

SCHOOL OF ARCHITECTURE  
OKLAHOMA STATE UNIVERSITY



STUDENT GUIDE

*The vision of the School of Architecture is to empower students to make creative contributions in the cause of architecture.*

*The mission of the School of Architecture is to cultivate a collaborative learning community focused upon critical thinking and ethical responsibility. We embrace established fundamentals and encourage the exploration of emerging innovations in design and technology.*

# STUDENT GUIDE

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# WELCOME

Hello students of the School of Architecture!

Ours is a very special community; you may be new to the school and our studio culture, or you may already be familiar with the quality of student life here. Welcome, as we start a new semester! Each semester is a new beginning – a time when you can decide to commit your time and effort, and truly explore the ideas and opportunities offered to you. Your faculty and I are dedicated to working with you, to propel your education to the next level. You only get to spend five years or so with us – together let's make those years count!

In this manual you will learn about the many opportunities and resources available to you within the School of Architecture. Keep in mind that our college, CEAT, and the university offer many more ways to engage or receive assistance - as the case may be. I encourage you to focus your experience as a student at OSU on learning, doing, and becoming your best self.

Good luck, and Go Pokes!

## **Suzanne Bilbeisi, AIA**

Centennial Professor of Architecture  
Head of the School of Architecture

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Website: <https://arch-ceat.okstate.edu>

Facebook: Oklahoma State University School of Architecture

Instagram: @OkStateArch

Twitter: @OkStateArch

# OUR SCHOOL

The School of Architecture has enjoyed a 110-year history as an important unit within Oklahoma State University, a significant land-grant academic and research institution. Today, the School is proud of its innovative faculty, supportive staff, hard-working and talented students, and state of the art facility. The School is known as a professional program offering undergraduate degrees in architecture and architectural engineering. The relationship of the School to the College of Engineering, Architecture, and Technology is unique and supports the strong and symbiotic relationship between the 19 faculty and 325 students in architecture and architectural engineering. The strong relationship between programs is key to the success of OSU School of Architecture graduates, who enjoy great success in the practice of architecture and architectural engineering in Oklahoma, the United States, and the world.



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## ▼ 2019 Grand opening of the ARCH Centre



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# OUR PROGRAMS



## Architecture Degree

Architecture is the complex synthesis of creatively solving problems involving both art and science through the disciplined orchestration of image-making, activity organization, technological applications, legal constraints and budgetary parameters which together express culture, enhance quality of life and contribute to the environment. The Bachelor of Architecture degree at OSU is accredited by NAAB. The design studio is the center of the educational program in architecture. It is the setting where students and faculty work closely together, and where all specialized study and knowledge

comes together as a synthesized study in design. Education in architecture consists of classroom and studio courses, conducted in an intellectual climate which stimulates inquiry, introduces principles and values, and teaches the disciplines necessary to work in collaboration with others. The goal of the program is to educate future leaders within the architecture profession. Graduates who hold this degree typically enter the profession of architecture, but the broad problem-solving education that is central to the degree allows a graduate to pursue tangent careers as well.



## Architectural Engineering Degree

The study of architectural engineering (AE) is an integrated mix of liberal studies, design, and technical education. Architectural engineers need to be able to conceptualize aesthetic issues and design complex technical systems. The School of Architecture offers two paths within Architectural Engineering: Building Structures and Construction Project Management. Both degree options are accredited by ABET, and are concerned with the technical

aspects of bringing an architectural concept to reality. Graduates in the Building Structures path will concern themselves with the design of all of the components that comprise a structural system for a building, from the foundation to the roof structure. Graduates in the Construction Project Management path will be involved in the design and management of the construction process of a building. Students in AE choose their path upon entry into Professional School.



### **Professional School**

Our degrees are professional degrees designed to lead to professional licensure, not general Bachelor of Arts or Science degrees. Based upon the successful performance in the first two years of coursework, students are admitted into the Professional Schools of Architecture or Architectural Engineering. In Professional School, students pursue more advanced areas of problem-solving in architectural or engineering design.

### **Professional School Admission**

Students apply to Professional School at the completion of their second year. Admission is granted based upon several factors, the most important of which is by meeting the minimum Selection GPA of 2.8 – based on ten courses, several of which are weighted in the calculation. For more information on the Professional School admissions process, students can find the policy on the school's website or ask the academic advisor for a copy.



### **Graduate Certificate in Integrative Design**

This 12-credit certificate provides advanced students with additional training and education in a specialty area related to the technical aspects of architecture or engineering design. The certificate culminates in an independent study course, to be supervised by two faculty members, in which the student will apply the concepts learned in coursework to the process of solving a unique design challenge fundamental to the technical area under study. The Graduate Certificate is administered by the OSU Graduate College, however students are academically advised in the School of Architecture. For more information, ask our academic advisor.

#### **Minors Offered:**

The School offers two minors: History/Theory of Architecture (ASHT), and Architecture & Entrepreneurship (ASAE). Each is 21 credit hours with some overlap of required courses for the major. With careful planning, a minor can be achieved at no extra cost. Ask our academic advisor for more details.

# LEARNING & TEACHING CULTURE

The Learning & Teaching Culture Policy outlined herewith is an agreement between all students and faculty in the Oklahoma State University School of Architecture, and was created in order to assure a positive and healthy academic, social and professional environment within the unique culture of the School of Architecture. This Policy represents a cultural change and conservation agreement, and does not constitute official University policy. The basis and power of this Policy lies in action and discussion; it represents a set of values and goals, and the actions necessary to achieve them.

## Education

The educational experience of the OSU School of Architecture is as unique and rewarding as it is intensive and time-consuming. As such, the Architecture and Architectural Engineering curriculums require open and honest communication between students and faculty about progress, quality and grades to ensure a basis for development and advancement.

The educational culture of the School of Architecture functions on a balance of collaboration and healthy competition. Students and faculty are expected to share with and aid others in the process of becoming better designers; collaboration not only between students and faculty but also between different disciplines serves to create well-rounded students and professionals. Simultaneously, competition within the School is used as a tool for motivation and advancement, though collaboration and camaraderie within competitions is welcome and encouraged.

Students are encouraged to learn through exploration of many ideas and processes, guided by the experience of their professors. Important



components of design education are learned and taught outside of the design studio, and as such it is expected that students and faculty will place equal importance on all courses and educational experiences, both inside and outside the School of Architecture. It is acknowledged that education outside of the School of Architecture both during a student's college career and after their graduation is important, and students and faculty should understand that the learning process in a design field never stops.

The students and faculty of the School of Architecture will tolerate no violation of the University's Academic Integrity Policy, including wrongful appropriation of a creative work or design.

### **Health & Wellness**

The intensive nature of university education and the curriculum of the School of Architecture require that students maintain healthy lifestyle habits to succeed. These include healthy sleeping, eating and social habits, as well as habits to facilitate overall well-being. The School of Architecture, its faculty and its students will continue to place great importance on a healthy lifestyle throughout the educational process, and all are expected to spread and teach healthy habits while discouraging unhealthy ones. Time management is a large part of maintaining healthy habits, and will be taught, encouraged and facilitated by faculty and students.

It is well-known that education and life in general can often be overwhelming. Support for students will be offered whenever possible and prudent in the interest of maintaining physical and mental health. It is also acknowledged that education can be financially taxing; students and faculty should strive to

◀ [Students working in first-year studio](#)

communicate openly about financial requirements and strain, and whenever possible this strain should be minimized so that focus and intention can remain on education and learning.

### **Social Environment**

The community of the School of Architecture is of paramount importance to the growth and development of students and faculty as individuals and the school as a whole. Students and faculty are encouraged and expected not only to participate in this community through interpersonal relationships, school events, school organizations and other community efforts, but to facilitate its maintenance and growth.

In a community as unique and close-knit the School of Architecture, mutual respect is the difference between a constructive or toxic culture. No disrespect, discrimination or persecution based on any form of diversity will be tolerated within the School.

The School of Architecture encourages and facilitates mentorship at the student, faculty and professional levels. Healthy relationships with knowledgeable mentors is an important part of educational and professional development, and while programs are in place for the creation and facilitation of mentor-mentee relationships, each student is encouraged to find a mentor in their own way. Faculty can serve as knowledgeable and helpful mentors, and the School of Architecture prides itself on the close and healthy relationships between students and faculty.

## Physical Environment

As a direct result of the nature of architectural education the design studios and other spaces within the School of Architecture are heavily inhabited and utilized. In accordance with this usage students are expected to keep all spaces within the School as clean as possible, and strive to respect the boundaries and space of their peers. Students are free to inhabit and utilize the studio in any way, unless this freedom negatively affects those around them or the educational goals of the School.

During their time working and creating in the School of Architecture students and faculty are expected to be mindful of safety and sustainability. Safe and environmentally responsible practices, both for the educational process and the profession, will be taught and utilized at the School of Architecture to ensure a positive and healthy future for our graduates and for the planet.

## Policy

The cultural potential of this policy lies in discussion and action, not in the policy itself. With that in mind the policy will be analyzed, rewritten, presented and discussed on a regular basis. The governance of this policy can be found in the complete version, referenced at the start of this version, as well as the endorsement signatures of student leaders and school administration.

*Please see your academic advisor for the full version.*

▼ Professor Bilbeisi welcoming Comprehensive Studio



# STUDENT ORGANIZATIONS



## **American Institute of Architecture Students (AIAS)**

Open to all students in the School of Architecture, this national organization provides a voice for students to our professional organizations. Our local chapter hosts academic and social activities, as well as travel to national conferences for engaged members.

Instagram: [@osu\\_aias](#)

Website: [aias.org](#)

Email: [okstate@aias.org](mailto:okstate@aias.org)

Faculty Advisor: Jerry Stivers

## **Architectural Engineering Institute (AEI)**

Open to all students, this national organization works as a student chapter with the professional society of AEI. Our local chapter hosts construction site visits, licensing exam prep, and travel to national conferences.

Instagram: [@osuae](#)

Website: [asce.org](#)

Faculty Advisor: Carisa Ramming

*We have a plethora of student organizations at the School of Architecture. To help you understand the acronyms, here is the who/what of each.*



### **Construction Specification Institute (CSI)**

Open to all students in majors involved in the building construction industry, this national organization encourages collaboration and a better understanding of each discipline's role in the profession.

Instagram: [@csiokstate](#)  
 Website: [csiresources.org](#)  
 Email: [CSlokstate@gmail.com](mailto:CSlokstate@gmail.com)  
 Faculty Advisor: Jay Yowell

### **Architecture Students Teaching Elementary Kids (ASTEK)**

Open to all students, this award-winning program teaches fifth grade elementary students in Stillwater basic design concepts used in the design of places and spaces for people.

Email: [delcole@okstate.edu](mailto:delcole@okstate.edu)  
 Faculty Advisor: Suzanne Bilbeisi

▼ AIAS members at the Forum in Toronto



### Freedom By Design (FBD)

This group is an arm of the national AIAS, which offers direct community engagement through design and building. All are welcome!

Instagram: @fbd.okstate  
 Website: <http://www.ias.org/freedom-by-design/>  
 Email: [fbd.okstate@gmail.com](mailto:fbd.okstate@gmail.com)  
 Faculty Advisor: Jay Yowell

### The Almighty S (TAS)

For women (and men) in design. Members from Interior Design, Graphic Design, Landscape Design, Architecture, and Architectural Engineering may engage in this group that seeks to support, empower, and celebrate women in all design fields.

Twitter: @thealmightys1  
 Facebook: @thealmightys.okstate  
 Instagram: @thealmightys.okstate  
 Email: [thealmightys.okstate@gmail.com](mailto:thealmightys.okstate@gmail.com)  
 Faculty Advisor: Awilda Rodriguez

▼ Design-build project by Freedom by Design



### National Organization of Minority Architecture Students (NOMAS)

Open to all students, this group champions diversity within schools of architecture and design and fosters fellowship among minority architecture students through social activities, community engagement, and an annual design competition and conference.

Faculty Advisor: Sarah Ra

### Tau Sigma Delta & Chi Epsilon

These are the national honor societies for Architecture & Landscape Architecture and Civil & Architectural Engineering students, respectively. Students in the top 20% of their entering Professional School class are invited to join and receive lifetime membership.

Faculty Advisor (TSD): Suzanne Bilbeisi  
Faculty Advisor (XE): Mark Krzmarzick

*In addition to these organizations within our school, there are many other opportunities in our college (CEAT) and the broader OSU community. We encourage you to get engaged and join an organization!*

*CEAT's Diversity & Inclusion Programs provide support to students, including those who are historically underrepresented or marginalized. For more info on CEAT's Inclusion & Diversity Plan or programs offered, contact Yokolanda Speight: [yokolan@okstate.edu](mailto:yokolan@okstate.edu).*

*OSU has over 500 student organizations! For more info check out: [campuslink.okstate.edu/organizations](http://campuslink.okstate.edu/organizations)*

# OSU ARCHITECTURE

AGAIN RANKED IN DESIGN INTELLIGENCE





Each year *Design Intelligence* prepares a survey of architects asking "Which architecture schools do you most admire for a combination of faculty, programs, culture, and student preparation for the profession?" Of the 82 public undergraduate programs in the United States, OSU ranked in the top 20 percent! Graduates of OSU Architecture were also noted as among the most desirable to hire.

Professor Moh Bilbeisi was again named one of the "Most Admired Architectural Educators" in the United States. Each year thirty professors are identified on this list; with only 2,400 full time faculty of architecture this means our Professor Moh is in the top 1% of professors in the country!

# OPPORTUNITIES

## Scholarships

CEAT scholarship applications are available via the CEAT Scholarships website and are due in late January each year. While scholarships may have specific requirements like being limited to Professional School students, you cannot be considered for a scholarship if you do not apply. The OK Board of Governors offers scholarships for architecture students through the OKC Community Foundation. Check those out! Be sure to fill out the FAFSA annually to be considered for need-based aid.

## School Awards

Our school has several special prizes or opportunities for recognition of students. The top prize is the Caudill Fellowship, which is awarded to one fifth-year student based on an external review of portfolio submissions. The Caudill Fellow is expected to travel outside the boundaries of North America for at least one month after graduation. The Baumiller Prize is awarded to the top project in the Urban Design Studio (ARCH 5117). The CEAT Dean's Outstanding Graduate is awarded to the all-around top student as judged by the faculty of the School of Architecture. At the national level, the Henry Adams Medal is an honor from the national AIA, presented to our school's graduating architecture student with the highest GPA. The Alpha Rho Chi Medal is a national

honor presented to the graduating student who has distinguished themselves with meritorious service to the school.

The Pelli Clarke Pelli Preceptorship program is designed to allow one fourth-year student the opportunity to spend 15 months working with this world-renowned firm in New Haven, CT. The position is paid; upon completion of the employment term, the student returns to OSU to complete degree requirements. The Elliott Prize is available for students who wish to explore the study of light in architecture.

Each year, the faculty select recipients for the Alumni Book Awards, presented for excellence in design studio work at every level, and in advanced studio work for AEs as well. Long story short, there are many unique awards at the School!

## Competitions

Often our design studios have internal sponsored competitions, in which students' work is evaluated by faculty and external jurors, with the goal of recognizing outstanding work. Sponsors include material suppliers such as ACME Brick and US Stone, and sometimes community groups serving as 'client' for the studio work. Students should view these as opportunities to develop their design abilities with the potential to receive recognition and earn financial prizes

along the way. Competition is healthy in the design studio, and actually mirrors professional practice in which work is often “won” in competition with other architects.

### **Mentoring Opportunities**

There are programs available, within the school and also with CEAT and OSU, to connect with peers and professionals for informal mentoring. Here at the School, we have the AIAS’s Big/Little mentoring program, which is designed to help students negotiate what it means to be a student at the School of Architecture.

For students in Professional School, we offer the Centennial Mentorship Program to connect Arch and AE students with recent alumni who can answer those difficult questions surrounding the important transition to the profession. Please engage with these programs.

### **Centennial Leadership Development Program**

Students in Professional School are invited to participate in our school’s leadership development program and receive recognition at graduation for their engagement in personal development activities. Points are awarded in the realms of academic excellence, community service, expanded worldview, personal wellness, and professional readiness. Reporting forms are available at the front desk, and must be filled out

before the end of each semester. Successful students are recognized as “Centennial Fellows” at their graduation.

### **Teaching Assistant Positions**

We offer several opportunities to work with faculty and staff as a Teaching Assistant in the School of Architecture. If you would like to be considered for a position, applications are due by Friday of Pre-Finals Week each semester.

### **Career Fair**

The career fair is organized by the AIAS and occurs each spring semester, usually in mid-February. Here reps from professional firms will want to see your resume and talk to you about summer internships or full-time employment opportunities after graduation. Be ready with a portfolio of your work, and, of course, present your best self at the event!

### **Computer Specs**

Each year the School of Architecture Technology Committee reviews and updates the list of hardware and software requirements for students in the School of Architecture. Generally speaking, the most current version of software is needed, and many of these are available to OSU students for free. Check out the IT “Software Distribution” page on the OSU website. Hardware requirements can be found on the School of Architecture website.

# RESOURCES

## Tutoring

OSU has numerous resources and tutoring options available to help you succeed. CEAT offers tutoring in all levels of math, science, engineering, and engineering science courses – just for CEAT students. There are two locations for CEAT tutoring: the ATRC Student Excellence Center and Parker Hall basement. Get tutoring help early, within the first few weeks of classes, and then as often as needed. It will make a big difference! Check out the CEAT Student Services website for tutoring info.

Other OSU resources include:

LASSO Center  
Tutoring, Supplemental Instruction (SI), & Academic Success Coaching  
*021 Classroom Building*

Math Learning Success Center (MLSC)  
*Edmon Low Library, 5th floor*

Physics tutoring & the OSU Writing Center in the Physics Help Room  
*Physical Sciences room 052*

## Mental Health

OSU has a variety of resources to promote mental health. The Walk-in Clinic (320 Student Union) is open Monday-Thursday, 10am to 3pm and is free for students to meet with a counselor for a brief session. The Reboot Center (320W Student Union) offers a space to help calm your mind and body, with regular visits from Pete's Pet Posse therapy dogs. Below is some helpful contact info. To the right are other resources available to students.

Additional Contacts:

*OSU Police*  
405-744-6523

*OSU Sexual Assault Advocates*  
405-564-2129

*Wings of Hope Crisis Line*  
405-624-3020

*National Suicide Prevention Lifeline*  
800-273-8255

*Oklahoma Mental Health & Substance Abuse Crisis Line*  
800-566-1343

**Student Counseling Center**

*320 Student Union*  
405-744-5458

First four sessions are free, then it's \$10 per session. Once you complete 12 sessions, it's \$20 for each additional session.

**Alcohol & Substance Abuse Center**

*320 Student Union*  
405-744-5458

First four sessions are free, then it's \$10 per session. Once you complete 12 sessions, it's \$20 for each additional session.

**Counseling & Counseling Psychology Clinic**

*111 Public Information Office*  
405-744-6980

Individual counseling; weekly sessions with no overall session limit. For students, the first four sessions are free, then it's \$10 per session.

**Center for Family Services**

*101 Human Sciences West*  
405-744-5058

First four sessions are free, then it's \$5 per session.

**Psychological Services**

*118 N. Murray Hall*  
405-744-5975

The initial intake is \$10, then counseling session fees are based off income (\$10 minimum).

**University Health Services**

*1202 W. Farm Road*  
405-744-7665

Medical and psychiatric care. Fees vary. Health insurance is accepted.

## Academic Advising

See Ms. Lori Carroll! She can supply you with guidance on what courses meet degree requirements, share some ideas for minor areas of study, or just provide an ear for listening. She can be found in 101 ARCH, or reached via email:

*Lori.Carroll@okstate.edu*

► Lori, our academic advisor extraordinaire!

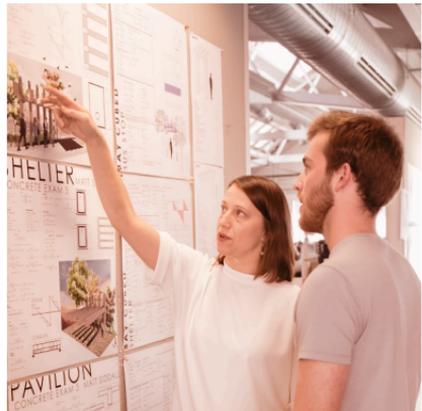


## Supplies

The Student Union Bookstore carries many supplies you need, but Stillwater also has Hobby Lobby and Lowe's. Specialty items can also be purchased via Amazon. Rhino software and some structural manuals/code books should be purchased from the School to obtain the discounted rate we receive.

## Printing

There are several high quality copiers and printers available for student use at three locations within the building: the third floor east alcove, and the second floor southeast and southwest lounges. Some copiers are free, other machines provide copies/prints for a cost per copy/print. See posted signs for more info.



# RESOURCES

## The Cunningham Architecture Library

Visit the Architecture Library for leisure reading, group work, studying, and help finding information for your projects. Our collection is a valuable asset just for you. Library hours:

Monday-Friday	8am-8pm
Saturday	Closed
Sunday	4pm-8pm



## The Architecture 'Shops'

We have *three* shops available for student use - the Fabrication Shop, the Laser Shop, and the Binding Shop. Use is restricted to students in Professional School, and to those who have received training in the equipment. If you have questions, talk to Daniel Ochoa, our Shop Lab Supervisor.

◀ Daniel and a shop TA using the CNC router

## The Print Shop

One side is available 24/7 for free prints. The other side is run by staff for limited hours each week to provide higher quality prints. PDFs can be submitted via our School of Architecture website, and your account will be automatically be charged. Please allow enough time for the staff to accommodate your needs.





# STUDY ABROAD

The School of Architecture is committed to preparing its graduates for the professional opportunities presented by the expanding global economy. As part of this preparation, the School requires architecture majors to participate in a study-abroad course of at least four weeks. Students study, in an organized and disciplined fashion, major examples of modern and historic architecture, including urban issues in a range of places outside the United States. Analytic and artistic sketching skills, descriptive writing, and other forms of observational research and record-keeping are important in these courses of study.

Alternatively, a student of architecture may elect to spend a semester abroad, which would meet the conditions of the degree plan as well. At least a year before a student plans to study a semester abroad, foreign university program and coursework must be coordinated with the School of Architecture advisor and the OSU Study Abroad Office to ensure that courses taken abroad meet the requirements of the degree plan.

- ◀ (top) Sketching in Rome with Professor Stivers
- ◀ (bottom) Group at Gyeongbokgung Palace in Seoul
- ▼ Study Abroad group in Florence



# NEW VOCABULARY

As a student in our school, you will likely encounter some unfamiliar terms that are part of an architecture and architectural engineering education here at the School of Architecture. Here's a selection of some of the most frequently used words:

## *Studio*

is where you are going to live while a student in the School of Architecture. Check out a desk and move in.

## *Professional School*

is what we call the upper three years of our curricula. It's kind of a big deal.

## *Crit*

as in getting a "crit." means speaking with your professor about your design project and receiving constructive criticism.

## *Charrette*

as in being "on charrette." means your deadline is fast approaching and you are working every minute to meet that deadline.

## *Pin-Up*

is a review of your work in which you pin your drawings up on the wall to present to a panel of reviewers and receive feedback.

## *Juries*

are formal reviews of your finished work. Guests will be invited to review the work and comment on it, and you will dress better than normal.

## *Beaux Arts Ball*

is an annual themed costume party for the entire school; it is lots of fun!

### *Pig Roast*

is an annual social event at the School of Architecture. It is a decades-long tradition and a good time each spring.

### *ARCH Centre*

is the heart of our school in the center on the first floor of the architecture building. Get coffee, eat pizza, and check out an exhibit here.

### *ARE*

(*Architect's Registration Exam*) is a test that is comprised of several tests; after the successful completion of the ARE and receiving your license, you can call yourself an architect.

### *AXP*

(*Architectural Experience Program*) provides the framework for architecture graduates to document internship experience as part of the licensure process.

### *NAAB*

(*National Architecture Accrediting Board*) is the national body that accredits architecture degrees.

### *NCARB*

(*National Council of Architectural Registration Boards*) is the governing body that regulates the licensure examination process.

### *ABET*

(*Accreditation Board for Engineering and Technology*) is the national body that accredits AE degrees.

### *FE*

(*Fundamentals of Engineering exam*) is an exam which should be taken before AE students graduate, typically in their fourth or fifth year of study.

### *PE / SE*

(*Professional Engineer or Structural Engineer exam*) is the exam which is taken after several years of working in the AE profession under the guidance of a licensed engineer.

### *Internship*

is when you work for a professional firm under the guidance of licensed architects or engineers. You must always be paid in an internship!





aphi

TIGAYTAY

RTIC

LUCKENBACK  
TEXAS

OSU  
ALUMNI  
STUDENT MEMBER

Milk Man  
Custom

LIFEPROOF

CowboyTees

YETI

TOSHIBA

INTO THE STREETS  
ESTABLISHED  
1987

# RHINO TIPS

Rhino is the software that students typically use for 3D modeling their projects. Rhino is introduced in Design Studio I and used extensively in subsequent studios. As students become proficient with Rhino, some learn to use advanced Rhino plugins such as Grasshopper and Python. The following are some of the most commonly used commands:

## Customization

Aliases: (Under Tools > Options)  
Allows for personal hotkey customization

Keyboard: (Under Tools > Options)  
Allows for one button command(s) customization

Mouse: (Under Tools > Options) Can change the middle mouse button command, among others

## 2-D Commands

Split: Divides surfaces

Make2D: Get linework

UnrollSrf: Turns volumetric geometries into two dimensions

## 3-D Commands

ExtrudeCrv / Extrude Srf: Two-dimensional geometry in three dimensions

Cap: Closes an open curve or surface

Pipe: Turns a curve into a cylinder

MoveFace: Manipulates edge of a geometry (will turn it into a polysurface)

ExtractWireframe: Redraws lost geometry

## Manipulation Commands

Gumball: Gumball transformations (Scale, Move, Rotate) can be used for free transform and numerical transformations

CPlanes: Used for changing primary drawing surface

ProjectToCPlane: manipulate 3D polylines to 2D

DupBorder: Recall polyline data

## Workflow Commands

Hide / Show: Quickly remove and reveal geometry, rather than turning the layer off

LayerStateManager: Quickly move between layers being on or off

Sel / SelectionFilter: quick selections

Tab: Locks to preferred axis

Ctrl + Shift: Select a single face

F6: (Show Camera) Places the camera to set a more deliberate view

Named Views: (Under View > Set View) Quickly restore set viewports

Fullscreen: Visually removes toolbars

ClippingPlane: Quickly create a section view

# ADOBE TIPS

Adobe has three different programs primarily used for preparing graphics and presentations, which are introduced in Design Studio I and used extensively in subsequent studios. The following are some of the most commonly used commands:

## Common

These commands can be used across Adobe's software offerings.

Copy: Ctrl + C

Paste: Ctrl + V

Paste in Place: Ctrl + Alt + Shift + V

Undo Last Action: Ctrl + Z

Zoom In: Ctrl + + (plus)

Zoom Out: Ctrl + - (hyphen)

Zoom: Alt + Scroll

Zoom w/scroll wheel: Edit > Preferences > Tools > toggle Zoom with Scroll Wheel

## Photoshop

Used for editing raster images and photographs.

Brush Tool: B

Eraser Tool: E

Fill: Shift + F5

Fit in View: Ctrl + 0 (zero)

Type Tool: T

Magic Wand Tool: W

Move Tool: V

Rectangular Marquee Tool: M

## Indesign

Used to combine text and images for creating booklets, posters, etc.

Selection Tool: V or ESC

Direct Selection Tool: A

Preview Mode: W

Presentation Mode: Shift + W

Text Frame Options: Ctrl + B

Scale proportionally both image and image frame: Ctrl + Shift

In Links palette, double-click Warning Triangle to update link

## Illustrator

Used for editing vector images and line drawings.

Selection Tool: V or ESC

Direct Selection Tool: A

Ellipse: L (Hold Shift for Circle)

Line: \

Pen: P

Rectangle: M

## Other Adobe software:

Lightroom is used for organizing and editing images across any device and Premiere is used for more extensive video editing

# EXCEL TIPS

Microsoft Excel can be used for a variety of purposes in architecture and engineering. At its simplest level, it can perform basic arithmetic equations and create tables. It can also be used to do complicated matrix equations. Its most common utilization is probably the creation of spreadsheets to input several values, or parameters, and program several equations to be performed within the spreadsheet to output a result. This allows students to adjust several parametric factors for equation input and quickly see the outcome. Here are a few tips/tricks for using Excel:

Color code your inputs and outputs so the table is easy to follow.

Use Excel as your calculator: Type "=" and the formula you want Excel to solve:

Ex: `"=60*33.4"`

Use IF THEN Excel formulas to make everything easier:

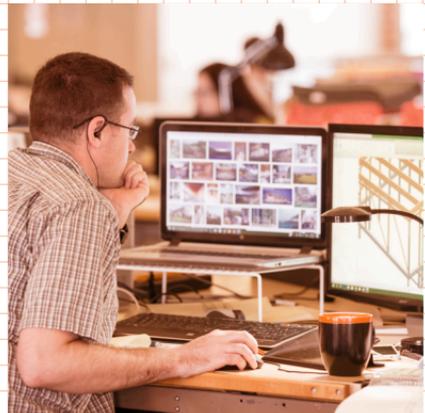
Ex: `=if(cell 1 > cell 2, then "okay")`

Use dollar signs (\$) to keep one cell's formula the same regardless of where it moves. Hot key for this is F4

Use the Min / Max command to find worst cases from RISA output.

Ex: *Copy output data from RISA results and paste in Excel. Type "=max" and then highlight all data to find largest value*

Use Shift + Click and Ctrl + Click to highlight more than one box of data in most programs.



# RISA TIPS

RISA is a structural analysis program, used to track forces and design members such as beams and columns in a virtual 3D environment. Architectural engineering students begin working with RISA within the curriculum in Professional School. The following are some general rules and tips for creating an analytical model in RISA:

## 1. Establish model goals

A common pitfall is the creation of analytical models without a clear goal in mind. Additionally, most analytical models can't be created in a way to solve all issues. So, the engineers must establish goals ahead of time for what a model is used for. Some common examples are:

- Design of gravity-only members
- Assessment of member deflection
- Extraction of connection forces

## 2. Investigate solver errors

Often an analytical model will tell you when it's unstable. In addition to this warning, it often gives you an indication as to which nodes are unstable. A few tips:

- In SAP, make sure you are using "standard solver" (not "advanced") in order to return this information
- In any program, if there are general instabilities the program may return false clues by spitting back errors on random nodes. If you investigate the nodes and find nothing wrong, you probably have a general instability.
- Look at which degree of freedom the warning message is in. This could be another clue.

### 3. Check fixity and boundary conditions

Commonly we consider joints to be “fixed” or “pinned” – the software treats them the same way. This effects how the model behaves and where the forces go. As the design progresses, we might need to reconsider the fixity in members if connection conditions change the fixity.

### 4. Check the fundamental period of a building

The Fundamental Period,  $T$ , is the amount of time, in seconds, the structure will take to undergo one complete cycle of motion if it is laterally displaced and released. The analysis model will tell you what ‘ $T$ ’ it is calculating for your 3D modeled building

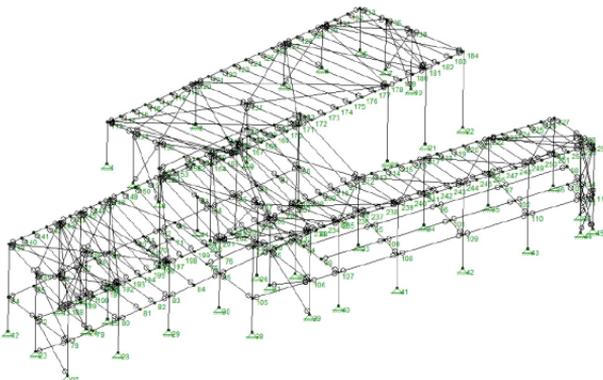
Rule of thumb: 1 second per 10 stories of a building; for example: a 30-story building will have around a 3-second period

### 5. Check the deflection under each load case

A quick graphic display of deflection should show the structure deflected a specific direction. This ensures you’ve applied your loads in the right direction. For example, you’ll see a model “sag” under gravity load because gravity is always “down”.

### 6. Check the reactions under each load case

You can perform a hand calculation for what the total load applied for each case is. This should match the sum of the load case reactions.



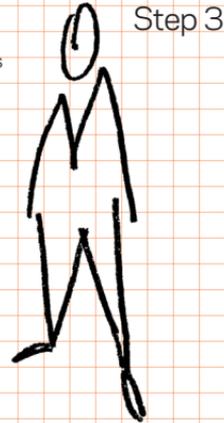
# SKETCHES & DOODLES



Draw an M for the torso



Draw a W for the legs



Add the head and feet!

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# QUICK REFERENCE

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For mail deliveries, use:  
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Stillwater, OK 74078

## Inclement Weather & Campus Safety?

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This Student Handbook was developed by the faculty and students of the School of Architecture at the Oklahoma State University School of Architecture with student input from the Architecture Leadership Council.

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School of Architecture (v08.11.20)



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