Stage 4 sample teaching and learning sequence

Curriculum focus:

Technology (Mandatory) Years 7-8 Syllabus
Area of study: Built Environments
Design specialisation: Architectural Design or Landscape Design
Technologies specific content: graphics technologies, model-making technologies.

A 10–13 week teaching and learning sequence

In this unit students will study a local neighbourhood and consider how it meets the needs of the community. They will explore its development and how it has changed over time. They will consider issues of the conservation and preservation of any significant local historical and/or cultural features.

In groups, students will analyse a public space that is part of the local neighbourhood and use information from this analysis to design and produce a proposal for the re-development of a public space to better meet the needs of users.

Design brief

<table>
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<tr>
<th>Design situation: Public places or spaces are used by numbers of people and often for different purposes. Over time the uses of public spaces change as do the needs of the people who use them. In many instances public spaces no longer suit changing uses or the changing needs of those who might use them. There are opportunities to improve public spaces by re-designing and developing them.</th>
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<tbody>
<tr>
<td>Design task: Re-design a local public space so that it better meets the needs of those who use it or who may use it.</td>
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<tr>
<td>Design solution: The solution will be in the form of a development proposal including drawings, photos, sample materials and/or a multi media presentation. Models may be produced as a means of communicating details of the solution but are not essential. The development proposal must include information about the existing situation, the identified needs of users, details of the design solution including diagrams, plans and images of what the solution will look like.</td>
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Criteria for the selection of a space

As the focus of the students’ design activity, a space should be identified that:

- is accessible for the class to visit for an extended lesson, e.g. at least 1 hour once during school hours
- is used by different users and for a variety of purposes
- contains different architectural features
- is safe for students to observe and record information about how it meets the user’s needs.

The space could be in the local community within walking distance of the school. Alternatively it could be within the school precinct if access to the local community is not practical. In selecting the space consider architectural features that will be interesting for students and/or that are problematic for users.
# Overview of learning experiences

<table>
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<th>Exploring and defining the brief</th>
<th>Learning experience</th>
<th>Purpose of the learning experience</th>
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<tr>
<td><strong>Our local built environment</strong></td>
<td>What is a public space? • Overview of the design task</td>
<td>Understanding basic concepts • built environment • public space • private space.</td>
</tr>
<tr>
<td><strong>Understanding the local neighbourhood</strong></td>
<td>Memory map • Building a ‘big’ picture of our neighbourhood • Documenting features of the neighbourhood</td>
<td>Developing background knowledge of the local neighbourhood as a complex built environment • Organisation of the local environment • Purposes of different features, buildings and areas.</td>
</tr>
<tr>
<td><strong>Our neighbourhood as a unique and changing place</strong></td>
<td>Comparing the local built environment with built environments in other places</td>
<td>Understanding the local neighbourhood as a place that: • is unique (but has similar purposes to neighbourhoods in other places) • changes over time • responds to local conditions and needs • reflects the use of changing construction technologies and resources.</td>
</tr>
<tr>
<td><strong>Adopting a public space in our neighbourhood</strong></td>
<td>Unpacking the task • Re-visiting design process knowledge • Developing a team brief</td>
<td>Developing design process knowledge and skills in relation to the built environment area of study. Developing graphics skills – sketching.</td>
</tr>
<tr>
<td><strong>Working in design teams</strong></td>
<td>Exploring the adopted space • A local safari to the adopted space</td>
<td>Understanding how people can work together in design teams taking on different roles. Developing skills in analysing how well a public space meets the needs of users.</td>
</tr>
<tr>
<td><strong>Modelling the existing space</strong></td>
<td>Purpose and use of models • Producing models</td>
<td>Understanding the role of modelling in a design process. Developing modelling skills.</td>
</tr>
<tr>
<td><strong>Issues – the good, the bad and the ugly</strong></td>
<td>Analysing how well the adopted space meets the needs of users • Identification of a focus for team design activity</td>
<td>Developing skills in analysing how people use a space and how well it meets their needs, and identifying issues in its use. Identifying opportunities to develop the space to better meet users’ needs.</td>
</tr>
<tr>
<td><strong>Developing ideas for a re-designed space</strong></td>
<td>Development of ideas to improve the space for users • Requirements of development proposals</td>
<td>Using creative thinking to generate ideas for modifications to the space to better meet user’s needs. Using experts to assist with idea development. Understanding the role and purpose of a development proposal.</td>
</tr>
<tr>
<td><strong>Producing a development proposal</strong></td>
<td>Working in teams to prepare a development proposal • Planning the presentation of a development proposal</td>
<td>Developing capacities to work as a member of a design team. Developing skills in the production of presentation drawings and orthogonal drawings. Understanding the purpose of, and audience for, components of a development proposal.</td>
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<tr>
<td><strong>Making a public presentation</strong></td>
<td></td>
<td>Communicating, advocating and defending a development proposal. Reflecting on design solutions.</td>
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<tr>
<td><strong>Reflection and final evaluation</strong></td>
<td></td>
<td>Reflecting on design processes.</td>
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</table>
Design process phase | Learning experiences | Related resources
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Exploring and defining the brief | **Our local built environment – Whole class activity**  

**Introduction:** Our towns and cities are made up of buildings and different types of structures. The built environment is concerned with the spaces between and within these the buildings and structures. Many of these spaces are private spaces while others are public spaces.  

Introduce the task: Re-design a local public space so that it better meets the needs of those who use it or who may use it.  

Students unpack the task by identifying and defining essential key terms to clarify what they are required to do.  

Class discussion:  
- What is space? (Space is emptiness that is enclosed in various ways).  
- What types of boundaries define spaces? (Brainstorm: buildings, streets, walls, paths, fences, gardens, etc.)  
- What is a public space? (A space accessible to all.) Differences between public spaces and private spaces.  
- Identify characteristics and/or features of "great" public spaces (explore Public Spaces website in Analyse Activity)  

Expanding thinking – Students list examples (incorporate photos/images) of public spaces and respond to questions: What is in each space? What happens there? Who goes there? Why do we have these spaces? |  | On-line Activities –  
Analyse the Task  
Define Public Spaces  
Public Space Features |
Understanding the local neighbourhood – Whole class activity

Memory map
Teacher may present a prepared memory map of the last 2 or 3 kms of the route he/she takes to school. The class examines the memory map and discusses the information included on it. Ask two volunteers to describe in their own words the route they take to school. (hand-drawn sample shown in Memory Map Activity)

On a blank sheet of paper, each student then draws a freehand sketch map of their own route to school. The map will not be to scale but should include as much information as possible about:
• turns, twists and changes of direction
• important roads travelled, cross roads and streets
• street names.
• natural and man-made features
• building/architectural styles
• buildings of local/historical/cultural significance

From memory students label buildings, parks and other features along the way. As a class, discuss the purpose of different buildings, e.g. residential (high-rise, individual houses, style, age), commercial, industrial, institutional, recreational, transport. On next journey to school, check memory map for accuracy, make changes/additions to original map.

Understanding the local neighbourhood – Whole class activity

Building a ‘big’ picture of our neighbourhood
Use Scribble Maps (in Memory Map Activity) to create an accurate map of the journey. Use icon tools to add detail/information about building. Add brief comments about features and style of building, age, use, materials used. Alternately students could:
• On a printed map, students collate and label information about the features of the local community they have observed and the uses and purposes of buildings in the local environment or
• On Google Earth, print out a road map of the local area. Use Google Earth to identify features of the local built environment and the uses and purposes of buildings and structures. They collate information about major features on the printed road map. On their map, students could colour code buildings and features, e.g. residential = blue, commercial = yellow, industrial = brown, institutional = red, recreational = green, transport = grey.

Prepare and print a memory map as a teacher’s example for students (avoid identifying home destinations).

On-line Activities-Scribble Maps
### Our neighbourhood as a unique and changing place – Whole class activity

Why are places different? Reasons why places are different in different regions, environments, countries – both locally within Australia and globally.

Compare how a particular area of human need is provided for in the neighbourhood environment and, by contrast, how it is provided for by a built environment in a remote or different location.

Select an area of need, e.g. housing (shelter), transport, leisure. For the area of need, identify reasons for differences in features of the built environments in different places. Discuss differences in relation to:

- history of the area – place in time
- climate
- culture
- available building technologies and resources.

### Adopting a public space in our neighbourhood – Whole class activity

Review of the requirements of the design task: To re-design an aspect of a local public space so that it better meets the needs of those who use it or who may use it.

On a map of the local neighbourhood, students identify public spaces that may be the suitable for the design activity. They record features of the space that can be remembered. Brainstorm ideas as whole class. Use cognitive organisers such as mind maps or PMIs to consider pros and cons for each identified space (on board). Students argue case for adopting a particular space based on identified need and suitability to criteria in design task (redesign to better meet the needs of those who use it).

Class discussion – will whole class select the same space for redesign? Will each team/group select a specific part/aspect of the space to focus on?

Students review their understanding of design process and the role of the design brief.

Set expectations: What will a development proposal look like? Emphasise that a development proposal may be for one aspect of the space but that the solution must better meet the needs of those who use the space.

Forming teams to develop a specific design brief for the space. Teams start considering ‘team’ brief.

### Online resources:

- periods of change in Australian architecture
- buildings from different climates and regions – questions – identify location – uses - climate – local materials

### Teacher directed questions to assist students in identifying a suitable space and organising a structure for the class to work within.

Brainstorm, mind maps, PMIs

Examples of development proposals that model authentic practice.
<table>
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<tr>
<th>Working in design teams  – Small group activity</th>
<th>Activity sheet  –  Observing and recording the space</th>
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<tbody>
<tr>
<td>Set expectations for a <strong>local safari</strong>: exploring and experiencing the adopted space – understanding its features, its users and issues. Identifying student’s personal responses to the space: feelings and reactions.</td>
<td>Teacher resource  -  Index of online graphics resources</td>
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<tr>
<td>Each team allocates roles of team members when exploring the adopted space – photographers, map makers, archaeologists/historians and environmentalists (See <em>Observing and Recording the Space</em> in Teachers Resources for suggestions).</td>
<td><strong>On-line Activities:</strong></td>
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<tr>
<td>In preparation for a local safari, students identify the location of the space on a street map or on Google Earth. Relate the space to the earlier exploration of the neighbourhood. View the interactive activity under Local Safari to see how other students conducted their Local Safari.</td>
<td>• <strong>See how</strong> other students have undertaken the task</td>
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<tr>
<td>Provide scaffolding for the role of team members: what to do, what equipment to take, how to document, how to manage information.</td>
<td>• <strong>Construct a panorama</strong></td>
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| *Local safari - walk/street survey - uses and history of buildings and spaces*  
  • observing  
  • recording: sketching to record information, using photographs and audio recording  
  • interviewing or surveying users of the space.  
  • Take lots of photos of the space and surrounding local area in preparation for photomerge activity | • **Create a digital photomerge** |
| After completing the Local Safari, discuss finding with class. Collate information/resources/images etc collected. | • **Photosynth** |
| **Develop Design Brief**  
  Using either StudioE or the On-line Design Brief document, students work in their team/group to work through a series of questions that will inform the development of the Design Brief.  
  The Design Brief and the Criteria developed within the brief will form the basis for on-going evaluation throughout the development of the project and will ultimately aid in determining the level of success achieved by the team/group. | Use StudioE or Design Brief Document under the Develop your design brief tab. |
### Modelling our adopted space – Small group activity

Discuss the purpose of modelling an existing space: to assist with an analysis of its uses, to facilitate team communication and to identify issues for users. Teams collate and respond to information gathered on the local safari.

Producing models to communicate and develop ideas for buildings, features and/or structures in the adopted space.

- Identifying resources and modelling techniques
- using scale
- recognising and labelling features
- analysing uses and identifying users
- architectural/planning terminology

### Teacher resource –

Making models – techniques, materials and purposes
<table>
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<th>Generating and developing ideas</th>
<th>Issues – the good, the bad and the ugly</th>
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<tr>
<td>Weeks 5 to 6</td>
<td>Analyse how well the adopted space meets the needs of users. As a whole class or within individual teams/groups consider:</td>
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<tr>
<td></td>
<td>• What do users think of the space?</td>
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<td>• What do others think of the space?</td>
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<td>• Who might also use the space?</td>
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<td>• Issues of sustainability</td>
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In teams students **Identify of issues for users** of the adopted space: summarise observations using a plus, minus and interesting (PMI) technique. Relate local issues to considerations in designing built environments: landscaping, traffic ways, noise, pollution, lighting, use of energy, maintenance. Relate issues to models, drawings and/or collected information.

**Generate initial ideas for redesign** - with guidance by the teacher, a team might address multiple issues, e.g. energy use, heritage, landscaping or might be limited to a single issue or a single aspect of their adopted space, e.g. pedestrian safety, Re-visit team observations that relate to the selected issue/issues.

**Create a survey** to validate ideas and gain further insight into opinions of users of the public space. **Modify ideas** in response to survey findings if necessary.

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<th>On-line Activities:</th>
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<tr>
<td>Brainstorm using FreeMind</td>
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<tr>
<td>Produce Summary of ideas under Brainstorm Ideas tab</td>
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<tr>
<td>Sketch, annotate and evaluate initial ideas</td>
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<tr>
<td>Use SurveyMonkey to create a user survey. Under Ask others for feedback tab.</td>
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<td>Weeks 7 to 8</td>
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Producing solutions

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<tr>
<th>Time Management Activity</th>
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<tr>
<td><strong>Teacher directed class activity with instruction.</strong> Students brainstorm all possible activities that need to be completed for the Development Proposal. Arrange activities/actions in a logical, sequential order considering what needs to be done before moving to the next step, what can’t be done until a previous action has been completed. Set out as a list. Add an approximate time for completion of each action.</td>
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**Complete Develop Proposal Activity** – look at the example of a Gantt Chart. Teacher instructs how to produce a gantt chart in Excel, Word or a specialised software package such as Microsoft Project. List actions/activities in sequential order down left column, set up time in weeks across top of columns (Week 1, Week 2 etc or use dates), then draw in coloured bars (use drawing tool) to show when the action begins and ends – refer to sample gantt chart

**Evaluate Time/Action Plan** – is it accurate, does it cover all steps/actions, are there any steps that are too big that need to be broken down into more achievable steps, is the timeframe for each step appropriate and achievable, can I stick to the plan, what will I do if I get off track/fall behind?

**Producing a development proposal – team/group activity**

Each team allocates development proposal tasks to team members, including:
- preparation of presentation drawings – graphics
- preparation of appropriate orthogonal drawings
- detailing of the design, and writing specifications
- drafting of text for relevant sections of the proposal
- preparation of photomontage, models, samples of materials and finishes.

Assembling a development proposal – communicating the concept and the details

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**Teacher resource –**

Drawing Basics

**On-line Activities:**

Develop proposal

*Produce communication devices tab:*
- Produce 3D drawings
- Edit your video
- Prepare a presentation
**Week 11 to 12**

Teacher directed examination of presentation techniques. Use on-line activities/videos to generate discussion.

**Preparing a public presentation**
- Team roles for the presentation
- Before and after
- Costs and benefits for users

Obtaining feedback, e.g. audio recording comments, survey/feedback sheet.

**Making a public presentation** – to a member/members of the community

In teams, students make presentations of proposals for the re-design of the adopted space. Team members explain major features of their proposal with the use of graphics and where appropriate models. They respond to questions and defend design decisions with the use of evidence collected during the design process.

Students record, collate and reflect on feedback.

**Reflection and final evaluation**

Reflection by team – and team members. Teams propose modifications to their proposal for the re-designed space as a result of feedback. Teams share reflections on the effectiveness of the process used and consider what might have been done differently.

**Present your ideas tab:**
- Tips for effective presentations
- Video

- Complete Activity
  Reflect on your work
  (evaluation)