Acknowledgements

The Technology Unit of the Curriculum K–12 Directorate has developed professional learning workshops for secondary technology teachers in NSW public schools to provide practical teaching and learning strategies, and resources to enhance built environment education in Technology 7–8. Development of these resources was funded and supported by the NSW Architects Registration Board.

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Aims of the workshop

The aims of the workshop are to assist teachers to:

- become familiar with the built environment area of study Technology Years 7-8 syllabus
- explore the concept of the built environment and sustainability through engagement with a familiar public space
- confidently guide students in the design process to enhance creativity, design sensibility and appreciation of the role of architects, designers and builders in society
- experiment with teaching and learning strategies that build student spatial awareness and understanding, and related literacy and numeracy skills
- implement strategies to enhance the use of modelling, drawing, communicating and planning to generate creative ideas and solutions to authentic design situations.

NSWMT course registration

The DET is a NSW Institute of Teachers endorsed provider of professional development for the maintenance of accreditation at Professional Competence.

Scope of endorsement – all Elements of the Professional Teaching Standards.

NSW IT course code: 151CUK153

This DET course or program has been registered for professional development under the terms of the NSW Institute of Teachers Continuing Professional Development policy.

For teachers accredited at Professional Competence this course or program will contribute five hours towards Institute Registered professional development.

This course or program will address the following Professional Teaching Standards:

1.2.1 Apply and use knowledge of the content/discipline(s) through effective content-rich, teaching activities and programs relevant to the stage.

2.2.3 Apply practical and theoretical knowledge and understanding of the different approaches to learning to enhance student outcomes

6.2.3 Engage in professional development to extend and refine teaching and learning activities.
**Spacewise: enhancing built environment education in Technology 7-8**

**Workshop agenda**

<table>
<thead>
<tr>
<th>TIME</th>
<th>SESSION FOCUS</th>
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</thead>
<tbody>
<tr>
<td>9.00 am</td>
<td>Welcome and workshop overview</td>
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<tr>
<td></td>
<td><strong>Session 1</strong> Public space</td>
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<td>9.10 am</td>
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<td>3.00 pm</td>
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<td>3.20 pm</td>
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</tbody>
</table>
Session 1

Activity 1A

The purpose of this activity is to become familiar with a teaching and learning strategy designed to increase student awareness of their local built environment.


2. On the next page draw a plan drawing of the last 15 minutes of your journey to work.

3. Highlight the features of the built environment you observe. Use figurative drawings or icons to annotate your drawing.

4. Share your drawing with the colleagues at your table.

5. Consider how you could use this strategy in the early stages of a built environment project.

Participant notes:
**Session 2**

**Activity 2A**

The purpose of this activity is to explore a public space using either a drawing or mapping activity.

1. Half the teachers on each table will complete:
   - Photographic elevation of site and surrounding area
   The remaining teachers will complete a site plan using:
   - Google map (Laptop wrap: Google mapping it out)

If you were doing this at school you could then ask the students to complete a flat elevation plan of the area and elevation and detail drawings of some of the significant surrounding buildings. The instructions for these activities can be found on pages 16–26, *Resource book.*
Session 2

Activity 2B

The purpose of this activity is to become familiar with Studio E and its use in developing a project brief.

1. Examine the sample project brief generated using Studio E on pages 9–11, Participant workbook.

2. In pairs complete the project brief.

3. Discuss in pairs how you could use Studio E with students.

Participant notes:
**Shelter me**

**Project brief produced by...**

**The task**

By exploring the lack of appropriate shelter in the local park I saw the need to design a shelter to suit the environment and community needs.

The task is to design...

The solution will be used by the local community including...

When the project is finished it will provide suitable shelter for a range of people for a range of purposes.

**Consequences**

The production and use of the project could have the following consequences:

- It could impact others by...

- Developing the solution could impact on the environment by...

- Using the product could...
Criteria for success

For the design solution to be successful, it will:

Planning the process

The project will be limited by: money, local government regulations and ability to be taken seriously (as students).

The resources that will be available for use in the project are:

- sketching equipment
- model making equipment
- expert designer
- teacher
- computers
- reference materials on existing shelter designs
- council guidelines and regulations

During development of the project it will be important to minimise the impact of:
The following people will be available to help me:

As the design develops it will be presented to the town planner for feedback.

**Timeline**

I started the project on 30/6/10. The project must be finished by 30/9/10.

The following steps of the project will be completed by:

Exploring and defining the task – 23/7/10

Generating and developing ideas – 20/8/10

Producing solutions – 30/9/10
Session 3

Activity 3A

The purpose of this activity is to generate and develop ideas for a shelter using a range of drawing techniques.

1. Individually generate one idea for the type of shelter allocated to your group using freehand drawing – part. i.

2. Note the measurements of the base of the shelter, the height, the size of any furniture on the drawing. Grid paper may be helpful to visualise scale.
Session 3

Activity 3B

The purpose of this activity is to generate and develop ideas using either a material or electronic modelling technique.

1. In your group, whoever completed the Google mapping activity will now model a design in traditional materials. The other half of the group will use Google SketchUp to create an electronic model.
2. In groups of 2 or 3 choose one design to model.
3. Refer to the Google SketchUp folder and the Spacewise modellmaking document on the USB thumbdrive for additional advice on electronic or traditional modelling.
Session 3

Activity 3C

The purpose of this activity is to evaluate your ideas for a shelter using the thinking strategy SCUMPS.

1. Evaluate the ideas for the shelter using the questions on the following page. SCUMPS stands for size, colour, use, materials, parts and shape. It is a useful tool for generating and developing ideas but can also be used with a set of expanded questions to evaluate solutions.

**‘What if...?’ questions**

<table>
<thead>
<tr>
<th>S</th>
<th>Size</th>
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</table>
| ‘What if ...’ | this product was a different size?  
Would this improve the design of the product? |
| ‘What if ...’ | we changed the size so that the product was ...  
– twice as big, twice as small  
– ten times bigger, ten times smaller  
– a hundred times bigger, a hundred times smaller?  
Might this change the way you use the product?  
Can you think of a new use for the changed product? |

<table>
<thead>
<tr>
<th>C</th>
<th>Colour</th>
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</table>
| ‘What if ...’ | this product was a different colour or different colours?  
Would this improve the design of the product?  
Might this change the way you use the product?  
Can you think of a new use for the changed product? |

<table>
<thead>
<tr>
<th>U</th>
<th>Uses</th>
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</thead>
</table>
| ‘What if ...’ | we didn’t use the product in the way it was intended?  
Can you brainstorm some new uses for the product? |

<table>
<thead>
<tr>
<th>M</th>
<th>Materials</th>
</tr>
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</table>
| ‘What if ...’ | this product was made from different materials?  
Would this improve the design of the product?  
Can you make it cheaper?  
Can you make it more durable?  
Can you make it more versatile? |

<table>
<thead>
<tr>
<th>P</th>
<th>Parts</th>
</tr>
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</table>
| ‘What if ...’ | you increased or reduced the number of parts within?  
Would this improve the design of the product? |

<table>
<thead>
<tr>
<th>S</th>
<th>Shape</th>
</tr>
</thead>
</table>
| ‘What if ...’ | you changed the shape of the product or the parts within?  
Would this improve the design? |
Session 3

Activity 3D

The purpose of this activity is to draw the modelled design to scale.

1. Considering the modelling experience and the evaluation you have just completed, note any modifications to your initial freehand drawing.

2. Draw a scale drawing of the shelter using grid paper.