

PORTLAND STATE UNIVERSITY  
School of Fine and Performing Arts

DEPARTMENT OF ARCHITECTURE  
*Spring 2010*

**ARCH 482**  
**Architectural Design Studio 6**

Professor: Corey Griffin  
Meets: MWF 1300-1700  
Location: SH 3<sup>rd</sup> floor Studio  
Contact: cgriffin@pdx.edu

**Course Description**

Studio investigations of architectural designs based on supporting human activities, structure, and theory. Continued study of design process and methods encompassing concepts of architecture, landscape architecture, and interior design. Includes individual criticism, lectures, and seminars.

**Course Theme**

Urban Ecology

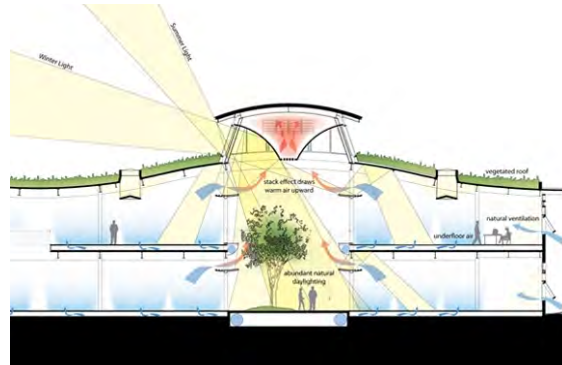
**Course Objectives**

- To address the making of architecture as the setting for the engagement between the human body and the natural world, introduced within a thematic emphasis on urban ecology.
- To explore the issue of orientation through responses and connections to natural systems and the larger urban environment.
- To explore the integration and appropriateness of building systems relative to larger architectural goals.

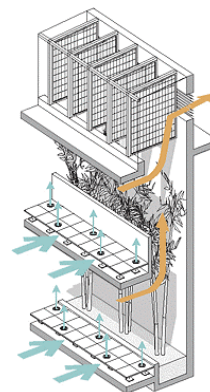
**NAAB Performance Criteria**

- Understanding:
- 5. Formal Ordering Systems
  - 12. Human Behavior
  - 15. Sustainable Design
  - 18. Structural Systems
  - 19. Environmental Systems
  - 20. Life Safety
  - 21. Building Envelope Systems

- Ability:
- 1. Speaking and Writing Skills
  - 2. Critical Thinking Skills
  - 3. Graphic Skills
  - 4. Research Skills
  - 11. Use of Precedents
  - 14. Accessibility
  - 17. Building Systems Integration



William McDonough + Partners, 901 Cherry Offices



Miller Hull Partnership



farmphilly.com



Mithun, Center for Urban Agriculture

**inspiration**

"Over thousands of generations the mind evolved within a ripening culture, creating itself out of symbols and tools, and genetic advantage accrued from planned modifications of the environment. The unique operations of the brain are the result of natural selection operating through the filter of culture. They have suspended us between the two antipodal ideals of nature and machine, forest and city, the natural and the artificial, relentlessly seeking, in the words of the geographer Yi-Fu Tuan, an equilibrium not of this world."

Edward O. Wilson, 1984

"If one accepts the view of the building as a combination of a number of very different systems, each with their own elements and structure, forming configurations in space that join and separate, support or complement each other, and sometimes have quite different life spans and 'modes of existence,' then one accepts a sophisticated model that poses very intriguing design questions."

N. John Habraken, 1980

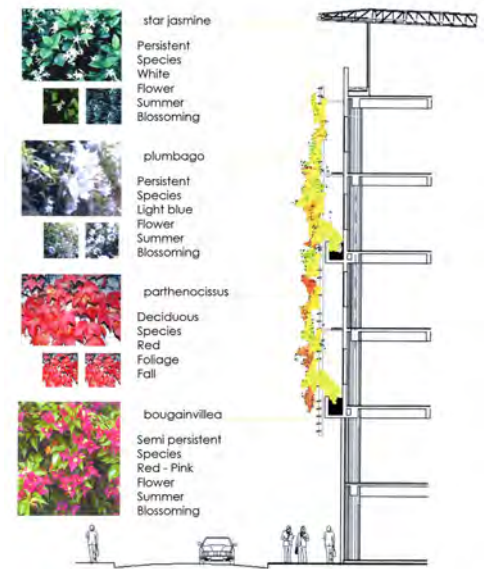
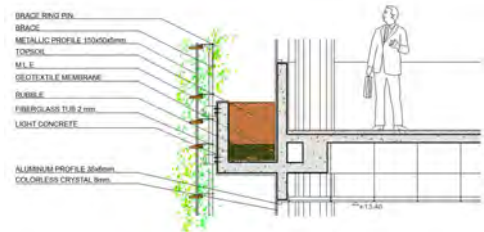
**vehicle**

center for urban ecology

**emphasis**

This studio assumes that you have studied normative construction methods, structures and environmental controls. To varying extents, you have been asked in previous studio projects to incorporate what you've learned in these subject courses into your design work. However, if construction, structure and environmental controls are not considered until well into the design process, either the design concept or the competency of the building itself will be compromised. Furthermore, you must address how your building will be built early and throughout the design process in order to create whole and truly sustainable built environments.

The word system itself has various interpretations within the education and practice of architecture. In practice, systems often refer to the organization and distribution of electrical wiring, mechanical equipment and plumbing with each associated with a specialized engineer. However, this definition of system as physical objects delivering services neglects other means to achieve the goals of these systems: to provide light, thermal comfort and access. Visual and thermal comfort are related to the enclosure, structure, plan and orientation as much as ducts, dampers, fixtures and wires. Consequently, this course focuses on systems as a way thinking about how to create *environments* as well as how to integrate the physical manifestations of these systems.



This subject is often taught by looking at case studies where the systems, however they are defined, are neatly separated and exposed. This facilitates dissecting or constructing a building one system at a time, but also biases the case studies toward "high-tech" architecture and larger scale buildings. While some of you may work for firms that deal with larger scale projects, it is likely that you will be involved in the design of housing at some point during your career, single-family detached or otherwise. While the systems involved in housing are different than those used in an office building, designing housing from a systems perspective has numerous advantages. It is also clear that an architect may not want to design a building with all the systems and services exposed for any number of reasons, and again, systems thinking should not be abandoned just because the systems won't be visible to the users.

I believe strongly that we must first discuss how we can see and construct the built environment before a meaningful discussion of the systems themselves can take place. While there a number of ways of seeing, the course will focus on three specific *lenses*, dimension, access and assembly. These will give us a common language to compare our case studies to one another and apply to your own design work. Then, we will move on to the *systems*, including structure, enclosure, thermal comfort, and lighting. For this course, you will be asked to find a well-documented case study that is similar in scope and program to your spring quarter studio project.

However, architecture is not just an integrated set of building systems. To that end, you will be asked in this studio to consider the connections between the built and natural environment. These connections will be addressed in two interrelated explorations. First, we will study how architecture impacts and can improve the ecology of urban environments and second, we will examine how to make greater connections between the built and natural environment to improve the quality and habitability of the spaces we design for occupants.

**project**

You are asked to design a roughly 60,000 square foot mixed-use office building similar to the Jean Vollum Natural Capital Center (Ecotrust building) in the Pearl District, the White Stag Building in Old Town or the Oregon Sustainability Center currently in development. This building will house office and meeting space for private, government and academic tenants that all focus on issues of urban ecology. The ground floor will include retail space. The building will also serve as an experiment for one or more urban ecology strategies listed later in this handout and should be fully integrated into the design, form and intent of your project.

**overview**

This studio will cover three major topics:

*assembly*

the relationship between and the integration of building systems, construction, form and use

*biophilia*

improving occupant comfort, productivity and health through connections between the built and natural environment

*sustainability*

how a single building can contribute to and improve urban ecological systems

**site**

south corner of SW Pine Street and SW Naito Parkway in downtown Portland, OR  
approximately 100ft by 150ft



**tenants**

David Evans and Associates (approx. 10,000 sq. ft.), private consulting firm  
<http://www.deainc.com/>

Oregon Department of Environmental Quality (approx. 10,000 sq. ft.), government agency  
[http://www.oregon.gov/DEQ/about\\_us.shtml](http://www.oregon.gov/DEQ/about_us.shtml)

Oregon Institute for Culture and Ecology (approx. 5,000 sq. ft.), non-profit research institute  
<http://www.ifcae.org/>

Center for Urban Ecology, Portland State University (approx. 10,000 sq. ft.), academic  
A new interdisciplinary center that brings together faculty from agriculture, geography, environmental science and management, mechanical engineering, biology, chemistry, urban studies and architecture. Half of this space will be faculty offices, a small meeting space and a classroom while the other half will be a "workshop" dedicated to experiments being conducted in/with the building.

Retail space (approx. 5,000 sq. ft.), one large meeting space (approx. 5,000 sq. ft.)

**text**

*Materials, Structures, and Standards: All the Details Architects Need to Know But Can Never Find*  
by Julia McMorrough, Rockport Publishers, 2006  
\$30.00 at Powells  
\$19.80 on Amazon.com

**media**

The Center for Urban Agriculture, Mithun (video)  
[http://mithun.com/news/article/video\\_center\\_urban\\_agriculture\\_remix/](http://mithun.com/news/article/video_center_urban_agriculture_remix/)

farm philly (blog)  
<http://farmphilly.com/>

Talk of the Nation: Urban Ecology (NPR audio)  
<http://www.npr.org/templates/story/story.php?storyId=1312622>

The Social, Economic and Environmental Benefit of Trees in Cities (audio lecture)  
Kathleen L. Wolf, Research Social Scientist, College of Forest Resources, University of Washington  
<http://www.pdxcityclub.org/content/urban-ecology/>

- case studies** Genzyme Building | Behnisch Architects and Behnisch Architekten | Cambridge, MA  
[http://images.businessweek.com/ss/06/12/1201\\_genzyme/source/1.htm](http://images.businessweek.com/ss/06/12/1201_genzyme/source/1.htm)
- Landesgirokasse Am Bollwerk | Behnisch Architekten | Stuttgart, Germany  
<http://www.behnisch.com/>
- Norddeutsche Landesbank Am Friedrichswall | Behnisch Architekten | Hannover, Germany  
<http://archrecord.construction.com/projects/portfolio/archives/0302HQ.asp>
- Austin Resource Center for the Homeless | LZT Architects | Austin, TX  
<http://www.aiatopten.org/hpb/overview.cfm?ProjectID=470>
- Prisma Nurnberg | Joachim Eble Architektur | Nuremberg, Germany  
<http://www.greenbuilding.ca/gbc98cnf/studies/Germany/st-d-th.htm>  
[http://www.eble-architektur.de/index\\_deu.html](http://www.eble-architektur.de/index_deu.html)
- GSW Headquarters | Sauerbruch Hutton | Berlin, Germany  
<http://www.mimoo.eu/projects/Germany/Berlin/GSW%20Headquarters>  
<http://www.sauerbruchhutton.de/>
- Seattle Justice Center | NBBJ | Seattle, WA  
<http://eere.buildinggreen.com/process.cfm?ProjectID=225>
- EpiCenter, Artists for Humanity | Arrowstreet, Inc. | Boston, MA  
<http://www.aiatopten.org/hpb/overview.cfm?ProjectID=736>
- Brewery Block 4 | GBD Architects | Portland, OR  
<http://eere.buildinggreen.com/overview.cfm?ProjectID=224>
- 901 Cherry Office – Gap, Inc. Headquarters | William McDonough + Partners | San Bruno, CA  
[http://www.mcdonoughpartners.com/projects/view/901\\_cherry\\_offices](http://www.mcdonoughpartners.com/projects/view/901_cherry_offices)
- Tempe Transportation Center | Architekton and Otak | Tempe, AZ  
[http://archrecord.construction.com/projects/bts/archives/transportation/10\\_Tempe\\_Transportation\\_Center/default.asp](http://archrecord.construction.com/projects/bts/archives/transportation/10_Tempe_Transportation_Center/default.asp)  
<http://www.tempe.gov/greenprograms/transitcenter.htm>
- PRISMA Building | Auer + Weber + Associates | Frankfurt, Germany  
<http://www.auer-weber.de/eng/projekte/index.htm>
- Sidwell Friends Middle School | KieranTimberlake Associates | Washington, DC  
<http://www.aiatopten.org/hpb/overview.cfm?ProjectID=775>
- Institute for Forestry and Nature Research (ALTERRA) | Behnisch Architekten | Wageningen, The Netherlands  
<http://www.ifa.de/en/exhibitions/exhibitions-abroad/architecture/ecologydesignsynergy/material/alterra/>
- UT School of Nursing and Student Center | BNIM Architects + Lake/Flato Architects | Houston, TX  
<http://www.aiatopten.org/hpb/overview.cfm?ProjectID=444>
- Corporate Headquarter der Solon SE | Schulte-Frohlinde Architekten | Berlin, Germany  
<http://www.schulte-frohlinde.com/neubau.html>  
<http://www.arcguide.de/arcguide/haus-und-hof/Corporate-Headquarter-der-Solon-SE.php>
- Willamette River Water Treatment Plant | Miller Hull Partnership | Wilsonville, OR  
<http://www.millerhull.com/htm/nonresidential/wwtp.htm>

Pierce County Environmental Services | Miller Hull Partnership | Seattle, WA  
<http://www.aiatopten.org/hpb/overview.cfm?ProjectID=162>

Water Pollution Control Laboratory | Miller Hull Partnership | Portland, OR  
<http://www.millerhull.com/htm/nonresidential/WaterP-Lab.htm>

University of Guelph – Humber Building | Diamond + Schmitt Architects | Toronto, Canada  
<http://www.uoguelph.ca/atguelph/04-11-10/featuresair.shtml>  
<http://www.dsai.ca/>

Cambridge City Hall | Diamond + Schmitt Architects | Cambridge, Canada  
<http://www.dsai.ca/>

Synergy at Docks Green | Busby Perkins+Will Architects | Victoria, BC  
<http://www.aiatopten.org/hpb/overview.cfm?ProjectID=1371>

Macallen Building Condominiums | Burt Hill with Office dA | Boston, MA  
<http://www.aiatopten.org/hpb/overview.cfm?ProjectID=1050>

Heifer International Headquarters | Polk Stanley Rowland Curzon Porter Architects | Little Rock, AK  
<http://eere.buildinggreen.com/process.cfm?ProjectID=781>

Consortio-Vida Office Building | Enrique Browne and Borja Huidobro | Santiago, Chile  
[http://www.e-architect.co.uk/chile/consorcio\\_santiago\\_building.htm](http://www.e-architect.co.uk/chile/consorcio_santiago_building.htm)

Bumper Crop | Miller Hull Partnership | speculative project  
<http://www.millerhull.com/htm/nonresidential/bumpercrop.htm>

Eastgate Office Building | Mick Pearce with Arup Associates | Harare, Zimbabwe  
<http://www.inhabitat.com/2007/12/10/building-modelled-on-termites-eastgate-centre-in-zimbabwe/>

The Terry Thomas | Weber Thompson | Seattle, WA  
<http://www.aiatopten.org/hpb/overview.cfm?ProjectID=1292>  
<http://www.weberthompson.com/terry-thomas-commercial.html>

**urban ecology strategies**

*water quality*  
 rainwater collection  
 greywater reuse  
 living machine  
 bioswales  
 biochar

*plants*  
 green wall  
 extensive green roof  
 intensive green roof  
 wildlife habitat

*food production*  
 soil-based farming  
 hydroponic farming  
 aeroponic farming  
 vertical farming

**biophilia strategies**

use of diffuse and dynamic daylight  
 frequent opportunities for spontaneous contact with nature  
 use of local, natural materials  
 visual/material connections between interior and exterior surfaces  
 passive natural ventilation  
 direct physical connection to exterior from interior spaces  
 direct visual access to landscape from interior spaces  
 access to open water  
 complexity and order  
 moments of enticement and even peril  
 prospect and refuge

**requirements** Expectations for your performance and conduct in this course are clearly articulated in the Student Handbook provided by the Department of Architecture. Please review this document thoroughly, and note the grading and attendance standards summarized on the last page of this syllabus. In addition, requirements for this class will include class meetings and assignments that will be held off-campus. Students/participants will be expected to provide their own method of transportation to the off-campus location(s). You will be required to take one class and attend one performance as a part of this course outside of studio hours. You are responsible for the cost of these activities.

**studio culture** In any setting we find ourselves in the Department of Architecture, including the Shattuck studios, it is expected that a professional environment for the study of architecture will be maintained. Genuine respect for the needs of students and faculty to promote a supportive studio for the individual and the collective endeavor is paramount during and outside regular studio hours. Discovery, analysis, and insight require a calm and reflective opportunity to work.

Careful planning guided by the course schedule and steady progress in assignments, right from the beginning, should also greatly enable a reasonable distribution of work hours in and out of the studio. These practices and work habits can be and often are early groundwork for a more balanced and productive engagement of creative practice throughout one's career. A mark of such a process is the absence of having to work late into the night or all night at any time. Further the use of artificial stimulants ultimately takes a toll in its negative effects, sometimes with serious consequences. Students are expected to assist each other in cultivating a balanced, planned approach to their workload in order to foster sustainable and productive creative lives in and beyond the studio.

In addition the following reminders will greatly assist all of us to improve studio culture for everyone:

- Arrive promptly at 1pm for studio
- Be prepared for class with completed assignments and show demonstrable (new drawings, models, etc) progress each class meeting
- Conduct yourself in a respectful manner toward other students and the instructor in a way that does not detract from the learning experience
- Websites **not directly related** to the studio project must be kept off monitors during studio hours
- Eating is not allowed during studio hours (except for students with a documented medical need), so make sure to take time for lunch before studio.
- Students are responsible for upholding the Department of Architecture policies as outlined in the Student Handbook
- Cell phones must be turned off inside the studio during studio hours
- Earphones may not be used when class is in session
- Trips to obtain supplies and library visits should normally be scheduled outside studio hours
- The Shattuck studio must be regarded as one's primary work place when studio is in session, and perhaps afterward. As a result all hardware, software, graphic materials, and drawings and models must be present and available for review each studio session

**late work** No late work will be accepted with the exception of extreme circumstances (documented medical or personal emergency). Consequently, if you choose to miss class, it is your responsibility to find out what assignments you will miss and turn them in before they are due.

**H1N1 Flu** Please refer to the policy for absences and information about the H1N1 flu at the Student Health and Counseling website at:

<http://www.pdx.edu/shac/>

You are encouraged to stay at home if you feel ill, and you will not be penalized for doing so in this course. Assignments that cannot be easily made up or are not turned in before solutions are posted will be dropped from your final grade. Consequently, missed work will not hurt or help your final grade. You are encouraged to complete missed homework assignments in order to not fall behind your peers and to help you study for exams.

**extra credit** There is no extra credit offered in this course.

**community standards** The University community is dedicated to the advancement of knowledge and the development of integrity. In order to thrive and excel, this community must preserve the freedom of thought and expression of all its members. A culture of respect that honors the rights, safety, dignity, and worth of every individual is essential to preserve such freedom. All participants in this course are expected to conduct themselves in a manner that respects the rights and well-being of others and conforms to the university's standards for academic integrity described in the *PSU Student Code of Conduct*:

<http://www.pdx.edu/dos/conductcode>

**disabled students** If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with Corey before the end of the first week of the term. You should bring a copy of a letter from the PSU Disability Resource Center that verifies your disability to our meeting so that we can make arrangements to accommodate your needs.

**e-mail and office hours** My office hours will be held in my office, SH 217. An appointment can be scheduled with the front desk in the Department of Architecture office. I recommend email for:

- Questions about assignments that can be answered with a simple one word or one phrase response.
- Reporting absences or requesting extensions for due dates. (Extensions are only granted for excused absences.)
- Suggestions about how to improve the course. Your feedback will help us to become more aware of your interests and perceptions, tailor presentations and assignments to your needs and furnish me with information that will assist in future course planning.

I recommend office hours visits for questions about course content that are best addressed through discussion. Office hours are also the best way to address questions about assignment expectations and grades. If you have a conflict and cannot meet during office hours, please contact me by email to schedule a mutually convenient time.

**schedule v.1** This schedule is subject to change over the term. Updated schedules will be posted on Blackboard.

**week 1 – biophilia, urban ecology, urban intervention**

m 29 mar biophilia lecture, course logistics and studio arrangement  
 w 31 mar urban ecology case studies due, *dimension lecture*  
 f 02 apr dimensioning exercise due, FRIDAYS@4

**week 2 – site documentation, program definition**

m 05 apr urban intervention due, *access lecture*  
 w 07 apr case-study presentations, *assembly lecture*  
 f 09 apr site documentation due, three schemes charrette, FRIDAYS@4

**week 3 – three schemes**

m 12 apr site model due, desk crits, *structure lecture*  
 w 14 apr desk crits, *enclosure lecture*  
 f 16 apr three schemes pin-up, FRIDAYS@4

**week 4 – access, structure, assembly**

m 19 apr access due, *daylighting lecture*  
 w 21 apr assembly due, *thermal comfort lecture*  
 f 23 apr structure due, FRIDAYS@4

**week 5 – mid-review**

m 26 apr work day, desk crits  
 w 28 apr mid-review  
 f 30 apr one scheme desk crits, FRIDAYS@4

**week 6 – daylighting, urban edge**

m 03 may shading study due  
 w 05 may body scale and daylighting due  
 f 07 may urban edge due, FRIDAYS@4

**week 7 – thermal comfort, enclosure**

m 10 may office layouts due  
 w 12 may wall section due  
 f 14 may thermal section due, FRIDAYS@4

**week 8 – urban and ecological connections**

m 17 may site connections due  
 w 19 may exterior perspectives due  
 f 21 may interior perspectives due, FRIDAYS@4

**week 9 – production**

m 24 may mock graphics due  
 w 26 may mock layout/presentation due  
 f 28 may work day

**week 10 – review week**

su	30 may	boards due 5pm
m	31 may	<b>no class – memorial day</b>
w	02 jun	
th	03 jun	models due 5pm
f	04 jun	final review (tentative)

**week 11 – finals weeks**

m	07 jun	clean-up and archiving
w	09 jun	exit interviews
f	11 jun	exit interviews

# DEPARTMENT OF ARCHITECTURE

## COURSE POLICIES

### Attendance

Absence from class will be noted and will negatively affect your grade unless prior notice is given to the professor and the reason is legitimate. If you miss more than 3 consecutive sessions without acceptable reason you will receive an 'X' for the class. Requirements for this class will include class meetings, assignments and/or performances that will be held off-campus. Students/participants will provide his/her own method of transportation to the off-campus location.

### Department Grading Standards

All assignments issued by the professor are gradable and will be taken into account in making a final grade. Submission of any assignment past the due time and date will incur a penalty of one grade loss per day late. Grading will follow course specific grading criteria described in each course syllabus, in full accordance with the Department of Architecture Grading Standards as presented below.

- A Represents comprehensive excellence and a quality that is exemplary. Not only does the work fulfill all requirements in an excellent and professional manner, but it goes beyond the given requirements aiming at standards higher than requested. The student is an active, engaged participant in all class activities. Intellectual progress and development have been demonstrated by the timely preparation of thoughtful work by the beginning of class on a regular basis.
- B Represents work which can be distinguished as being of truly 'good' quality. This work is of a quality that has been instructive to the rest of the class. The work is free of significant flaws and is recognizable as coherent architecture. The student is an active, engaged participant in all class activities. Intellectual progress and development has been demonstrated by the timely preparation of work by the beginning of class on a regular basis.
- C Represents satisfactory and average performance. The work is free of major design flaws and is recognizable as coherent architecture. Intellectual progress and development has been demonstrated by the timely preparation of work by the beginning of class on a regular basis. The student and instructor can take 'satisfaction' in the average resolution of the design exercise.
- D Represents 'passable' work which fulfills requirements, is completed on time, and represents a minimal response to the design exercise. Overall, the quality of work is inferior and undistinguished.
- F Represents substandard work that is not passable. Work has not fulfilled requirements, or has not been completed on time, or it is not an appropriate response to the design exercise.
- I An 'Incomplete' can only be given in exceptional cases where there is a serious excusable reason for not completing course requirements. The quality of work in the course up to that point must have been C level or above. Timely completion of the course requirements must be agreed in a University mandated written contract between student and instructor.
- X Represents 'no basis for grade' and generally signifies lack of, or insufficient, attendance.

A grade of Incomplete (I) cannot be carried past the next immediate term of studio classes. If the grade of (I) has not been removed by completion of work, the student will not be permitted to enroll in the next studio class in sequence since the prerequisite will not have been fulfilled.

Grades of less than C- will not count towards fulfilling Major requirements for undergraduates. Two consecutive grades of C- in any studio sequence will prohibit enrollment in the next studio.

Grades of B- or less do not meet acceptable standards for graduates in the Master's program. Please see graduate studies grading criteria in the PSU Bulletin for a full explanation.

**PLEASE REFER TO THE DEPARTMENT OF ARCHITECTURE STUDENT HANDBOOK FOR FURTHER INFORMATION**