

Module Outline

Module Code : RE1706
Module Title : Design and Construction
Semester : Semester 2, Academic Year 2022/2023
Faculty : Adjunct Associate Professor Helen Chen
Department : Real Estate
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Overview

Property development is the continual reconfiguration of the built environment to meet society's needs. The choices we make about what to build, where to build and how to build influence urban sustainability, equity and resilience.

The first part covers the development of the building form in terms of the design, functionality, structural and construction issues including regulations, site planning and building technology. The second part focuses on the fundamental principles and practice of design and construction for real estate development by examining the key building components, how design and construction affect property value, maintainability, function and use. The module objectives include helping students understand the processes involved in real estate development, the trade-offs between design and economic considerations and the role of the different stakeholders. Students will also acquire skills in the interpretation of building drawings and appreciation of construction methods and materials.

Learning Outcomes

Through the module, student will be able to:

- Appreciate and appraise the built environment through various visual media (2D and 3D)
- Analyze the key determinants of building design including economic, psychological, technological and regulatory drivers
- Apply the language of design to communicate effectively with the development team
- Integrate the principles and best practices in design and construction to improve value outcomes in real estate developments

Module Prerequisite(s)

Nil

Module Preclusion(s)

Nil

General Guide & Reading

Nil

Tentative Schedule & Outline

Lesson/ Week	Date	Topic	Activity
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			(preparation / cases & assignments / follow-up readings & resources)
1	Jan 9 - 13	Overview <ul style="list-style-type: none"> • Module Objectives • Introduction to Design Approach and Review • Module Structure 	
2	Jan 16 - 20	Review of Building Design and Floor Plans <ul style="list-style-type: none"> • Building Design • Reading Construction Drawings • Floor Plan Analysis 	
3	Jan 23 - 27 *CNY Holiday 22-24 Jan (Mon/Tue)	Master Plan, Site Plan and Land Use <ul style="list-style-type: none"> • Land Use and Master Plan • Density and Massing • Site Planning and Analysis 	<ul style="list-style-type: none"> • Tutorial 1 (Odd week groups) • Assignment 1 (Odd week groups)
4	Jan 30 - Feb 3	Land and Building Optimization <ul style="list-style-type: none"> • Land Optimization Strategies • Planning and Building Parameters • Floor Layout Efficiency 	<ul style="list-style-type: none"> • Tutorial 1 (Even week groups) • Assignment 1 (Even week groups)
5	Feb 6 - 10	Principles of Value-for-Money (VFM) Design <ul style="list-style-type: none"> • Good Design Principles • Economics of Building Design • Building Enclosure 	<ul style="list-style-type: none"> • Tutorial 2 (Odd week groups) • Assignment 2 (Odd week groups)
6	Feb 13 - 17	Social and Behavioral Impact <ul style="list-style-type: none"> • Deterministic Design • Organizing Principles • Enriched Environment 	<ul style="list-style-type: none"> • Tutorial 2 (Even week groups) • Assignment 2 (Even week groups)
Recess Week 18 Feb to 26 Feb 2023			
7	Feb 27 - Mar 3	Building Systems <ul style="list-style-type: none"> • Principles of Structure • Structural Systems and Components • Construction Methods 	<ul style="list-style-type: none"> • Tutorial 3 (Odd week groups) • Assignment 3 (Even week groups)
8	Mar 6 - 10	Regulations <ul style="list-style-type: none"> • Regulatory Environment • Key Regulatory Areas <ul style="list-style-type: none"> • Construction Productivity • Sustainability • Safety • Accessibility 	<ul style="list-style-type: none"> • Tutorial 3 (Even week groups) • Assignment 3 (Even week groups)
9	Mar 13 - 17	Design and Construction Process <ul style="list-style-type: none"> • Project Development Phases & Deliverables • Cost Estimation 	<ul style="list-style-type: none"> • Tutorial 4 (Odd week groups)

10	Mar 20 - 24	Project Control & Key Stakeholders <ul style="list-style-type: none"> • Project Complexity • Stakeholders • Cost and Time Overrun • Project Leadership 	• Tutorial 4 (Even week groups)
11	Mar 27 - 31	Group Project Presentations (Odd Week Groups)	
12	Apr 3 - 7 *Good Friday 7 Apr (Fri)	Group Project Presentations (Even Week Groups)	
13	Apr 10 - 14	Module Wrap-Up	Group Project Final Report Submission
Reading Week 15 Apr to 21 Apr 2023			
Examination Weeks 22 Apr to 6 May 2023			

Assessment

Assessment Components	Weightage (%)
Individual Assignment	15
Group Project	40
Participation	10
Open Book E-Examination	35
Total	100

Academic Honesty & Plagiarism

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is “the practice of taking someone else’s work or ideas and passing them off as one’ own” (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. In case of any doubt, you should consult your instructor.

Additional guidance is available at:

- <http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct>
- <http://nus.edu.sg/osa/resources/code-of-student-conduct>

About me

Adjunct Assoc Prof Helen Chen is a Professional Architect and Project Director. She has won many architectural design awards in private practice. In the public sector, she has headed the Land Policy Department in the Ministry of Law and the Centre for Public Project Management in the Ministry of Finance. She currently sits

on various boards and advisory committees, to enhance value for money propositions and ESG outcomes in the built environment.