: History, Significance, and Architectural Description
Week 12 April 6 April 8	Preservation of Modern Architecture: methods, materials, and problems Readings: Prudon Ch. 1, 2, 4
Week 13 April 13 April 15	Review in Class: 75% submission of final drawings + HSR report Due: Part 2 of HSR due: Condition Assessment
Week 14 April 20 April 22	Post Processing Introduction to In Design, and Photoshop
Week 15 April 27 April 29	Lab time in class Due: Part 3 of HSR due: Recommendations for Treatment and Cost Estimate
Week 16 May 4	Final Review LAST DAY OF CLASS
Week 17 May 6-11	Final Project Due HSR + Single-Sheet submission to the Leicester Holland Prize

Grading

Grade Distribution

Participation	10%
Class Projects	20% (each project 2.5%)
Parts 1,2,3 of HSR	15% (each part 5%)
Mid-Term Exam	15%
Final Presentation	10%
Final Project	30% (15% HSR + 15% single-sheet submission)

Grading Policy

Grade A: *Superior work*. Exceptional performance strongly exceeding requirements of assignments; initiative proving independent resourcefulness; strong positive attitude toward the work; a growing level of improvement.

Grade B: *Good, above average*. Adequate performance above the norm, accurate and complete, beyond requirements of assignments: good initiative; positive attitude toward the work; improvement showing marks of progress.

Grade C: Average. Mediocre or conservative performance, satisfying all requirements of assignments with a neutral and ordinary level of initiative, attitude, and performance.

Grade D: *Not Acceptable*. Performance not meeting the passing standards of the course. Initiative unacceptable. Work below standard.

Grade F: *Failing*. Ineffective performance not satisfying the requirements of the assignments to an extreme degree. Level of initiative, attitude, and improvement non-existent.

A student who has shown clear improvement throughout the semester may see that improvement given favorable consideration in the final grade.

For the purpose of calculating the final grade, the following numbering system will be used: A+ = 97–100, A = 93–96, A- = 90–92, B+ = 87–89, B = 83–86, B- = 80–82, C+ = 77–79, C = 73–76, C- = 70–72, D+ = 67–69, D = 63–66, D- = 60–62; F = below 60.

Attendance Policy

The College of Architecture at Texas Tech University takes the professional preparation of its students as future architects very seriously. Architectural professionals understand the importance of being present, on time, with work completed. Adherence to these professional standards begins in architectural education. Thus, attendance is mandatory. For a graduate course, "attendance" means more than showing up to class. It means coming to class having read the materials and completed any and all assigned tasks for that class. It also means submitting assignments on time. Please remember that each class builds on the previous one and absence from class will seriously hinder comprehension of the materials.

A maximum of two absences will be excused. For each unexcused absence after that, 2% will be deducted from the final grade. However, as per college-approved policy, more than five absences (excused or unexcused) will result in a failing grade. In keeping with the same spirit,

students who attend all the classes in the semester will be eligible to receive an extra 2% in their final grade.

Each student is expected to attend all lectures and discussions in their entirety. Arriving late to class, working on anything other than class work, and departing early can be considered absences.
Also see the College of Architecture's Class Attendance policy on page 96 of the TTU Undergraduate and Graduate Catalogue, 2019–2020, available at http://www.depts.ttu.edu/officialpublications/pdfs/2019-2020_catalog_TTU.pdf, and TTU's class attendance policy on page 40, in the TTU Undergraduate and Graduate Catalogue, 2019–2020, at http://www.depts.ttu.edu/officialpublications/pdfs/2019-2020_catalog_TTU.pdf.

COVID-19 INFORMATION

Face coverings are required. Texas Tech University requires that students wear face coverings while in classes, while otherwise in campus buildings, and when social distancing cannot be maintained outdoors on campus.

Signage. Be attentive to signage posted at external and some classroom doorways that indicates entry and exit ways, gathering and queuing spaces, and availability of masks and hand sanitizer.

Illness-Based Absence Policy
If at any time during this semester you feel ill, in the interest of your own health and safety as well as the health and safety of your instructors and classmates, you are encouraged not to attend face-to-face class meetings or events. Please review the steps outlined below that you should follow to ensure your absence for illness will be excused. These steps also apply to not participating in synchronous online class meetings if you feel too ill to do so and missing specified assignment due dates in asynchronous online classes because of illness.

1. If you are ill and think the symptoms might be COVID-19-related:
a. Call Student Health Services at 806.743.2848 or your health care provider.
b. Self-report as soon as possible using the ttucovid19.ttu.edumanagement system. This website has specific directions about how to upload documentation from a medical provider and what will happen if your illness renders you unable to participate in classes for more than one week.
c. If your illness is determined to be COVID-19-related, remaining documentation and communication will be handled through the Office of the Dean of Students, including notification to your instructors.
d. I If your illness is determined not to be COVID-19-related, please follow steps 2.a-d below.

2. If you are ill and can attribute your symptoms to something other than COVID-19:
a. If your illness renders you unable to attend face-to-face classes and/or to participate in synchronous online classes, and/or to meet specified assignment due dates in asynchronous online classes, you are encouraged to visit with either Student Health Services at 806.743.2848 or your health care provider. Note that Student Health Services and your own and other health care providers may arrange virtual visits.
b. During the health care provider visit, request a "return to school" note.

c. E-mail the instructor a photograph or a scan of that note.
d. Return to class by the next class period after the date indicated on your note.

Following the steps outlined above helps to keep your instructors informed about your absences and ensures your absence or missing an assignment due date because of illness will be marked excused. You will still be responsible to complete within a week of returning to class any assignments, quizzes, or exams you miss because of illness.

If you have interacted with individual(s) who have tested positive for COVID-19:
a. Maintain a list of those persons and consult Student Health Services at 806-743-2911 or your primary health care provider on next steps.
b. Do not return to class until you are medically cleared by your health care provider.

University Required Statements

ADA STATEMENT

Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note: instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact Student Disability Services in West Hall or call 806-742-2405.

ACADEMIC INTEGRITY STATEMENT

Academic integrity is taking responsibility for one's own class and/or course work, being individually accountable, and demonstrating intellectual honesty and ethical behavior. Academic integrity is a personal choice to abide by the standards of intellectual honesty and responsibility. Because education is a shared effort to achieve learning through the exchange of ideas, students, faculty, and staff have the collective responsibility to build mutual trust and respect. Ethical behavior and independent thought are essential for the highest level of academic achievement, which then must be measured. Academic achievement includes scholarship, teaching, and learning, all of which are shared endeavors. Grades are a device used to quantify the successful accumulation of knowledge through learning. Adhering to the standards of academic integrity ensures grades are earned honestly. Academic integrity is the foundation upon which students, faculty, and staff build their educational and professional careers. [Texas Tech University ("University") Quality Enhancement Plan, Academic Integrity Task Force, 2010]

RELIGIOUS HOLY DAY STATEMENT

"Religious holy day" means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code §11.20. A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. A student who is excused under section 2 may not be penalized for the

absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

DISCRIMINATION, HARASSMENT, AND SEXUAL VIOLENCE STATEMENT

Texas Tech University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from gender and/or sex discrimination of any kind. Sexual assault, discrimination, harassment, and other Title IX violations are not tolerated by the University. Report any incidents to the Office for Student Rights & Resolution (806)-742-SAFE (7233) or file a report online at titleix.ttu.edu/students. Faculty and staff members at TTU are committed to connecting you to resources on campus. Some of these available resources are as follows:

- The TTU Student Counseling Center, 806-742-3674, https://www.depts.ttu.edu/scc/, which provides confidential support on campus
- The TTU 24-hour Crisis Helpline, 806-742-5555, which assists students who are experiencing a mental health or interpersonal violence crisis (if you call the helpline, you will speak with a mental health counselor)
- The Voice of Hope Lubbock Rape Crisis Center, 806-763-7273, voiceofhopelubbock.org, which is a 24-hour hotline that provides support for survivors of sexual violence
- The Risk, Intervention, Safety and Education (RISE) Office, 806-742-2110, https://www.depts.ttu.edu/rise/, which provides a range of resources and support options focused on prevention education and student wellness
- The Texas Tech Police Department, 806-742- 3931, http://www.depts.ttu.edu/ttpd/, where you can report criminal activity that has occurred on or near Texas Tech campus

CIVILITY IN THE CLASSROOM STATEMENT

Texas Tech University is a community of faculty, students, and staff that enjoys an expectation of cooperation, professionalism, and civility during the conduct of all forms of university business, including the conduct of student–student and student–faculty interactions in and out of the classroom. Further, the classroom is a setting in which an exchange of ideas and creative thinking should be encouraged and where intellectual growth and development are fostered. Students who disrupt this classroom mission by rude, sarcastic, threatening, abusive or obscene language and/or behavior will be subject to appropriate sanctions according to university policy. Likewise, faculty members are expected to maintain the highest standards of professionalism in all interactions with all constituents of the university (www.depts.ttu.edu/ethics/matadorchallenge/ethicalprinciples.php).

LGBTQIA SUPPORT STATEMENT*

I identify as an ally of the lesbian, gay, bisexual, transgender, queer, intersex, and asexual (LGBTQIA) community, and I am available to listen to and support you in an affirming manner. I can assist in connecting you with resources on campus to address problems you may face pertaining to sexual orientation and/or gender identity that could interfere with your success at Texas Tech. Please note that additional resources are available through the Office of LGBTQIA within the Center for Campus Life, Student Union Building, Room 201, www.lgbtqia.ttu.edu, 806.742.5433.

Within the Center for Campus Life, the Office serves the Texas Tech community through facilitation and leadership of programming and advocacy efforts. This work is aimed at strengthening the lesbian, gay, bisexual, transgender, queer, intersex, and asexual (LGBTQIA) community and sustaining an inclusive campus that welcomes people of all sexual orientations, gender identities, and gender expressions.

OWNERSHIP OF STUDENT WORK

The College of Architecture reserves the right to retain, exhibit, and reproduce work submitted by students. Work submitted for a grade is the property of the College and remains as such until it is returned to the student. For exhibition purposes, please keep all material available for the instructor until the end of the semester.