

# BLDG 1013 BUILDING SCIENCE

**Credit Points** 10

**Legacy Code** 301219

**Coordinator** Alan Todhunter ([https://directory.westernsydney.edu.au/search/name/Alan Todhunter/](https://directory.westernsydney.edu.au/search/name/Alan%20Todhunter/))

**Description** This subject provides students with an introductory overview of the way in which scientific principles impact on the structure, fabric and performance of the built environment. Areas covered will include the concepts of force, energy and work in building structures; properties of common building materials; and significant aspects of heat, light and sound in buildings. All the theoretical content will be contextualised within examples drawn from the construction industry. Students will be able to recognise the critical data required for practical decision-making in the area of building technology.

**School** Eng, Design & Built Env

**Discipline** Building Science and Technology

**Student Contribution Band** HECS Band 2 10cp

Check your fees via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Undergraduate Level 1 subject

## Learning Outcomes

On successful completion of this subject, students should be able to:

1. Describe the ways that forces act on building structures
2. Compare and contrast the properties of common building materials
3. Explain the causes of deterioration in building materials over time and suggest remedies for this deterioration
4. Distinguish the concepts of embodied energy and embodied carbon as they relate to buildings
5. Correlate the concepts of heat, light and sound transmission through building elements with decision making on materials for buildings

## Subject Content

1. Introduction to scientific concepts as they impact on buildings
2. Energy, mass, force, velocity and acceleration in building structures
3. Properties of timber, steel, concrete and other common building materials
4. Durability and deterioration in building materials
5. Embodied energy and embodied carbon in building materials and systems
6. Management and control of heat, light and sound in buildings

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

| Type       | Length     | Percent | Threshold | Individual/<br>Group Task | Mandatory |
|------------|------------|---------|-----------|---------------------------|-----------|
| Quiz       | 30 minutes | 10      | N         | Individual                | N         |
| Case Study | 2500 words | 30      | N         | Group                     | N         |
| Quiz       | 45 minutes | 15      | N         | Individual                | N         |
| Reflection | 1500 words | 30      | N         | Individual                | N         |
| Quiz       | 45 minutes | 15      | N         | Individual                | N         |

Teaching Periods

## Spring (2025)

### Penrith (Kingswood)

**Hybrid**

**Subject Contact** Alan Todhunter ([https://directory.westernsydney.edu.au/search/name/Alan Todhunter/](https://directory.westernsydney.edu.au/search/name/Alan%20Todhunter/))

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=BLDG1013\\_25-SPR\\_KW\\_3#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=BLDG1013_25-SPR_KW_3#subjects))

### Parramatta - Victoria Rd

**Hybrid**

**Subject Contact** Alan Todhunter ([https://directory.westernsydney.edu.au/search/name/Alan Todhunter/](https://directory.westernsydney.edu.au/search/name/Alan%20Todhunter/))

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