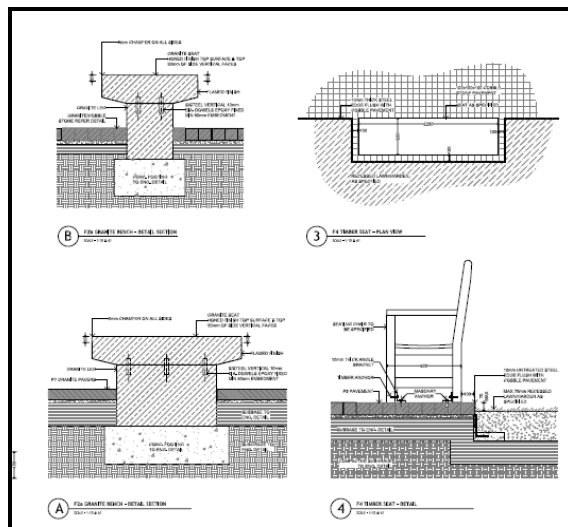
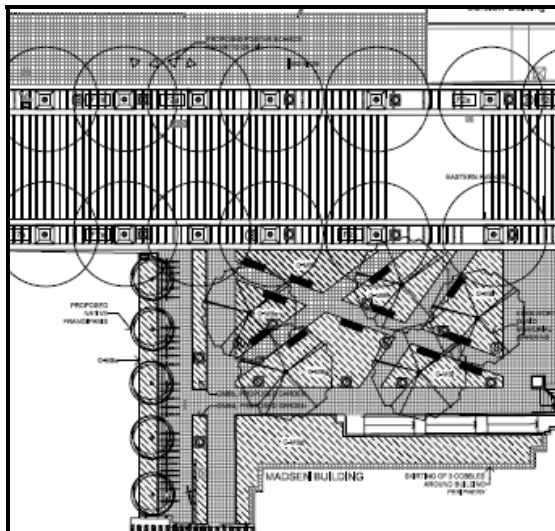


Landscape Technology 3 (LACH3330) - Design and Implementation

University of Western Australia
Semester 1, 2007

Unit Coordinator: Tinka Sack
FALVA – Landscape Architecture



Course Overview:

This unit investigates building technologies, with a special emphasis on construction detailing, as it applies to the profession of landscape architecture. It is intended to supplement and inform studio investigations with the hands-on construction of site details and the use of drawing as a means of design resolution and communication. Lectures will cover a wide range of materials used in the creation of contemporary landscapes and will include an overview of basic engineering in the design of detailed landscape elements. Additionally students are asked to develop material sources and detail specifications as a resource for use in their final design studios. Students will continue to develop their computer skills in the design and drafting of their articulated site details.

Credit: 6 points

Prerequisites/Unit Requirements: LACH2230 -Landscape Technology 2. Students will continue to build upon their previous computer skills, particularly in three-dimensional visualization and digital drafting.

Outcomes: Students gain the ability to locate and specify appropriate landscape building materials; communicate through technical drawings an understanding of how landscapes are constructed; and continue to develop basic computer skills required to complete construction drawings. They gain the ability to use drawings as a means of design resolution and communication and an awareness of and familiarity with the concepts, methods, mechanisms and settings of landscape constructions.

Content: The unit is comprised of a series of lectures and workshops. Students are also asked to develop material sources and detail specifications as a resource for use in their final design studios. Students continue to develop their computer skills in the design and drafting of their articulated site details. Topics covered in the unit include drawing details; safety and liability; wall construction; concrete techniques; sustainable landscape; construction; small structures and site amenities; landscape restoration, use of water, detailing; connections; lighting; and assorted materials—metals, fabrics, glass, fibreglass, stone and plastics.

Course Times:

We will meet in Hugh Roberts Seminar Room at 9 am sharp on Tuesdays. Lecture will run 1-2 hours; following the lecture a 2-3 hour tutorial will be comprised of an assortment of activities including presentations, workshops, individual tutorials and a site visit. The location of our workshops will be announced in class. Please refer to the schedule below for details. The schedule is subject change once a site visit has been organised.

CONTACT DETAILS:

Email is an important means of communication therefore ALL students must activate their student email accounts and ensure that they check their account weekly. University staff are able to communicate ONLY through university student email accounts and have been advised not to respond by email to any other addresses. Feel free to contact me by phone or email.

Tinka Sack
Room 4.14
sackcat@cyllene.uwa.edu.au
6488 2789 telephone
6488 1082 fax

Office Hours: You can find me in my office or in FALVA most days other than Wednesdays. A weekly availability calendar will be posted on my door. To ensure an appointment please email or ring me.

PRELIMINARY SCHEDULE:

In order to facilitate learning, this schedule is subject to change. We will take advantage of local projects for site excursions they are available and appropriate. Students will be advised in advance of any changes.

WEEK	DATE	LECTURE 9-10:30 HR Seminar Room	Tutorial/Workshops 10:30 – 1:00 Location TBA	Items DUE
Week 1	February 27	Course Introduction Drawing Conventions Safety and Liability		
Week 2	March 6	Concrete!	Concrete Casting Workshop – bring materials.	Drawings of concrete modules 1 and 2.
Week 3	March 13	Site work Sub-consultants Sustainable Construction	Concrete Casting Workshop – bring materials.	Drawings of concrete modules 3 and 4.
Week 4	March 20	Walls	Concrete Casting Workshop – bring materials.	
Week 5	March 27	Paving and Surfaces	Presentation/Review of Concrete Panels	Final Concrete Modules Due
Week 6	April 3	Materials: Glass, Stone, Timber	Project Proposal Presentations	Project 2 Proposals Due
<i>Non-teaching Study Break</i>				
Week 7	April 17	Materials: Metals, Fabrics, Fibreglass, and Plastic	Review of Models Craig Burton, guest	Models due
Week 8	April 24	Connections and Junctions		
Week 9	May 1	Lighting	Review of Drawings	Submission of Working Drawings/ID progression, Group A
Week 10	May 8	Water: Irrigation	Potential Site Visit Details to be Announced.	Submission of Working Drawings/ID progression, Group B
Week 11	May 15	Water: Amenity	Review of drawings and construction	
Week 12	May 22	Small Structures Plant Materials	Completion of Illumination Device	
Week 13	May 29	No class meetings. FOLIO WEEK		
Monday	June 11			Final Illumination Device and/or Construction Drawings Due

EQUIPMENT AND COSTS

Through the generosity of the Cement and Concrete Association of Australia, 20 bags of cement have been provided for all students to use in their concrete panels and illumination device. The cement will be divided equally amongst the students. Additionally a limited amount of sand and gravel will also be provided. Students should be able to complete their panels and illumination device with the supplied concrete. Be aware that this material is limited and students depending on this material will need to size their work accordingly. In instances of error and experimentation, additional supplies cannot be guaranteed. Students will have to provide their own material for formwork, although timber off-cuts from the workshop are readily available. A simple standard timber formwork will cost from \$ 0 - \$10, depending on the size of the piece. Many students choose to supply their own concrete and aggregate in order to be able to investigate a greater variety of formwork solutions, concrete mixes and finishing techniques.

While it would be advantageous for all students to supply their own lighting equipment, several units are available for students to use in the testing and assessment of their illumination device. Students intending to use these test units should make themselves familiar with what is available prior to designing their illumination device. For students purchasing their own, a typical lighting unit will cost about \$20.

While there is no limit on the cost of the concrete panels or the illumination device, students are encouraged to investigate the use of readily available and recycled materials. Perth has a number of community tips where recycled building materials are available at very minimal prices. Students are encouraged to consider the use of readily available material that is often considered as waste or a bi-product: pallets, recycled glass, building rubble, off-cuts, etc. As in a built landscape, a limited budget should not impede an exceptional design.

ASSESSMENT

You must submit *all components* of each of the two projects in order to pass the course. Please refer to the Faculty policy for late work on the FALVA website.

All assignments are to be completed in an orderly and professional manner. Poorly drafted, illegible and disorderly assignments will be marked accordingly.

It is acknowledged that experimentation and failure is an integral component of this course. Submissions will be judged on their degree of complexity/difficulty in construction, evidence of considered construction and design, and evidence of follow through and completion. Experimentation of structure and materiality will also be considered positively in assessment. While help can be sought in constructing the device, the final outcome should be inherently the work of the student, not that of the workshop technicians nor family members. The assignments will be weighed as follows:

<u>Assignment</u>		<u>Components</u>	<u>Mark</u>
Concrete Modules:	30%	Module One	6%
		Module Two	6%
		Module Three	6%
		Module Four	6%
		Proposals	6%
Option A Illumination Device:	70%	Project Proposals	5%
		Model	5%
		Evidence of drawing and/or ID progression	5%
		Construction Drawing Set	25 %
		Built Illumination Device	30 %
Option B Public Domain Element	70%	Project Proposal and presentation	5%
		Model	5%
		Evidence of drawing and/or ID progression	10%
		Construction Drawing Set	50%

ORIGINAL WORK

Please submit a hard copy of your drawings along with a CD containing PDF files of your drawings. The drawings submitted will be used in marking and will therefore be marked and written upon. It is important to keep any originals. Your copies must be legible – this includes both texture and text. All work will be returned to students during class time. Work not picked up at this time will be held in Tinka's office until the end of the semester. It is the responsibility of the student to retrieve all work.

RESOURCES/MATERIALS JOURNAL

Students are encouraged to develop a materials and construction source book. This collection - of details, connections, drawings, materials, sources - will prove a useful resource in this course and the remainder of the student's studio career. This journal will not be marked.

LECTURES

A sheet of lecture notes will be made available after each lecture. These notes will include a list of projects and designers discussed during the lecture as well as a appropriate readings. The readings will be available in the Resource Room after the first week of class.

UNIVERSITY POLICIES

ALL STUDENTS SHOULD BE AWARE OF UNIVERSITY AND FALVA POLICIES.

Project One: Investigations in Concrete

This is an exploration of concrete: its mix, the building of formwork, reinforcement, surface manipulation and texture casting. You are asked to design and construct a minimum of four concrete modules. The modules are not required to be square nor rectilinear. The thickness and form of each module is of your own design, but should take into consideration the use of reinforcement as well as the potential for the penetration of light. In particular, consider how changing light qualities will affect your panels. It is recognised that there will be a progression of quality in your modules; in other words your final modules will be more skilfully done than your initial. Successful projects will reflect a considered design of the four modules/panels as a collective, with evidence of material and formwork experimentation.

This semester we are in an unusual situation: **we have no proper workshop!** We will need to be flexible and resourceful in order to complete our modules. At the same time, we need to be experimental yet thorough and considered in less than optimum working conditions. This is often the case when building landscapes. In order to compensate for our lack of workshop, we will be pouring the first three modules together in the courtyard outside of the resource room. The fourth module you are asked to form and pour on your own.

Module Proposals: Your modules will be accompanied by a series of drawings to be submitted in A3 format that convey formwork, intended texture, perforation and complexity of form in the design of your concrete modules. In order to facilitate a group discussion, you are also asked to submit these drawings as a PowerPoint or PDF presentation. This presentation is nothing elaborate, simply scan or import your drawings as a series of slides that we can project for discussion. You can submit a CD at the beginning of class OR email me one day prior to your presentation as per our schedule.

Concrete Modules: a series of at least four concrete modules which reflect a considered endeavour in the exploration of concrete. As stated above, the first three we will pour together. The final will be completed on your own.

Module One: Plasticity and/or texture. This module will focus on surface modulation.

Module Two: Perforation. Concrete is a fundamentally heavy, opaque materiality. How can you allow light to penetrate it?

Module Three: Complexity. The module should show considered thought in the complexity and three-dimensionality of the module. What is the complexity in the formwork required to achieve this? Can simple form work create complex elements?

Module Four: to be determined by designer.

Each module will be accompanied by an A3 drawing outlining your ideas for investigation. What are your anticipated outcomes? This is place for exploration and experimentation. What do you want to create? What are considerations to do this successfully?

Modules will be assessed for craft, exploration of ideas, a diligent investigative technique, use of colour, texture, surface deformation and complexity of formwork. While accidents and happenstance are important in learning new techniques, modules which do not convey a well thought-out approach will not be marked positively.

Module One	6%
Module Two	6%
Module Three	6%
Module Four	6%
Drawn Proposals	6%

Concrete Modules should be submitted to the Gold Room (small) or the fourth floor corridor (large). You are responsible for their removal after their assessment.

Because we do not know if the workshop will be available by the end of the semester, you have two options in the Project Two. One is an exercise in design, documentation and construction. The second is design and documentation. Students must indicate which option that they are choosing by the 3rd of April.

Project Two: OPTION A - Illumination Device

You are asked to design and build a three-dimensional device of illumination with at least one of its components constructed from concrete. A second material of your choice will also be used: timber, paper, metal, plastic, glass or stone. You will need to consider your light source (halogen, incandescent, fluorescent, sunlight) although it is suggested that you use a 12-volt system. You will also need to investigate qualities of illumination, transparency, reflectivity and opaqueness. Each illumination device must be sited on an undulating site of your choosing (there is no such thing as a flat site!). It is recommended that the site is one of a public nature. This is important as the projects should be used for submission to the CCAA Public Domain Awards in 2007. The judging criteria for the Public Domain Awards should be reflected in the design of the project. The CCAA criteria will be handed out during class as well as being available on their website.

Drawing is an inherent component of this investigation. Keep it simple. The more complex your ideas are the more complex the preparation and drawings need to be. This project will have four components. Please note that you will continue to revise your construction drawings as your illumination device develops. You will be assessed on each of these components:

1. Project Proposals
2. Illumination model.
3. Set of construction drawings.
4. The built illumination device.

1. Project Proposals and working drawings.

These drawings are to be submitted in an A3 format. They should reflect a complexity of thought and investigation into the design and construction of your built device. The drawings should be used to investigate materials, connections, and the potential illuminative qualities of your built work. They will be submitted for review twice during the semester; we will use these drawings to facilitate a dialogue on construction technique and design outcome. In order to facilitate a group discussion, you are also asked to submit these drawings as a PowerPoint presentation. This presentation is nothing elaborate, simply scan or import your drawings as a series of slides that we can project for discussion. You can submit a CD at the beginning of class OR email me your presentation by 5 pm the 2nd of April. Your presentation is the following day.

Thoroughness of these drawings is essential in order for the studio coordinator to be able to properly assess your progress as well as provide the student with critical feedback towards the successful completion of the final illumination device and drawings.

2. Model

This model is a scaled version of your proposed illumination device; it allows you to critique and review the sculptural qualities of the illumination device. Its materiality and construction should reflect the proposed qualities of your final piece. The model should be a considered piece (think proportion, materiality, textures, form, balance), not a thrown together last-minute endeavour. It will be developed in conjunction with the working drawings.

3. a Complete Set of Construction Drawings, submitted in an A3 format as well as CD of all drawing files. All drawings should have a standardized title block that will include the designer's name, scale, north arrow, and drawing title. The drawings, when submitted, must include enough information – dimensions, materials, fabrication methods -for a contractor to comprehend what your overall design and construction intent is. The following list represents a minimum set and is the criteria used for marking:

1. Site Plan - this drawing should locate your illumination on a specific site.

2. Elevations - at least a front view and a side view.
3. Sections
4. Plans - these could include several plans, cut through various elevations of the device.
5. Details - the number of details differs with each device and should include all details required to build your device. In particular consider how materials meet, edge qualities, texture qualities and structure. Some of these details will be technical in nature and while others may be more evocative and reflect the illumination device's visual qualities.

4. The Built Illumination Device:

Using your working drawings and model as guides, you will build your illumination device. A component of this device must be made of concrete. The concrete should not be used as a traditional lamp base or pedestal, rather it should be an integral component of the light. The more complex your device, the more time you must build in to its creation for experimentation and failure. This takes time, luck and perseverance. The final device will be assessed on craft, attention to detail, overall design and composition, and qualities of illumination.

Four Components	Assessment	Date Due
Project Proposals	5%	April 3
Model	5%	April 17
Evidence of drawing and/or ID progression	5%	May 1
Construction Drawing Set	25 %	June 11
Built Illumination Device	30 %	June 11

Project Two: OPTION B - Public Domain Element

You are asked to design an element of public infrastructure: a bus-stop, an element of illumination, a place for sitting, a roadway sound barrier or something similar in nature and scale. It primary material must be designed and constructed from concrete. A second material of your choice can also be used: timber, metal, plastic, glass or stone. This element of the public domain must be sited on an undulating site of your choosing (there is no such thing as a flat site!). The site must be located in the public realm. This is important as the projects will be used for submission to the CCAA Public Domain Awards in 2007. The judging criteria for the Public Domain Awards should be reflected in the design of the project. The CCAA criteria will be handed out during class.

Drawing is an inherent component of this investigation. Keep it simple. The more complex your ideas are the more complex the preparation and drawings need to be. This project will have three components. Please note that you will continue to revise your construction drawings as your design develops. You will be assessed on each of these components:

1. Project proposals/Working drawings.
2. Public domain element model.
3. A very complete set of construction drawings

1. Public Domain Proposals/ Working Drawings

These drawings are to be submitted in an A3 format. They should reflect a complexity of thought and investigation into the design and construction of your built device. The drawings should be used to investigate materials, connections, and the potential design qualities of your built work. They will be submitted for review twice during the semester; we will use these drawings to facilitate a dialogue on construction technique and design outcome. In order to facilitate a group discussion, you are also asked to submit these drawings as a PowerPoint presentation. This presentation is nothing elaborate, simply scan or import your drawings as a series of slides that we can project for discussion. You can submit a CD at the beginning of class OR email me your presentation by 5 pm the 2nd of April.

Thoroughness of these drawings is essential in order for the studio coordinator to be able to properly assess your progress as well as provide the student with critical feedback towards the successful completion of the final illumination device and drawings.

2. Model

This model is a scaled version of your proposed illumination device; it allows you to critique and review the sculptural qualities of the illumination device. Its materiality and construction should reflect the proposed qualities of your final

piece. The model should be a considered piece (think proportion, materiality, textures, form, balance), not a thrown together last-minute endeavour. It will be developed in conjunction with the working drawings.

3. a Complete Set of Construction Drawings, submitted in an A3 format as well as CD of all drawing files. All drawings should have a standardized title block that will include the designer’s name, scale, north arrow, and drawing title. The drawings, when submitted, must include enough information – dimensions, materials, fabrication methods -for a contractor to comprehend what your overall design and construction intent is. The following list represents a minimum set and is the criteria used for marking:

1. Site Plan - this drawing should locate your illumination on a specific site.
2. Set Out Plan - this drawing should include all set-out and grading information.
3. Elevations - at least a front view and a side view.
4. Sections
5. Plans - these could include several plans, cut through various elevations of the device.
6. Details - the number of details differs with each device and should include all details required to build your device. In particular consider how materials meet, edge qualities, texture qualities and structure. Some of these details will be technical in nature and while others may be more evocative and reflect the illumination device’s visual qualities.
7. A three-dimensional computer generated model of your illumination device as an object.
8. Three computer-generated three-dimensional detail drawings of your illumination device.
9. A drawing using 3DVIS that conveys your lighted illumination device at night. This drawing must convey the device in situ and show the qualities of the light projected onto the surrounding terrain.

Three Components	Assessment	Date Due
Project Proposal and presentation	5%	April 3
Model	5%	April 17
Evidence of drawing and/or ID progression	10%	May 8
Construction Drawing Set	50%	June 11

Bibliography:

One of the best journals for this course is *Detail*, a German publication with lots of technical drawings. It is written in both English and German as well as being available in other languages.

Call number = P 720.5 P77, EDFAA library.

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Weston, Richard. *Materials, Form and Architecture*. Lawrence King Publishing, London, 2003.

Zangberi, Luigi. "Curiosities and Marvels of the Sixteenth-Century Garden."

Recommended Websites:

Concrete and Cement Association of Australia Website: www.concrete.net.au

Australian Standards, UWA Library online document: <http://www.standards.com.au/online/autologin.asp>