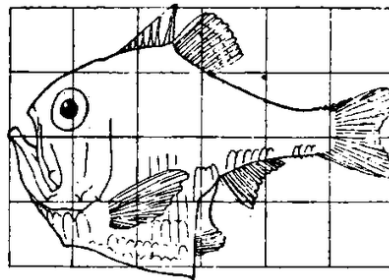


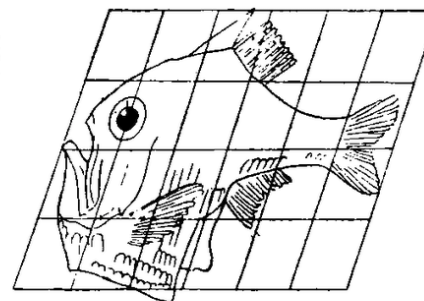
# SPATIAL MORPHOLOGY & TYPOLOGY

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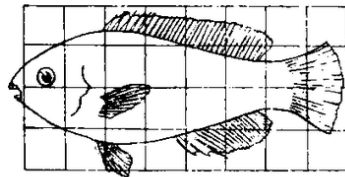
ARCH 5301 - Individual study projects in architecture of special interest to students.



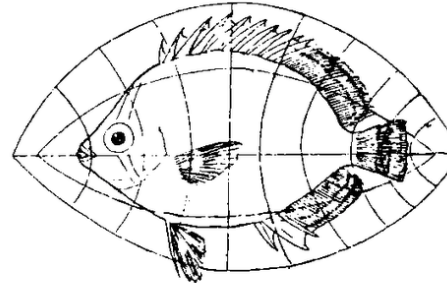
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D'Arcy Thompson, *On Growth & Form*, 1917

# SPACE, MORPHOLOGY, TYPOLOGY

Unlike most architectural problems, the plan of the hospital is the strongest factor in the design.

Edward F. Stevens, *The American Hospital of the Twentieth Century*, 1928

...insistence on the role of aesthetics - of the viewer and in experience...invokes the possibility of re-conceiving the notion of program in a way that occludes the fatal modernist gap between form and function.

Anthony Vidler, *Toward a Theory of the Architectural Program*, 2003

**This course pays attention to the following questions:**

1. How do we describe space itself?
2. How do we relate dimensions of buildings to human experience and cognition?
3. How do relate individual buildings to the architectural tradition?
4. And how does seeking answers to these questions elucidate ways we might better design, assuming we can define what we mean, in a given situation, by "better"?

## **I. Space and its description**

Interconnected and inhabitable space is a key distinguishing feature of architecture as compared to other arts and other design fields. As a discipline and profession, we stand to benefit from a better ability to describe space, beyond typical standards like square footages and adjacencies.

Intuition, precedent, and folk theory are often used to make projections about designed space. In this course, we will take an approach to the description of space that is theoretical, empirical, and sometimes quantitative, focusing on how society and space mutually construct one another. You will learn theories, methods, and software tools that can check, refine, and enhance your intuitions about how space works.

For the spatial measures we will use, social and perceptual dimensions of floorplans are built in from the get-go. Embedding the user and experience in the measures themselves enables these approaches to sidestep the form/function divide to some degree and to provide feedback about spatial resources of a given configuration with respect to the human condition.

## **II. Morphology**

The term “morphology” extends a biological approach to the study of form, following D'Arcy Thompson, that emphasizes relational measures within and between specimens and species. This relational approach embeds context into mathematical descriptions of things. It also adds meaning to how we make comparisons, letting us distinguish, for example, between structural and contingent features within groups. The groups we will study are spatial configurations, specifically and in most cases, floorplan layouts.

## **III. Typology**

Building types can be thought of both in terms of forms that recur (such as ‘pavilion’, ‘plinth’, or ‘tower’) as well as in terms of culturally agreed-upon functions (such as hospital, prison, or school).

That said, the conversation defining building typology has involved a plurality of positions over hundreds of years, and these debates emerge at the origin of architecture as a profession and attempt to define our relation to the material, cultural, and social world, including our heritage of architectural forms and ideas.

Types - both the form and the planned-for function, to use Philip Steadman’s formulation - are designed with the imaginative projection of some codified form of life, some expected stereotypical patterns of activity. In doing so, built forms fortify certain relationships and activities, while diminishing others. This sort of relation, of the architectural to the human condition, is a thematic of this course.

## Means of Evaluation:

1. Sketches and handwritten notes for course readings, to be shared in class via Zoom and uploaded to course folder. Work by hand, use a sketchbook or loose pages, and upload a photo of your pages.
  - a. Your notes should consist of 5-7 bullet points on key ideas in each reading and 1 or more diagrams or sketches that you use to visualize some aspect of each reading.
  - b. Notes are due in the course folder prior to class; you will be expected to screen-share your course notes in class.
  - c. Days on which notes are due are in gray fill on the course schedule.
  - d. Please use this file name convention: YourLastName-AuthorLastName-SketchNotes-YYYYMMDD  
example: "Zook-Evans-SketchNotes-20200823"
  - e. 25% of grade
2. Leading a 20-30 minute extended discussion of one day's reading/s with relevant slides. Your task here is to extrapolate key ideas from readings to cases in architecture, including and in addition to those named in the specific reading.
  - a. Includes preparation and sharing of slides.
  - b. Must be uploaded to the course folder after class. Please use this file name convention: YourLastName-AuthorLastName-Slides-YYYYMMDD  
example: "Zook-Evans-Slides-20200823"
  - c. 10% of grade
3. Submission of analysis reports associated with Depthmap (software) learning exercises.
  - a. Three software learning sessions; each report is based on four components:
    - i. Completion of analysis in Depthmap,
    - ii. Extracting numerical data from the analysis,
    - iii. Post-processing image exports from Depthmap, and
    - iv. Writing a short descriptive verbal and illustrative report, including simple data tables.
  - b. Detailed instructions will be issued for each session.
  - c. 15% of grade
4. The development of an individual research paper using spatial analysis as part of a multiple case study dealing with space, morphology, and typology.
  - a. An assignment sheet with specific instructions will be issued on October 22 in class.
  - b. The paper is due on November 24 by midnight.

- c. There will be interim presentations and meetings as you develop your paper.
- d. 50% of grade

### **Recap of Learning Methods & Grading**

1. Provide notes and sketches that demonstrate completion of and reflection on readings, 25% of grade.
2. Submit analysis reports for Depthmap exercises, 15% of grade.
3. Provide examples and visual materials to extend the discussion of a specific day's reading/s, 10% of grade.
4. Write a research paper, 50% of grade.

Grading is based on timeliness, completeness, rigor of inquiry, and quality of written and graphic expression.

You may resubmit a substantially revised version of your 5000-word paper for regrading on or before December 8.

## Course Schedule

☐ Reading notes due

**Bold = Analysis report or paper due**

week	DATE	THEME	READING/EXERCISE DUE
1	aug 25	Overview	----
	aug 27	Spatial morphology	Evans, <i>Figures, doors, &amp; passages</i> Install DepthmapX <a href="https://varoudis.github.io/depthmapX/">https://varoudis.github.io/depthmapX/</a> Claim a day to lead the extended discussion of the readings
2	sept 1	Spatial morphology	Hanson, <i>Two domestic 'space codes' compared</i> Massey, <i>Space Place and Gender</i>
	sept 3	Spatial morphology	Tzortzi, <i>Art museum as a city or a machine?</i> Peponis & Stavroulaki, <i>Spatial construction of seeing at Castelvechio</i>
3	sept 8	Spatial morphology	(Analysis/lab day)
	sept 10	Spatial morphology	Grajewski, <i>SAS office: Spatial configuration and interaction patterns</i> Hillier et al, <i>Space syntax: A different urban perspective</i>
4	<b>sept 15</b>	Spatial morphology	Bafna, <i>Corridor design: A primer</i> Clark & Chalmers, <i>The extended mind</i> <b>Analysis report 1 due.</b>
	sept 17	Spatial morphology	(Analysis/lab day)
5	sept 22	Spatial morphology	Trites, <i>Influence of Nursing-Unit Design on the Activities and Subjective Feelings of Nursing Personnel</i>  Ossmann, <i>Isovist connectivity: Measuring the potential for concurrent targeted surveillance and general awareness</i>

week	DATE	THEME	READING/EXERCISE DUE
	sept 24	Spatial morphology	Bafna, Losonnczi, & Peponis, <i>Perceptual tuning of a simple box</i> Hoffman & Singh, <i>Vision: Form Perception</i> <b>Analysis report 2 due.</b>
6	sept 29	Typology	Bafna, <i>The role of corporeal form in architectural thinking</i> Selections from Rowe & Koetter, <i>Collage City</i>
	oct 1	Typology	<b>Final paper assignment sheet issued</b> Moneo, <i>On Typology</i>
7	oct 6	Typology	(Analysis/lab day)
	oct 8	Typology	Hillier, <i>The architecture of the urban object</i>
8	oct 13	Synthesis	Vidler, <i>Architecture of the Third Typology</i> <b>Analysis report 3 due.</b>
	oct 15	Synthesis	Vidler, <i>Toward a theory of the architectural program</i> Banham, <i>A clip-on architecture</i>
9	oct 20	Synthesis	Rosner, "Minimal Writing" and "The House that Virginia Woolf Built and Rebuilt", from <i>Machines for Living</i>
	oct 22	Synthesis	---open---
10	oct 27	Final paper development	Presentation of topics
	oct 29	Final paper development	Presentation of topics
11	nov 3	Final paper development	<i>Individual progress meetings, no class</i>
	nov 5	Final paper development	<i>Individual progress meetings, no class</i>
12	nov 10	Final paper development	<i>Individual progress meetings, no class</i>

week	DATE	THEME	READING/EXERCISE DUE
	nov 12	Final paper develop- ment	Student presentations
13	nov 17	Final paper develop- ment	Student presentations
	nov 19	Final paper develop- ment	Student presentations
14	<b>nov 24</b>	<b>Paper due</b>	<b><i>No class meeting</i></b>
	nov 26	Holiday	<i>No class meeting</i>
15	dec 1	Final reviews	<i>No class meeting</i>
	dec 3	Final reviews	<i>No class meeting</i>
16	dec 8		last day for any paper resubmits

\* These dates are subject to change at the discretion of the instructor and/or the College of Architecture.



## **COURSE OBJECTIVES**

### **Student Learning Objectives**

1. You will understand a general theory of space and its implications for architecture.
2. You will become knowledgeable on the effects of spatial configuration on human experience and cognitions.
3. You will gain an understanding of the definitions and uses of architectural typology.

### **Student Performance Objectives**

1. You will learn concepts, software tools, and techniques for predictive spatial analysis.
2. You will learn skills in conducting quantitatively-enhanced case study research on architecture.
3. You will build on your skills in writing, illustrating, and presenting scholarly and research-based information on architecture.

## **NAAB Criteria Met**

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.3 Investigative Skills: Ability to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.

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.

A.8 Cultural Diversity and Social Equity: Understanding of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the responsibility of the architect to ensure equity of access to sites, buildings, and structures.

## NOTICES REGARDING COVID-19

### **Potential of change to an all-online modality**

If Texas Tech University campus operations are required to change because of health concerns related to the COVID-19 pandemic, it is possible that this course will move to a fully online delivery format. Should that be necessary, students will need to have access to a webcam and microphone for remote delivery of the class. Please see the supplementary syllabus from your instructor for additional required resources you may need.

### **Face coverings**

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.

### **Seating assignments**

The purpose of assigned seating is to assist in contact tracing, if necessary, and to augment social distancing. Students are expected to sit at a minimum of six feet apart. We will create a permanent seating chart on the first day of face-to-face instruction in the studio space. A required seating chart will be created once everyone is positioned with appropriate social distancing. There will also be an orderly procedure, designed to ensure social distancing, for exiting the classroom. [We have been notified that a guidebook will be distributed at the All-School Meeting; please refer to it.]

### **Policy on absences due to illness**

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. After hours and on weekends contact TTU COVID-19 Helpline at 806.743.2911.
  - b. Self-report as soon as possible using the Dean of Students COVID-19 webpage. 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, all remaining documentation and communication will be handled through the Office of the Dean of Students, including notification of your instructors of the period of time you may be absent from and may return to classes.
  - d. 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, participate in synchronous online classes, or miss 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 provider visit, request a "return to school" note;
  - c. E-mail the instructor a picture 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:  
Maintain a list of those persons and consult Student Health Services at 806-743-2911 or your primary care provider on next steps.

Do not return to class until you are medically cleared by your Health Care Provider.

## UNIVERSITY 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](http://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: TTU Student Counseling Center, 806- 742-3674, <https://www.depts.ttu.edu/scc/>(Provides confidential support on campus.) TTU 24-hour Crisis Helpline, 806-742-5555, (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.) Voice of Hope Lubbock Rape Crisis Center, 806-763-7273, [voiceofhopelubbock.org](http://voiceofhopelubbock.org) (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/> (Provides a range of re-sources and support options focused on prevention education and student wellness.) Texas Tech Police Department, 806-742- 3931, <http://www.depts.ttu.edu/tttd/> (To report criminal activity that occurs 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 high-est standards of professionalism in all interactions with all constituents of the university ([www.depts.ttu.edu/ethics/matadorchallenge/ethicalprinciples.php](http://www.depts.ttu.edu/ethics/matadorchallenge/ethicalprinciples.php)).

#### **LGBTQIA SUPPORT STATEMENT:**

Office of LGBTQIA, Student Union Building Room 201, [www.lgbtqia.ttu.edu](http://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, inter-sex, and asexual (LGBTQIA) community and sustaining an inclusive campus that welcomes people of all sexual orientations, gender identities, and gender expressions.

I identify as an ally to LGBTQIA individuals and communities.