

CODE1230 and MUPS0006

An Immersive 3D Virtual Environment to Support Team Collaboration

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About the Courses

Digital Cities – MUPS0006 (Graduate)



This course explores the breadth of data available to urban policymakers, using recently completed and indeed 'live' projects being undertaken within City Futures Research Centre and Built Environment more widely. With the Faculty providing a principal hub in the Australian Urban Research Infrastructure Network (AURIN), students will have access to innovative, nationwide spatial datasets: Australian cities and Sydney in particular will be our laboratory, but international perspectives will be drawn upon.

Urban Modelling - CODE1230 (Undergraduate)



There is an increasing need for the integration of GIS data, 3D city representation and Building Information Model (BIM) to support well-informed urban planning and decision-making. This course is designed to provide students with skills and understanding of how to link the three tiers of land, urban and building information to support analysis of urban planning and city management.

Aim

New collaboration technologies such as online immersive 3D virtual environments offer students great opportunities to undertake online communication and collaboration.

The project was aimed to investigate an immersive 3D virtual platform TERF developed by 3DICC and ways to improve both the graduate and undergraduate built environment curriculum through the use of such as platform.

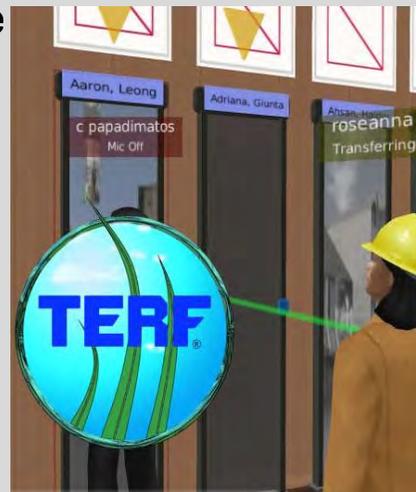
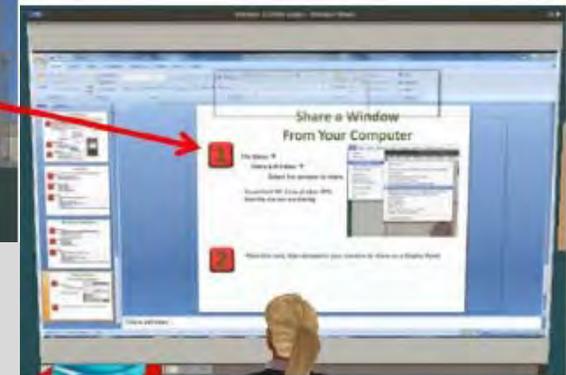
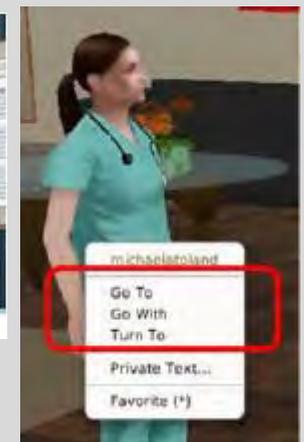
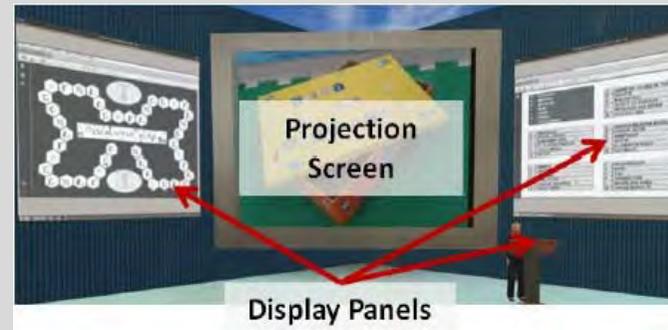


Approach

TERF was used to create an online immersive 3D virtual environment for students to work collaboratively on their group projects and communicate with team members.

The immersive 3D virtual environment consisted of a shared space for all students and individual spaces for students to import their building and precinct model.

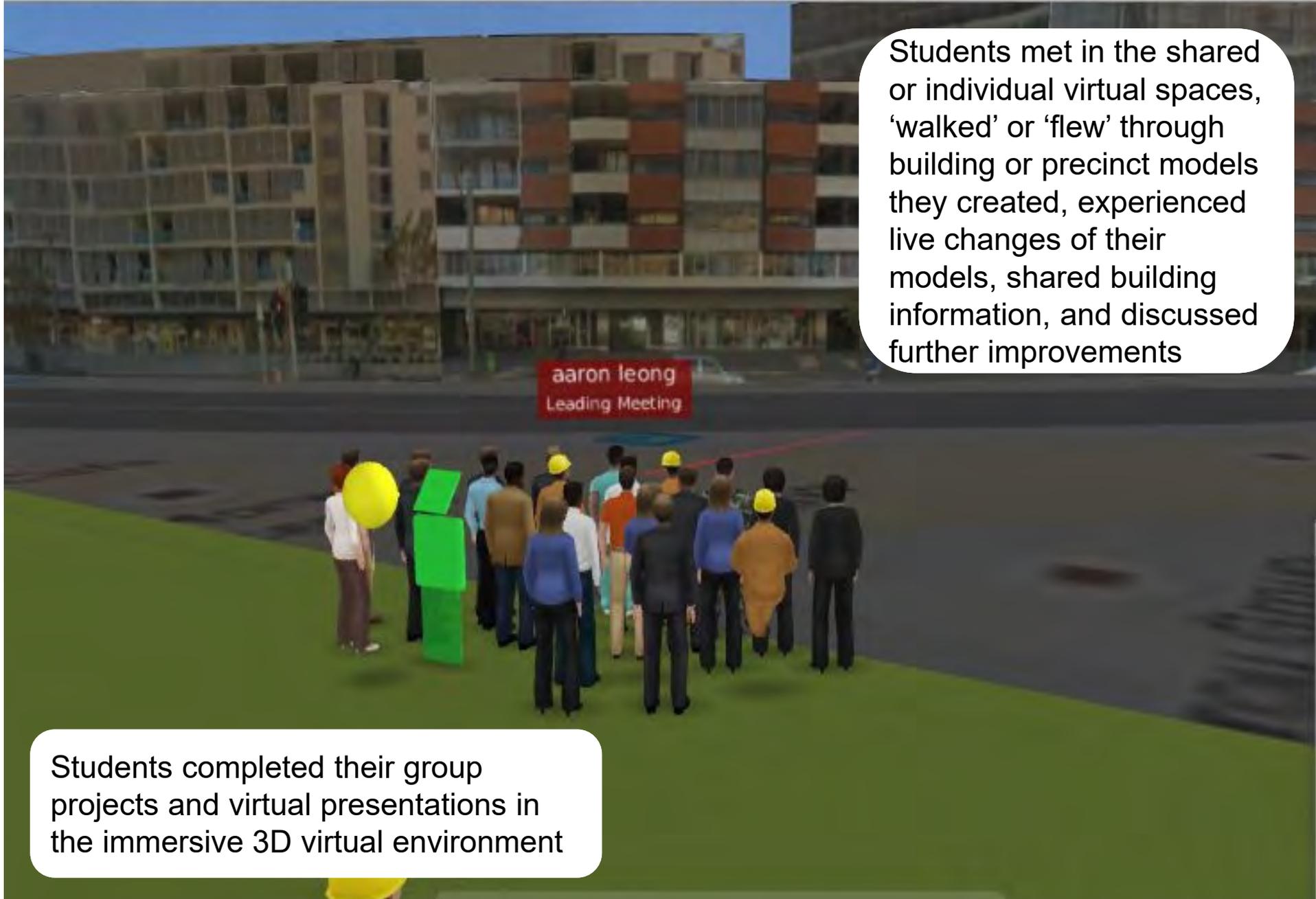
The live voice, video, web camera, whiteboard and chat functions in TERF were used to support real-time communication in teams.



Students met in the shared or individual virtual spaces, 'walked' or 'flew' through building or precinct models they created, experienced live changes of their models, shared building information, and discussed further improvements

aaron leong
Leading Meeting

Students completed their group projects and virtual presentations in the immersive 3D virtual environment





People Online

- 🔊 aaron leong (Leader) L ▲
- ✕ a saguinsin (Here)
- ✕ aron sheldon (Here)
- ✕ Branko (Here)
- 👆 c andradeayuki (Here)
- ✕ c papadimatos (Here)
- ✕ charlotte firth97 (Here)

⋮ ⏪ ⏩ ⌂ Invite New User

Landmarks

- Home
- Bird's Eye
- Plan View

Text Chat

11:07 Today - c andradeayuki arrived

11:07 Today - Harris arrived

11:07 Today - t walder left

11:07 Today - katie rijke arrived

 hello aaron

11:07 Today - charlotte firth97 arrived

11:07 Today - c papadimatos arrived

⋮

 ...

 Tim: Text Chat

11:08 Copy Message

⋮ Show More Messages

11:09 Compose Mail... Save Transcript... Clear Chat Transcript





- People** Online
- × aaron leong (Leader)
 - × a saguinsin (Here)
 - × aron sheldon (Here)
 - × Branko (Here)
 - ↑ c andradeayuki (Here)
 - × c papadimatos (Here)
 - × charlotte firth97 (Here)

Invite New User

- Landmarks**
- Home
 - Bird's Eye
 - Plan View

Text Chat

11:09 Today - thatONEguy arrived

11:09 Today - thatONEguy arrived

thatONEguy: sick

m trilsbeck: omg i love trees

Tim: gj fam

katie rijke: Awesome that you added outside houses

11:09 Today - nabeeltahir arrived

nicholas w ho: i love the upside down building

nicholas w ho: ...



Survey

What potential uses can you see TERF, being utilised within, and how could it support the overcoming of issues and challenges facing our cities and urban planning/design?

Student Responses

- Effective method of exploring a space and support collaborative work, or showing clients around their building
- Effective in helping clients view and understand the projects which they have commissioned
- It could be useful for property developers to showcase prospective buyer's future developments.
- As a tool for virtual presentations for overseas and/or distant individuals within a large company
- Testing of new spatial proposals
- Providing a remote and portable platform for communication of multi-medium information
- The tools and spaces are endless, making it useful for large projects, promoting better perceptions of the project
- Replacing physical meetings or exhibitions, into a more virtually oriented meeting/exhibition
- Public consultations, though not to replace face to face consultations.
- Great potential for international gatherings of likeminded professionals collaborating on a project
- A way of testing out scenarios and demonstrating them in a 3D environment (Cost effective)

Survey

What areas within TERF do you think need improvement, and what do you wish to see be implemented within the program?

Student Responses

- If there were live links of the model that could be automatically updated with changes
- Overall improvement of its performance and stability would be highly beneficial
- Make the interface a lot simpler and user friendly (to cater all age groups/computer skills)
- More flexible templates for forum areas or object groups for different uses
- Overall improvement in its technological levels
- Overall improvement in editing media and models, (Includes rotation, positioning, scaling of models and media)
- Would be benefited to support a broader scope of file types, and make it a lot easier to import other file types
- A Graphical overhaul would be beneficial as most systems should support it and will enhance the experience

Outcome

- Two trials were undertaken in MUPS0006 Digital Cities (by Professor Chris Pettit) and CODE1230 Urban Modelling (by Dr Lan Ding) in Semester 2, 2016.
- A summary of the survey data analysis was completed to inform improvement of future curriculum and technical aspects of the TERF platform.
- The production of a research paper that describes the project and its findings is currently in progress. It will be submitted to the Journal of Geography in High Education.

Thank You