



CIVL4406

Collaborative Construction Technology and Innovation

Session 2, In person-scheduled-weekday, North Ryde 2026

School of Engineering

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General Information

Unit convenor and teaching staff

Unit Convenor

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by appointment

Teaching Assistant

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Teaching Assistant

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Credit points

10

Prerequisites

210 CP at 1000 level or above and (CIVL1001 or MECH1001)

Corequisites

Co-badged status

CIVL8206

Unit description

In this unit, you will explore collaborative construction as an approach to planning, designing, and delivering construction projects with integrated project teams. You will examine how collaborative construction technologies and innovations support improved communication, streamlined processes, and enhanced project outcomes across all phases of project development, including planning, design, construction, operation, and end-of-life considerations.

You will investigate current and emerging technologies that enable collaboration in construction, including project management tools, collaboration platforms, Building Information Modelling (BIM), virtual and augmented reality, cloud computing, mobile applications, and the Internet of Things. Through this exploration, you will develop an understanding of how these technologies can be applied to improve coordination, innovation, and performance in construction practice.

Learning in this unit enhances student understanding of global challenges identified by the United Nations Sustainable Development Goals ([UNSDGs](#)) Industry, Innovation and Infrastructure; Sustainable Cities and Communities

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Apply collaborative construction technology tools and techniques for developing sustainable and effective solutions for construction projects challenges.

ULO2: Develop and justify project a plan using collaborative construction technologies to support project coordination and delivery.

ULO3: Analyse collaborative construction processes and apply them to optimise project delivery and achievement of project objectives.

ULO4: Critically evaluate emerging technologies and innovative approaches for their application in collaborative construction projects.

ULO5: Communicate collaborative construction solutions and recommendations effectively to professional stakeholders through concise and persuasive presentations.

General Assessment Information

REQUIREMENTS TO PASS THIS UNIT

To pass this unit you must achieve a total mark equal to or greater than 50%.

LATE ASSESSMENT SUBMISSION

Late assessments are not accepted in this unit unless a [Special Consideration](#) has been submitted and approved.

SPECIAL CONSIDERATIONS AND SHORT EXTENSIONS

Special Consideration

The [Special Consideration Policy](#) aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable and significantly disruptive, and which may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please inform the convenor and submit a Special Consideration request through <http://connect.mq.edu.au/>.

Short Extensions

Students are allowed to request an extra 3 calendar days to complete eligible assessments. The only eligible assessment in this unit is the Portfolio.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Portfolio	20%	No	18/10/2026	Individual	Yes	Open
Special Topic Presentation	30%	No	Weeks 11 & 12	Individual	No	Observed
Project Report	50%	No	Week 13	Individual and Group	No	Open

Portfolio

Assessment Type ¹: Portfolio

Indicative Time on Task ²: 12 hours

Due: **18/10/2026**

Weighting: **20%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

You will document and reflect on your learning, skill development, and professional insights gained through engagement with collaborative construction technologies and practices.

On successful completion you will be able to:

- Apply collaborative construction technology tools and techniques for developing sustainable and effective solutions for construction projects challenges.
- Develop and justify project a plan using collaborative construction technologies to support project coordination and delivery.
- Analyse collaborative construction processes and apply them to optimise project delivery and achievement of project objectives.
- Critically evaluate emerging technologies and innovative approaches for their application in collaborative construction projects.
- Communicate collaborative construction solutions and recommendations effectively to professional stakeholders through concise and persuasive presentations.

Special Topic Presentation

Assessment Type ¹: Presentation task

Indicative Time on Task ²: 16 hours

Due: **Weeks 11 & 12**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will investigate an emerging collaborative construction technology or innovation and present your evaluation of its potential application in construction projects.

On successful completion you will be able to:

- Apply collaborative construction technology tools and techniques for developing sustainable and effective solutions for construction projects challenges.
- Critically evaluate emerging technologies and innovative approaches for their application in collaborative construction projects.
- Communicate collaborative construction solutions and recommendations effectively to professional stakeholders through concise and persuasive presentations.

Project Report

Assessment Type ¹: Professional task

Indicative Time on Task ²: 60 hours

Due: **Week 13**

Weighting: **50%**

Groupwork/Individual: Individual and Group

Short extension ³: No

AI Approach: Open

You will produce a project report that develops and justifies a project development plan using collaborative construction technologies and practices.

On successful completion you will be able to:

- Apply collaborative construction technology tools and techniques for developing sustainable and effective solutions for construction projects challenges.
- Develop and justify project a plan using collaborative construction technologies to support project coordination and delivery.
- Analyse collaborative construction processes and apply them to optimise project delivery and achievement of project objectives.
- Critically evaluate emerging technologies and innovative approaches for their application in collaborative construction projects.
- Communicate collaborative construction solutions and recommendations effectively to professional stakeholders through concise and persuasive presentations.

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- [Academic Success](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation.

³ An automatic short extension is available for some assessments. Apply through the [Service Connect Portal](#).

Delivery and Resources

TEACHING ACTIVITIES

Workshops are 3 hours per week, in-person, and begin in Week 1.

METHODS OF COMMUNICATION

We will communicate with you via your university email and through announcements on iLearn. Queries to convenors can either be placed on the iLearn discussion board or sent to the unit convenor via the contact email on iLearn.

Resources are provided in the Unit's iLearn and in the Workshop classes.

Unit Schedule

Please see the iLearn page for further detail.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies](https://students.mq.edu.au/support/study/policies) (<https://students.mq.edu.au/support/study/policies>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit connect.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing an](#)

[d maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Academic Success

[Academic Success](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Ask a Study Coach](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)
- [Student Advocacy](#) provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the [Service Connect Portal](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit <https://students.mq.edu.au/support/technology/service-desk>.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Engineers Australia Stage 1 Competency

EA Competency Standard		Unit Learning Outcomes
Knowledge and Skill Base	1.1 Comprehensive, theory-based understanding of the underpinning fundamentals applicable to the engineering discipline.	ULO1, ULO2, ULO3
	1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing.	ULO1
	1.3 In-depth understanding of specialist bodies of knowledge	ULO1, ULO2, ULO3
	1.4 Discernment of knowledge development and research directions	ULO1, ULO3
	1.5 Knowledge of engineering design practice	ULO1, ULO4
	1.6 Understanding of scope, principles, norms, and accountabilities of sustainable engineering practice.	ULO2, ULO4
Engineering Application Ability	2.1 Application of established engineering methods to complex problem solving	ULO3
	2.2 Fluent application of engineering techniques, tools and resources.	ULO3, ULO4
	2.3 Application of systematic engineering synthesis and design processes.	ULO3, ULO4

	2.4 Application of systematic approaches to the conduct and management of engineering projects.	ULO4
Professional and Personal Attributes	3.1 Ethical conduct and professional accountability.	ULO5
	3.2 Effective oral and written communication in professional and lay domains.	ULO5
	3.3 Creative, innovative and pro-active demeanour.	ULO4, ULO5
	3.4 Professional use and management of information.	ULO4, ULO5
	3.5 Orderly management of self, and professional conduct.	ULO4, ULO5
	3.6 Effective team membership and team leadership	ULO4, ULO5

Unit information based on version 2026.02 of the **Handbook**