

EVDA 782.3

Design-Build: Refugee Shelter, or a Minimum Dwelling

Senior Architecture Design Studio F(0-16)

Winter 2015 (Rev. January 6, 2015)

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INTRODUCTION, TEACHING APPROACH AND TOPIC AREAS

This senior studio focuses on the design of a prototype refugee shelter based on the technical requirements of the United Nations High Commission on Refugees (UNHCR); see www.unhcr.ca or www.unhcr.org. Due to conflicts and political instability around the world (humanitarian crises) millions of people have been displaced, resulting in unprecedented human migration. This creates refugees, who are usually desperate for shelter. The UNHCR currently provides tents to those housed in refugee camps. This studio will examine current refugee shelter standards, and explore ways of designing better shelters. The history and concept of the “minimum dwelling,” that dates from the 1920s, will also be employed; students will research precedents of both minimum dwelling and contemporary refugee shelter design. Students will develop designs for an actual refugee shelter, and during the term one, or more, shelters will be selected for construction.

Typically the UN allocates 3.5 m² per person, and allows for 5 persons in a shelter, they require that shelters “provide minimum decent living conditions to families affected by humanitarian crises.” Designs need to be flexible, functional (sleeping, eating, dressing, storage, etc.), efficient, environmentally friendly, lightweight (less than 120 kg), simple to erect and dismantle, adaptable, suited to climate, last for 3 years, inexpensive, provide privacy (gender and age sensitive), maintainable, ventilated, and transportable.

This studio, while developing skills, is also seen as being a site for discovery through analysis and process. The studio will explore the nature of contemporary minimum dwelling design, with respect to program, cultural and social forces, technology, ecology, etc. The studio will involve the integration of consultation, research, readings, field trips, lectures, etc. Students are expected to use a variety of media in their design development. Handouts will be given out during the term as required.

OBJECTIVES

1. To understand principles of refugee shelter design, including materials, assemblies, costs, functions, structure, and innovation.
2. To understand architectural design as investigative and technical process.
3. To develop skills in architectural representation, particularly digital media, from the sketch to construction drawings.
4. To critically define and develop an architectural concept into a detailed design, and then to construction.

SCHEDULE, TOPIC AREAS, AND MEANS OF EVALUATION

PHASE 1: **Research** (10%)

Monday, January 12 – Tuesday, January 20, 2015

Working individually undertake the following work:

- 1) Research the following topics:
 - a) UNHRC Standards for Refugee Shelters
 - b) Analyse a prototypical refugee shelter
 - c) Select from the following list a “minimum dwelling” and produce analytical 3-D diagrams that show the following arrangements: 1) sleeping, 2) storage (water, food, and possessions), 3) cooking/eating, 4) gathering of household members, 5) washing/dressing, 6) child rearing (care of children and ill):
 - Parker and Unwin, Cottage, Letchworth, c. 1903-10
 - Buckminster Fuller, Dymaxion House, 1927
 - Frankfurt Existenzminimum House/CIAM, c. 1925-30
 - Le Corbusier, Maisons Loucheur, 1929
 - Marcel Breuer, Yankee Portables, 1942
 - Alison and Peter Smithson, House of the Future, 1956
 - Airstream Trailer (sleeps 4-6), c. 1950-Present
 - Volkswagen Westfalia Camper Van (sleeps 4), c. 1960-92
 - David Greene/Archigram, Living Pod, 1965
 - Wes Jones, Container House, 1994-98
 - Horden Cherry Lee Architects, Micro Compact Home, c. 2001 (sleeps 4)
 - Quicksilver 8' Tent Trailer, c. 2014 (sleeps 4-6)
 - d) Produce a 11” x 17” Document.
- Tent Raising Exercise: Friday, January 16
Review: Tuesday, January 20, 2015

PHASE 2: **Concept Design** (10%)

Tuesday, January 20 – Tuesday, February 3

- a) Develop conceptual design

Review: Tuesday, February 3

PHASE 3: **Design Development and Presentation** (10%)

Tuesday, February 3 – Friday, February 13

Review: Friday, February 13

FAMILY DAY/BLOCK (READING) WEEK THREE

February 16 – February 20

PHASE 4: **Outline Technical Drawings and Cost Estimates** (10%)

Tuesday, February 24 – Tuesday, March 3

Review: Tuesday, March 3

PHASE 5: **Selection of Schemes/Teams, Material Sourcing and Design Development** (10%)

March 3 – March 17, 2012

Review: Tuesday, March 17

PHASE 6: Construction (30%)

Tuesday, March 17 – Tuesday, April 14

PHASE 7: Final Hand-In, Term Report (see below) and Reviews (20%)

To be determined

Term Report (10%)

Students are required to submit a pdf document at the end of the term that summarizes the studio and acts as a portfolio of work. The document will contain written and graphic material, along with a critical reflection on the term. Students can select a suitable format for the layout of the document – not to exceed 30 pages. Ensure images are suitably labeled or captioned. The contents are as follows:

- Abstract
- Introduction: Research Problem Statement
- Methods and Literature
- Architectural Program
- Statement on Research and Design
- Process Documentation
- Final Project Documentation
- Conclusion: Lessons Learned, Future Research
- References and Bibliography

REQUIRED READING

Teige, K., "The Modern Apartment and the Modern House," in *The Minimum Dwelling*.

SELECT BIBLIOGRAPHY

AD, *The Transformable House*.
Bergdoll, B. and P. Christensen, *Home Delivery: Fabricating the Modern Dwelling*.
Bourgeois, V. et al (CIAM), *Die Wohnung für das Existenzminimum*, 1933.
Chermayeff, S. and C. Alexander, *Community and Privacy*.
Costa Duran, S., *Eco House*.
Fuller, B., and R. Marks, *The Dymaxion World of Buckminster Fuller*.
Kieran, S. and J. Timberlake, *Refabricating Architecture*.
Liddell, H., *Eco-minimalism: the antidote to eco-bling*.
Living Building Challenge 2.0.
Marras, A., ed., *Eco-Tec: Architecture of the In-Between*.
Mobbs, M., *Sustainable House*.
Moore, C. et al, *The Place of Houses*.
Nappo, D. and S. Vairelli, *Homes on the Move: Mobile Architecture*.
Richardson, P., *Nano House: Innovations for Small Dwellings*.
Rybczynski, W., *Home: A Short History of an Idea*.
Smith, E.A.T., *Case Study Houses*.
Steffen, A., ed., *World Changing: A User's Guide for the 21st Century*.
Teige, K., *The Minimum House*.
UNHCR, "Shelter Solution Technical Assessment Summary."
UNHCR, "Technical Specifications of All Weather Conditions Shelter."
Zeiger, M., *Tiny Houses*.

GRADING SCALE

At the discretion of the instructor, assignments submitted after the deadline **may** be penalized with the loss of a grade (e.g.: A- to B+) for each day late. The following equivalencies will be used in determining grades: **A+** (95-100); **A** (90-94.99); **A-** (85-89.99); **B+** (80-84.99); **B** (75-79.99); **B-** (70-74.99); **C+** (65-69.99); **C** (60-64.99); **C-** (55-59.99); **D+** (50-54.99); **D** (45-49.99); **F** (0-44.99).

NOTES

1. Written work, term assignments and other course related work may only be submitted by e-mail if prior permission to do so has been obtained from the course instructor.
2. It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at 220-8237. (<http://www.ucalgary.ca/drc/node/46>) Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than fourteen (14) days after the start of this course.
3. Plagiarism - Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Most commonly plagiarism exists when:(a) the work submitted or presented was done, in whole or in part, by an individual other than the one submitting or presenting the work (this includes having another impersonate the student or otherwise substituting the work of another for one's own in an examination or test),(b) parts of the work are taken from another source without reference to the original author,(c) the whole work (e.g., an essay) is copied from another source, and/or,(d) a student submits or presents work in one course which has also been submitted in another course(although it may be completely original with that student) without the knowledge of or prior agreement of the instructor involved. While it is recognized that scholarly work often involves reference to the ideas, data and conclusions of other scholars, intellectual honesty requires that such references be explicitly and clearly noted. Plagiarism is an extremely serious academic offence. It is recognized that clause (d) does not prevent a graduate student incorporating work previously done by him or her in a thesis. Any suspicion of plagiarism will be reported to the Dean, and dealt with as per the regulations in the University of Calgary Graduate Calendar.
4. Information regarding the Freedom of Information and Protection of Privacy Act (<http://www.ucalgary.ca/secretariat/privacy>) and how this impacts the receipt and delivery of course material
5. Emergency Evacuation/Assembly Points (<http://www.ucalgary.ca/emergencyplan/assemblypoints>)
6. Safewalk information (<http://www.ucalgary.ca/security/safewalk>)
7. Contact Info for: Student Union (<http://www.su.ucalgary.ca/page/affordability-accessibility/su-structure/contact-info>); Graduate Student representative(<http://www.ucalgary.ca/gsa/>) and Student Ombudsman's Office (<http://www.su.ucalgary.ca/page/quality-education/academic-services/student-rights>).

