

### 8.2.2 Innovative assessment - Case study

This case study is used to illustrate how the overlap in student workload is handled in practice, in order to streamline learning and avoid over-assessment on the Architectural Technology programme.

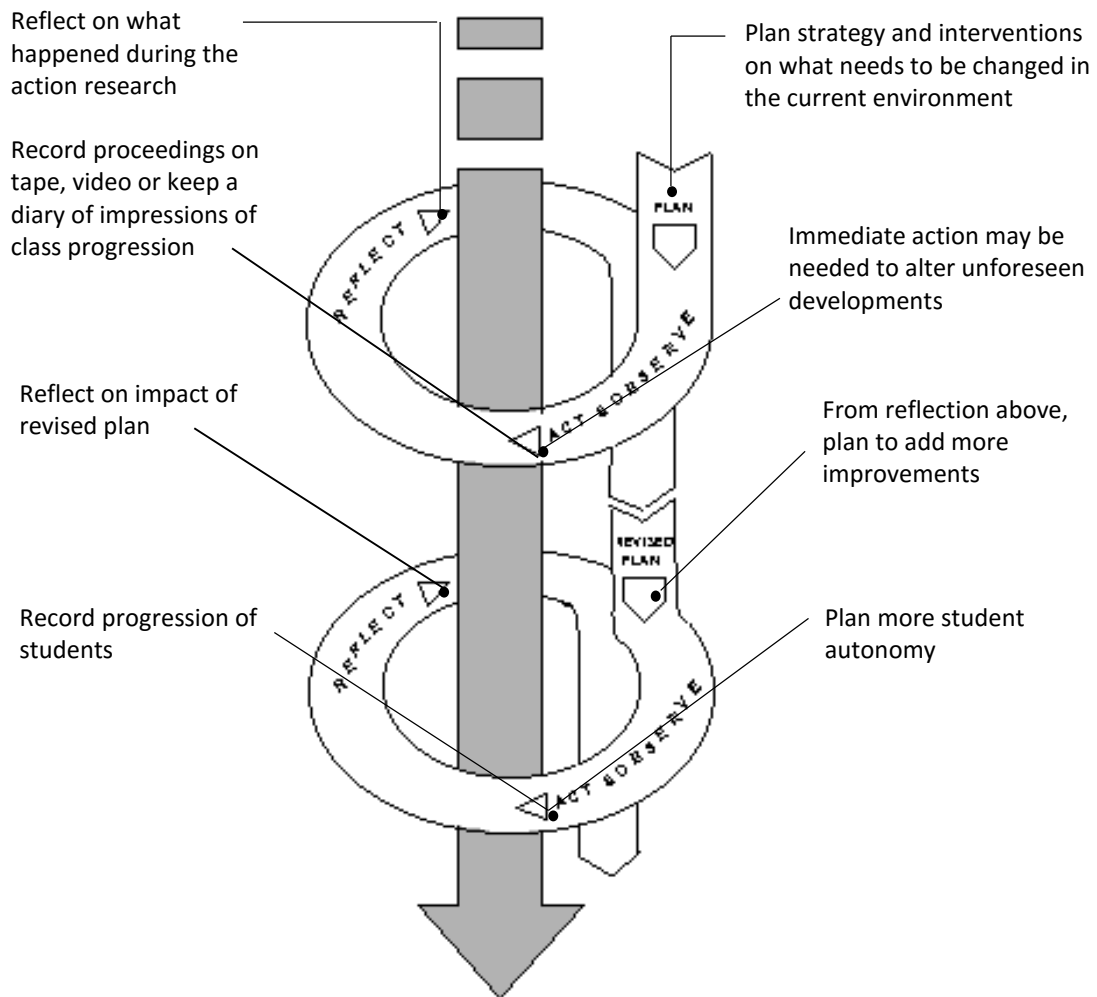
It is a joined assessment entitled 'Group Project', which runs between two second year modules, entitled 'Architectural Technologies and Services 2' and 'Detail and Design Studio 2'. The brief, marking scheme and submission are joined for this exercise and are included in the Appendices.

The assessment is held in the middle of the academic year, when students have grown in confidence in their knowledge of detailing and have transitioned from first year to second year successfully.

The project has been purposefully designed to enhance the inter-relationship and depth of knowledge and understanding of learners between modules about the programmes' core content, to inform both lecturers using a joined pedagogical approach and to encourage best practice in detailing, while incorporating an element of supervised group peer mentoring.

In pairs, students engage in self-directed research on construction materials and technologies which are new to them (Such as a multi-storey steel frame, various concrete flooring systems and new cladding-types), concluding with a set of tutored 1:5 detailed drawings, which are subsequently used to construct two 1:5 models of the same details. These details inform the second project in Studio, which runs for the remainder of the year.

This assessment has been conducted at the mid-way point in second year for the third year in a row, and is approached by both lecturers with cyclic reflective practice. Both teacher and learner reflections have been noted on the brief this year, so that adjustments can be made in the next academic cycle, as indicated in the appendices. In fact, it is on-going action research into improving the learning and teaching strategy in the second year of this programme, akin to that illustrated in Figure 18 below.



**Figure 1 The Action Research Spiral**

(Adapted from Kemmis and Mac Taggart, 1998; also adapted from Bachmann, 2001, p36).

Tutoring is conducted in both Architectural Technology classes and studio classes. A critique pin-up of the students' submissions are conducted so that students can learn from each other. A sample of student output is also included in the appendices. Students have given very positive feedback on this assessment exercise and have felt that they have learned valuable knowledge from it.

## References

- Bachmann, L., 2006.. Review of the Agricultural Knowledge System in Fiji - Opportunities and Limitations of Participatory Methods and Platforms to promote Innovation Development, *Chapter 3 Methodological Framework*. Available online: <<http://edoc.hu-berlin.de/dissertationen/bachmann-lorenz-b-r-2000-12-21/HTML/bachmann-ch3.html>> [Accessed 25th February 2014].
- Kemmis and Mc Taggart, 1998. *The action research planner*, Geelong: Deakin University Press.

## **Appendix 4**

### **Case study - innovative assessment**

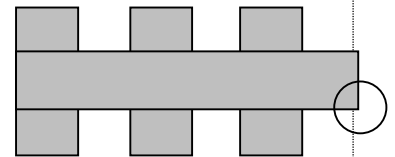
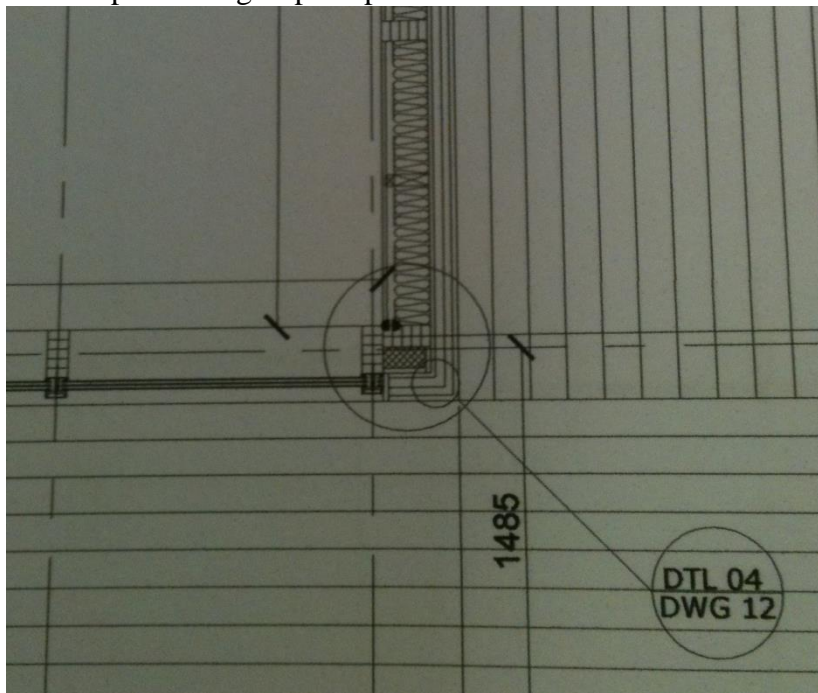
<b>Programme</b>	B.Sc. (Ord) in Architectural Technology			
<b>Module Title / Code</b>	<b>Architectural Technologies and Services 2 (40174)</b> <b>Detailed and Design Studies 2 (40172)</b>			
<b>Lecturer Name</b>	Irene Hayden Denise Dillon	<b>NFQ Level</b>	6	<b>Stage Two</b>
<b>ECTS Credits Project % CA %</b>	<b>(40174)</b> 10 credits – 10% CA out of 30% CA available <b>(40172)</b> 15 credits – 5% CA out of 100% CA available			
<b>Project Title</b>	Group Project	<b>Issue Date:</b>	11.12.2013	

### Project Brief

This exercises' pedagogical approach is designed:

- To practice good communication skills and teamwork
- To strengthen research skills
- To introduce new cladding materials, steel frame and commercial floor systems
- To practice resolving details from first principles
- To reduce CA workload by incorporating joined projects between modules

'Technical design' solutions should be resolved in three dimensions, with wall, window, roof, floor, foundation and frame condition designed together. Please use the on-line forum to indicate preferred groups in pairs.



A corner detail of the second year studio project will be completed, using a steel frame, an aluminium curtain wall and a light-gauge steel stud wall infill behind a cladding system. The roof, in this section of the building, will be a metal deck, with either an intensive or extensive grass roof.

Each pair will be allocated a group number. The table below indicates the materials and construction technologies for each group.

Group	Cladding	First floor system	Detail 1	Detail 2
1	Copper cladding	'comflor' system	Ground floor	First floor
2	Zinc cladding	'slimdek' system	First floor	Intensive green roof
3	Aluminium cladding	'hollowcore' system	Ground floor	First floor
4	Clay cladding	'comflor' system	First floor	Extensive green roof
5	Fibre cement cladding	'slimdek' system	Ground floor	First floor
6	Glass fibre reinforced concrete (GRC)	'hollowcore' system	First floor	Intensive green roof
7	Clay cladding	'comflor' system	Ground floor	First floor

### Submission Requirements

#### Submit:

- A3 research findings
- A3 freehand scaled 1:5 details with 'technical design' progression
- A final set of A3 freehand scaled 1:5 plan and section details
- 2 No. 1:5 detail models
- pdf submission of final set of A3 freehand details on moodle, including photographs of models, using the nomenclature  
AT2 DDS02 Joe Bloggs GROUP PROJECT 29.1.2013.pdf

### Learning Outcomes

*On successful completion of this project, the learner will have met the following learning outcomes from Architectural Technologies & Services 2:*

5. Describe, understand and explain how roof, wall, glazing and floor systems are assembled and erected
8. Analyse new building techniques and systems and be able to assess their performance and suitability for the final building product
9. Have an understanding of how all the different systems come together to form the final product

*On successful completion of this project, the learner will have met the following learning outcomes from Detail and Design Studies 2:*

2. Discuss the detailing and cladding options in framed commercial buildings
3. Understand the use and detailing of materials in the facades of commercial buildings
5. Describe the details of a building such that they demonstrate continuity of insulation and weatherproofing
6. Apply the building regulations to small and medium scale commercial buildings
7. Apply and adapt commercially available product information into project work
8. Describe building elements in two and three dimensions

### Linked Modules

AT2, DDS02.

### Submission Deadlines

**Wednesday 29<sup>th</sup> January 2014**

### Late Submission Penalties

1 Day 10%	2 Days 15%	3 Days 20%	4 Days 30%	5+
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				Pass/Fail
<b>Resources</b>				
<i>Recommended Book Resources</i>				
<p>“Mitchell’s Structure and Fabric, Part 1”, 7<sup>th</sup> Edition, Jack Stroud Foster and Roger Greeno</p> <p>“Mitchell’s Structure and Fabric, Part 2”, 7<sup>th</sup> Edition, Jack Stroud Foster, Raymond Harington and Roger Greeno</p> <p>“Construction Technology”, Roy Chudley and Roger Greeno</p> <p>“Advanced Construction Technology”, Roy Chudley and Roger Greeno</p> <p>“Building Construction Illustrated”, Francis DK Ching</p> <p>“Building Structures Illustrated, Patterns, Systems and Design”, Francis DK Ching, Barry S Onouyne, Douglas Zuberbuhler</p> <p>“Facades Technical Review”, Andrew Watts RIBA press, available in GMIT Electronic Resources</p> <p>“Fundamentals of Building Construction, Materials and Methods”, 5<sup>th</sup> Edition, Edward Allen and Joseph Iano</p> <p>“Glass Construction Manual”, Birkhauser Edition Detail, Desk Reserve in GMIT Library</p> <p>“Facade Construction Manual”, Birkhauser Edition Detail, Desk Reserve in GMIT Library</p> <p>“Roof Construction Manual”, Birkhauser Edition Detail, Desk Reserve in GMIT Library</p> <p>“Timber Construction Manual”, Birkhauser Edition Detail, Desk Reserve in GMIT Library</p> <p>“Flat Roof Construction Manual”, Birkhauser Edition Detail, Ordered for Desk Reserve in GMIT Library</p> <p>“Components and Systems”, Birkhauser Edition Detail</p> <p>“Featuring Steel”, Birkhauser Edition Detail</p> <p>“Building with Steel, Details Principles Examples”, Birkhauser Edition Detail</p> <p>“Architectural Design in Steel”, Peter Trebilcock and Mark Lawson</p> <p>“Architectural Teaching Resource Studio Guide”, 2<sup>nd</sup> Edition, Corus, available in GMIT Electronic Resources</p> <p>“NHBC Standards 2011”, available in GMIT Electronic Resources</p> <p>“House Building Manual”, Homebond</p> <p>“Building Construction Handbook”, 8<sup>th</sup> Edition available in GMIT Electronic Resources</p>				
<i>Electronic Resources</i>				
<p><a href="http://learnonline.gmit.ie/course/view.php?id=141">http://learnonline.gmit.ie/course/view.php?id=141</a> – Other links set up on Moodle</p> <p><a href="http://www.kingspanpanels.ie/ire/index.htm">http://www.kingspanpanels.ie/ire/index.htm</a></p> <p><a href="http://csbluebook.steel-sci.org/Support/Entry.htm">http://csbluebook.steel-sci.org/Support/Entry.htm</a></p> <p>Irish Building Standards, Technical Guidance Documents <a href="http://www.environ.ie/en/TGD/">http://www.environ.ie/en/TGD/</a></p> <p>"Construct Ireland", <a href="http://constructireland.ie">http://constructireland.ie</a></p>				
<i>Other Resources</i>				
<p>“Detail Magazine”, available in GMIT Library Journals Section</p> <p>“Architects Journal”, available in GMIT Library Journals Section</p> <p>“BRE Guides”, available in GMIT Library</p>				
<i>Reflective Practices – Teacher</i>				
<p>Next time, all groups to be allocated a green roof-type (intensive or extensive) in brief.</p> <p>Next time, separate submission date for models, incorporating a weekend (?) to give more time to complete the models and have the 1:5 details critiqued <i>before</i> constructing them.</p> <p>Next time, lecturers to reflect on whether to consider internal finishes (wall, floor, ceiling) and a variety of foundation conditions in the brief as well – inclusion of extra elements for research might be too difficult for weaker students, so need to take a judgment on it with each new cohort of students.</p> <p>Lecturers noted that quieter, introverted students became much more involved, if the group mix was chosen wisely. Groups of two (max) is working for this joined project.</p>				

Next time, clarify that all research should be included in pdf submission, that the min. number of research pages is 6 (to be discussed further) and reiterate that the research needs to be focused to the specific requirements of the project.

Next time, add in the number of photographs of models to include as a minimum all four sides and a top-view photograph with a suitable back drop. Also, students can annotate photographs in publisher, if necessary.

*Reflective Practices – Learner*

Requested more time to complete models.

Not all group participation was equal, but grades are adjusted to reflect this.

## Indicative Marking Scheme

**Module:** Architectural Technologies & Services 2 & Detail & Design Studies  
2

**Project:** Group Project

**Student names:** \_\_\_\_\_ & \_\_\_\_\_

Research	Requirements	Weighting	Submitted	Comments
1. Research Findings	Floor type (Comflor, Slimdek, Hollowcore) Aluminium curtain wall (Cill, head, jamb) Cladding (copper, zinc, aluminium, clay, fibre cement, GRC), support system, light gauge metal stud Flat roof with metal deck, intensive/extensive green roof Steel frame	(20%)		
2. A3 rough pencil overlays for all details	Plan and Sectional Details 1:5 of 'external' corner Interconnectivity; 3-D resolution 2 details (Ground, first floor, roof)	(20%)		
3. Model	1:5 – detailed assembly 2 models (Ground, first floor, roof)	(40%)		
4. Final A3 freehand scaled details	1:5 lineweights, membrane clarity, specification Hardcopy and pdf submission with photos of model	(20%)		
<b>Equal weighting for participation by <i>both</i> students?</b>				
<b>Penalties for late submission(s)?</b>				
<b>Final Grade</b>				

A reasonable submission is required for all four elements to meet the learning outcomes in both modules. **NO GRADE WITHOUT ELECTRONIC SUBMISSION**

**Lecturers:** Irene Hayden, Denise Dillon

**Weighting:** 10% AT&S2, 5% DDS02,

**Lecturer:** \_\_\_\_\_ **Date:** \_\_\_\_\_



**Samples of Student's Output**  
**1:5 Model**



# Samples of Student's Output

## A3 focused research and 1:5 details at pin-up





