Inclusive and consistent assessment of architectural drawings across teaching teams on Architectural Technology courses.
The purpose of this project is to encourage best practice by seeking to **rationalise** the process of how teaching team members **assess** architectural drawings. This is to **mitigate** the influence of **personal subjectivity** and therefore produce more **reliable** and inclusive assessment decisions across the members of teaching teams.

The main scope of this research study encompasses the **level 5 Studio courses of the New Zealand Diploma of Architectural Technology** and to a lesser extent a level 4 drawing course forming part of the same qualification.

**Level 4.**
CIBC 4043 Construction Documentation

**Level 5**
CIBC 5044 Scoping and Preliminary Design. *(Developed Design)*

CIBC 5045 Documentation for Small Buildings. *(Detailed Design)*
• **Reflective analysis.** Based on author experience of teaching drawing based papers since 1992

• **Literature review**- Text books, Government publications, published papers

• **Action Research**- Communications and discussions with Unitec teaching colleagues in moderation meetings and on studio course teaching teams. Participation at National Moderation events for Architectural Technology Diploma over the last four years.
Aims and Objectives

• to promote **consistent assessment** of architectural drawings within teaching teams

• to develop an **inclusive, clear** approach for all involved including students whereby tutors will follow an **agreed format** and evaluate the **same criteria** for each drawing submitted in terms of **content** and **draughtsmanship**

• to produce more **consistent assessment decisions** across tutors teaching different cohorts taking the same course.

• to provide a more **structured and organised** approach to drawing assessment

• to **reduce** the possibility of student **complaints** regarding apparently inconsistent results

• to **allay** potential allegations of **different tutors** appearing **more demanding** in their assessment than their colleagues.

• Help **clarify** to students **what is expected** of them and **how** it is being **assessed**.
Main themes identified from relevant literature discovered.

1. What is the intended purpose of the drawings?
2. What content should they contain?
3. What qualities are required from the drawings?
4. How should drawings be organised?
5. Drawing techniques – Draftsmanship
6. How can we assess the drawings and under what criteria?
What is the intended purpose of the drawings?

What are the drawings supposed to do? Why do they even exist?

*Leibing 2009*

Knowledge of details and understanding how parts are assembled

Details—graphically depict an assembly of materials connected to one another. Details as contract documents

Those who are actually building are not concerned with the method used to prepare details but rather that information is correctly and accurately conveyed.

*Linde, R. Wakita). 1999*

Presentation drawings should communicate as clearly as possible the three dimensional qualities of a design

drawings need to be comprehensible and persuasive, conventions understood, substance meaningful

use only what is necessary to communicate an idea Any graphic elements of a presentation that are distracting can obscure the intent and purpose

Be articulate, no unintended distractions.

no distorted or inaccurate information.

*Ching 2015*
What is the purpose of the drawings?

Presentation drawings - "describe a design proposal in a graphic manner intended to persuade an audience of its value."

Construction drawings - intended to inform the builder about the implementation or realization of a design.
What are the qualities required from the drawings?

The 4 Cs
1. Clear
2. Concise
3. Complete
4. Care

accurate and complete

the architect wants the drawing to be eye catching, highly readable and well executed.

Emphasis for high communication value

easy and better understanding of those drawings in a shorter period of time.

Knowledge of details and understanding of how parts are assembled

Linde, R. Wakita, O 1999

drawings should be clear and unambiguous, not contradict each other or supporting documents or separate disciplines drawings

Spec notes should be clear, concise and complete


clear, correct, complete, suitable level of detail. Conform to AS/NZS 1100 Building performance. MBIE NZ 2016

represent project extent and content by defining scope of work to be done

clear, concise, neat, legible, logical sequence, consistency between drwgs and specs, coordinate with other discipline drawings, dims and to scale

BRANZ Weathertight 2019
How should drawings be organized?

**LACS system** used to demonstrate and teach students basic method of **organising** a set of drawings. Method maps well onto the **Documentation** course learning outcomes.

Referencing and **interrelationship** of drawings

Means of recording revisions, version control.

**Interrelationship** of various drawings

*Linde, R. Wakita, O 1999*

**UNITY - no one segment is inconsistent or detracts** from the whole.

**Logical and comprehensive** arrangement

**synthesis** of format, scale, medium and technique

*Ching, Francis. 2015*

**Uniformity** necessary in a set of drawings and overall presentation

the creation of the **nitty gritty working drawings**

*Leibing 2009*

All drawings should contain an appropriate **number** following a **logical sequence**.

notes should be **easy** to follow, **logical sequence**, **free** from **repetitive** or **irrelevant** information.

*BCA dashboard, http://gocouncil.nz 2019*
Vast flexibility in presenting information

The requisite information needs a mode of expression that is provided by the associated and commensurate drafting skill.

Wide variety in the need, type, style, production and depiction.

drawings from other disciplines can be bland, little if any lineweight variation but nonetheless accurate and informative

how well the drafting work is done, how well the work communicates the necessary information and what exactly is being required

*Leibing 2009*
“Sometimes contractors will do exactly what is on the drawing, even cut a revision cloud. I received this from a good friend and spit coffee on my LCD.

Update: Here is another picture I received showing someone took the callout leader and balloon far too literal.”
Drawing techniques / Draftsmanship.

Placement of notes in relationship to details, uniformity of fonts

The knowledge of how to display information properly is the architectural communicative knowledge that every CAD operator must possess.

The knowledge of how to display information properly is the architectural communicative knowledge that every CAD operator must possess.

Wide variety in the need, type, style, production and depiction.

Details should be able to stand on their own and not share notes.

Try not to interrupt or cross dimension lines.

Do not run leaders across details.

Linde, R. Wakita, O. 1999

Orientate plans in a similar manner

Ching, Francs, 2015

Some councils have requirements over size form and scale of drawings, also for line types, thicknesses and/or fonts

DBH. New Zealand 2010

The knowledge of how to display information properly is the architectural communicative knowledge that every CAD operator must possess.

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Linde, R. Wakita, O. 1999
What content should they contain?

Lost track of both the intent and the content of the drawings.

What should be shown on the drawings, how should the individual drawings be done?”

Regional needs and considerations are reflected in the drawings.

Architects involved in quality work find that there is never enough information on a set of drawings nor enough details drawn. Linde, R. Wakita). 1999

drawings should have number, follow logical sequence, title, designers and owners name, project address, dated for version control.

Elevations sections and details etc to be labelled, cross referenced and back referenced.

Specification information, dimensions, construction, materials, product names, workmanship.

How can we assess architectural drawings?

- applying some simple evaluations-
  - overall readability,
  - use of varied lineweights,
  - appropriate notations,
  - ease of understanding the intent and the solution,

- is there too much shown as to be confusing?

Leibing, R. 2009

Leibing, R. 2009

Scoping and Preliminary Design, New Zealand Diploma in Architectural Technology, 2019

Documentation for Small Buildings

Achieving Reliable and Consistent Assessment of Architectural Drawings

Literature review

Nov. 2019

themes
Achieving Reliable and Consistent Assessment of Architectural Drawings

### Drawing conventions etc taught

- Developed Design drawings produced
- Detailed Design drawings produced
- Construction knowledge informing Detailed Design

#### Construction Documentation

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Task</th>
<th>Objective</th>
<th>Assessment</th>
<th>Exercise</th>
<th>Learning Outcomes</th>
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<td>1</td>
<td>1</td>
<td>Introduction</td>
<td>Course introduction and software overview - Submission method - TUTORIAL</td>
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<td>Site design and operation - ARC/CAO TRAINING</td>
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<td>Design Process and Preparing Design - ARC/CAO TRAINING</td>
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<td>Construction project brief - ARC/CAO TRAINING</td>
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<td>No class, Kohyuga Project handout</td>
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<td>9</td>
<td>Major Project Introduction</td>
<td>Coordinate design with BIM and Contractual requirements</td>
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<td>Major Project Plans</td>
<td>Semester 2, Mid Semester break</td>
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<td>Major Project Elevations Details</td>
<td>Scoping and Preliminary Design - Developed Design. - Developed Design. Rendered view</td>
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<td>Major Project Components</td>
<td>Developed Design. Exporting model to BIM, and generating views through Envision</td>
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<td>Acknowledging Material</td>
<td>Published drawings showing Site plan, Floor plan, Elevations, Sections, and an Elevation</td>
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<td>15</td>
<td>Arch/BIM intro</td>
<td>Reflection on Evaluation section feedback</td>
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<td>Progress BIM house model based on feedback and example standards work in establish satisfactory output of models and drawing</td>
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<td>Arch/BIM intro</td>
<td>Final Submissions of drawing</td>
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</tbody>
</table>

#### Scoping and Preliminary Design

- Developed Design - Site Modelling and Preparing Design
- Developed Design - Rendered View
- Developed Design - Exporting Model to BIM and Generating Views through Envision
- Published Drawings showing Site Plan, Floor Plan, Elevations, Sections, and an Elevation
- Reflection on Evaluation Section Feedback
- Progress BIM House Model Based on Feedback and Example Standards Work in Establish Satisfactory Output of Models and Drawings
- Final Submissions of Drawing

#### Documentation for Small Buildings

- CONTENT SUMMARY
- Course introduction and software overview, focus building template
- Site plans - types, context for documentation
- Site plans - BIM Section with Architectural
- Elevations - Floor Plans
- Floor Plans - Timber Slab Floor or Concrete Slab
- Foundation Plans - Timber Slab Floor or Concrete Slab
- Roof Framing and/ or Roof Plan
- Section for Documentation
- Accessing Design Identifiers
- Accessing Details - Completion
- Interim submittals and drawing evaluation sessions
- Construction for Small Buildings
- 2019 TEK
- LEARNING OUTCOMES
- Identify geotechnical factors and substructures
- Describe building types and structure
- Describe building enclosure material selection and design
- Discuss interior linings, joinery and fittings
5044- Scoping and Preliminary Design. Level 5.
Achieving Reliable and Consistent Assessment of Architectural Drawings

5045- Documentation for Small Buildings. Level 5

Drawing types and related Unitec courses

Nov. 2019

17
Learning outcomes for the courses studied in this research.

**5044 Scoping and Preliminary Design.**

On successful completion of this course the student will be able to:

1. Distinguish and explore site requirements
2. Identify site opportunities and constraints
3. Prepare a construction project brief
4. Develop and present a preliminary architectural design from a construction brief.

**5045 Documentation for Small Buildings.**

On successful completion of this course the student will be able to:

1. Identify and prepare location drawings
2. Analyse and prepare assembly drawings
3. Explore and prepare component drawings
4. Interpret and prepare schedules for small buildings.
How can we assess architectural drawings?

ASSESSMENT: Preliminary Architectural Design
Production of Developed Design Drawings

Course: CBC 5044 Scoping and Preliminary Design

Tasks PDI-1: Assessment name: Production of BIM outputs including Printed Developed Design drawing set for dwelling located on a nominated control site in Auckland.


Weighting: 60%

Scoping and Preliminary Design

INSTRUCTIONS:

You have been given sketch proposals with dimensions of a house to be located on a specific site. Details of which will be provided. You are to produce a drawing set, and digital media to enable site to assess and evaluate the dwelling design which will reflect functional and environmental performance such as Building Information Modelling.

The tasks core refer to individual printed / published drawing types and various digital file necessary. Page set up to be typically 1:100 or A0 but these will be verified by the course team and tutors.

POD1: House floor plans and landscaped site plan.

POD2: FOUR elevations of the house with outline fixtures and fittings, structure, landscaping etc.

POD3: TWO design windows including outline people and furniture.

POD4: D3D drawing sitemap, if at least one but more can be provided.

POD5: ONE D3D plan (at least one but more can be provided).

POD6: D3D drawing sitemap, if at least one but more can be provided and this is to be used as a reference to this document.

POD7: D3D drawing sitemap, if at least one but more can be provided and this is to be used as a reference to this document.

POD7: Digital IFC file, ArchiCAD Model file, and PDF set of all drawings above to be uploaded to relevant Dropbox on Moodle.

Submission and Grading

THERE IS NO LATE SUBMISSION OF THIS ASSIGNMENT. ANY LATE SUBMISSIONS MUST BE ACCOMPANYED BY A SPECIAL CIRCUMSTANCES FORMS AS DESCRIBED BELOW.

Scoping and Preliminary Design

Documentation for Small Buildings

What is being assessed and How is it being assessed?

1. Site and Town Planning drawing
2. House floor plan – Ground Floor only
3. Two elevation views of the house to include items such as HRR rules and window references. Refer to checklist. Views nominated by tutors and students advised.
4. Fixtures and finishes schedule and located in selected internal rooms which are: Bedroom, Bathroom, Kitchen, Living room and Garage.
5. Full floor/level/ internal view drawing with sizes aligned with floor plan references / notes.
6. Component drawing showing elevations of all windows and doors.
7. Upper and lower roof framing Plans. Roof plan showing claddings and flashings.
8. Mid Floor framing Plan
9. Timber Sub Floor framing plan
10. Concrete slab on ground plan

LABOUR DAY PUBLIC HOLIDAY

INTERIM SUMMATIVE SUBMISSION

ONE fully complete Construction section with selected details referenced. Locating sections required to show: details asked for items 12 and 13 below.

1. 2 Nest Manual Sketch detail drawings prepared from templates and drawn to a high level of presentation. Rough sketches prepared to show evidence of detail resolution and analysis of functional requirements which are to be listed in a table.

2. Details REQUIRED TO BE ADVISED

3. Assembly Details Preparation, location and reference. DETAILS REQUIRED TO BE ADVISED

Digital files

Digital IFC file, ArchiCAD Model file, and PDF set of all drawings above to be uploaded to relevant Dropbox on Moodle.

INT

Individual student interviews with different stream to verify that work is genuine and verify knowledge of construction competency and NZS3604.

Student Interviews - guidance notes and advice

- These are an integral and vital part of the documentation for Small Buildings course assessment process.
- All students must make themselves available for attendance at each interview which will be arranged for individual time slots on Wednesday 20th November 2019.
- The interview schedule will be published on Moodle close to the date detailing running orders, individual attendance times and the assessment staff for each interview.
- Students must gain a pass mark of 50% in this interview as in the other assessments to permit them to successfully complete and pass the course overall. If you do not demonstrate that the work submitted is genuinely yours or fail to convince the interviewers of the construction knowledge behind the drawings, then you will fail the course no matter how good the drawing set may appear.
Achieving Reliable and Consistent Assessment of Architectural Drawings

What is being assessed and How is it being assessed?

Figures summarise findings of report by BRANZ entitled “Consent documentation quality for new housing”

Slides from a BRANZ survey collaboration included in a 2016 report.
5.1 Site plan

The purpose of a site plan is to show the location of the proposed building work on the site in relation to adjoining properties.

Additional information
- Drawings may be combined.
- Cross-sections may be continued on the same sheet.
- The drawing criteria, especially for details, are shown in their relative position to one- accompanying cross-section.

Table notes
- Cross-sections may be continued on the same sheet.
- Cross-sections must show all vertical relationships of openings and the like.

DBH. New Zealand. 2010

5.5 Floor plans

Floor plans provide details of room types and sizes, the layout and location of external and internal elements, and the location of all fixtures and fittings.

Additional information
- Floor plans are combined.
- Cross-sections are continued on the same sheet.
- Cross-sections must show all vertical relationships of openings and the like.

Table notes
- Cross-sections may be continued on the same sheet.
- Cross-sections must show all vertical relationships of openings and the like.

DBH. New Zealand. 2010

5.6 Exterior elevations

Exterior elevations show the overall shape, form and size of the proposed building in relation to any adjoining boundaries.

Additional information
- Exterior elevations are continued on the same sheet.
- Cross-sections must show all vertical relationships of openings and the like.

Table notes
- Cross-sections may be continued on the same sheet.
- Cross-sections must show all vertical relationships of openings and the like.

DBH. New Zealand. 2010
What is being assessed and
How is it being assessed?
• UNITEC checklist samples 5044
• UNITEC checklist samples 5045

**FLOOR PLANS CHECKLIST**

- Walls drawn and hatched either with a solid fill or heavy outlines to clearly show these are cut elements in plan.
- All stair information, namely tread numbers, flights with arrows indicating up.
- All Doors and Window shown.
- Built-in fittings.
- Floor finishes – symbolized for example with lines for timber floors, tiles in wet areas. Don’t overdo things though and maintain drawing clarity.
- Room Names and notes.
- Loose furniture such as Beds, tables, chairs etc.
- Some overall dimensions only which should in total be about 3-4 dimensions if even that many.

**SITE AND TOWN PLANNING CHECKLIST**

A drawing showing the plan layout of the main elements of the subfloor structure.
- Floor joist layout drawn and sized with double joists noted.
- Reaches to downstand noted with layout dimensional.
- Rises drawn and noted with layout dimensional.
- Footings drawn can be noted and noted.
- Nets different finish treatments between house and deck framing.
- Show all appropriate ceiling for ideal support.
- Show stairwells and note size and finishes.
- Show and note any additional support under loadbearing or bearing walls over and for any specific point loads.
- Cross section references.
- Detail references.

- All the above to be shown if a suspended timber deck is included.
- Details title and scale.
- Schedule title.

**SUBFLOOR FRAMING PLAN CHECKLIST**

A drawing showing a plan layout of the main elements in a building including walls, windows, doors, and fixtures and fittings.
- Walls drawn and hatched appropriately (may vary with affection drawings).
- Windows and doors drawn with opening sizes shown and references provided.
- All walls located dimensionally, and external windows and doors located relative to adjacent walls.
- Lines sized and noted including timber structures.
- All spaces named including storage (st), wardrobes (wr.), and wods.
- Plumbing fittings shown and noted.
- Any built-in fittings shown and noted (don’t show furniture).
- Kitchen cabinetry shown and significant appliances such as fridge, cook tops and sink shown and noted.
- stairs shown with direction of travel, risers numbered, handrails drawn, going and riser sizes.
- F.L.F’s provided at all levels (includes doors and entry stairs if provided).
- Decks and steps drawn and noted.
- PJG’s (stair) shown and noted (dotted outline if above level).
- Any beams over or below drift and noted.
- Cross references for sections and details if applicable (eg, corner details).
- Show drainage locations and note.
- General notes (applicable to the entire drawing).
- Drawing title and scale.
- Title block.

Possible other items which may be relevant.
- Show floor finishes if part of construction (eg, floor details).
- Strap general construction passway noted.
- Significant electrical elements such as meter board, distribution board, not water cylinder shown and noted.
Plan drawing supplied to a local builder.

- How was this drawing intended to be viewed?
- On printed page or perhaps digitally on a computer or phone/tablet?
- How do viewing methods affect clarity and communication?
- Does extracting the information from a drawing like this involve unreasonable effort?
Developed Design drawings for CIBC 5044 Scoping and Preliminary Design

MAJOR PROJECT HOUSE

DEVELOPED DESIGN DRAWINGS FOR A THREE-BEDROOM HOUSE

ADDRESS
2A SEAVIEW TERRACE, MOUNT ALBERT, AUCKLAND

LEGAL DETAILS
LOT 2, DP 30194, CT NA41D/348

PROPERTY SIZE
841 m²

ZONE
RESIDENTIAL - MIXED HOUSING URBAN

DRAWING SHEET INDEX

1  SITE PLAN  1:100
2  GROUND FLOOR PLAN  1:100
3  FIRST FLOOR PLAN  1:100
4  SECTIONS  1:100
5  NORTH & EAST ELEVATIONS  1:100
6  SOUTH & WEST ELEVATIONS  1:100
7  EXTERNAL PERSPECTIVES  NTS
8  3D FLOOR PLANS  NTS
9  3D SECTIONS  NTS
10  LIVING AREA PERSPECTIVES  NTS

• Which drawings if any on the list should have more emphasis that some others?
• How do we choose?
• The effort required to generate or prepare?
• The most important in communicating the design proposal to the client?
Detailed Design drawings for CIBC 5045. Documentation for Small Buildings

Which drawings if any on the list should have more emphasis than some others?

How do we choose?

The effort required to generate or prepare?

The most important in communicating the construction information to the numerous parties involved.
Development and evolution of marking rubrics for Documentation courses at Unitec.

**ELEMENT 1: Prepare location drawings**

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<th>Performance Criteria</th>
<th>Comments</th>
<th>C</th>
<th>NYC</th>
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<td>Drawings to council consent level, in sequence as required for construction, use appropriate symbols and scale</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cover sheet</td>
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<td>Site plan and site plan</td>
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<td>Site and drainage plan</td>
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<td>Lower level floor plan</td>
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<tr>
<td>Elevations (as required)</td>
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<td>Foundation and subfloor framing plan</td>
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<td>Mid-floor floor framing plan</td>
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<td>Roof framing plan</td>
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<td>Roof plan</td>
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<td>Lead section</td>
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**CAD DRAWING SET:**

**ELEMENT 1: Prepare location drawings**

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**2009**

26

**2013**

**Marking Rubrics**

November 2019
Development and evolution of marking rubrics for Documentation courses at Unitec.

### Marking Schedule – CBC5045 2017: Documentation for Small Buildings

#### Major Project House submission

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<th>Date:</th>
<th>Student</th>
<th>Assessor</th>
<th>Possible</th>
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#### Marking Rubrics

- **Development and evolution of marking rubrics for Documentation courses at Unitec.**
- **2017**
- **27**

#### Assessor's Marking Criteria

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<tr>
<td>- Linear, well-defined, clear, and neat</td>
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<tr>
<td>- Proper use of scales and measurements</td>
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<tr>
<td>- Correct use of dimension lines and scales</td>
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<td>- Legible, easy to read</td>
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<tr>
<td>- Accurate and consistent</td>
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<tr>
<td>- Use of standard symbols</td>
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<tr>
<td>- Overall presentation is clear and professional</td>
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<tr>
<td><strong>Design and Analysis</strong></td>
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<tr>
<td>- Demonstrates an understanding of the design principles</td>
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<td>- Analyzes and evaluates design elements</td>
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<td>- Identifies areas for improvement</td>
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<tr>
<td>- Provides constructive feedback</td>
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</table>

#### Total Mark

- **Grade book mark**
- **100**

---

2017

Achieving Reliable and Consistent Assessment of Architectural Drawings

Marking Rubrics

Nov. 2019
How can we assess architectural drawings?

**WHAT**
- Drawing checklists
- Knowledge
- Suitable / appropriate content
- Correct and meaningful content
- Accurate
- Concise
- Complete

**HOW**
- Drafting guidance
- Graphical depiction
- Comprehensible
- Easy to understand
- Eye catching
- Legible
- Neat
- Well executed
- Logical sequence

**CONTENT**
- Unambiguous
- Information accurately communicated
- Clear communication
- Articulate
- Consistent
- Care
- Uniform
- Organised

**DRAFTSMANSHIP**
- What is being assessed and
- How is it being assessed?

Achieving Reliable and Consistent Assessment of Architectural Drawings Nov. 2019
How can we assess architectural drawings?

What is being assessed and

How is it being assessed?

SITE AND TOWNPLANNING CHECKLIST

A drawing showing the entire site including information relevant to town planning, a schedule of planning controls, and associated calculations

- Site outline including boundary, boundary lengths and bearings
- Building outline (footprint) - noted and with FFL's
- Roof outline dotted and noted
- Any roof overhangs greater than 1.0m. noted
- Upper level floor overhangs dotted and noted
- Driveways, parking and noted
- Ground floor decks and steps drawn and noted
- Paths, paved terraces and any other impermeable surfaces drawn and noted
- Any significant changes in site levels that require steps
- Topographical contours and existing spot levels (if necessary)
- New formed levels set as RL's
- Landscaped permeable areas noted (e.g. driveway, paths etc.)
- Legal description of the property including DP, CT, Lot No., address, site area
- Planning controls that can be shown on a site plan including:
  - building coverage, impermeable coverage etc. (depending on councils)
  - yards
  - critical height in relation to boundary points on the boundary's and relevant RL's
  - vehicle manoeuvring (only if relevant)
- Any specific controls of the council
- Schedule of controls and compliance
- Calculations confirming compliance or infringement
- Drawing title and scale
- Schedule title
- Title block

Possible other items which may be relevant.

- Upper level decks extending beyond the building footprint dotted and noted
- Ancillary buildings (such as garages, sleep-outs, workshops etc.) drawn and noted
- Significant trees and their canopy spread located and noted
- Any legal covenants shown such as easements and ROW's (rights of way)
How can we assess architectural drawings?.

<table>
<thead>
<tr>
<th>MARKING GUIDANCE</th>
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</thead>
<tbody>
<tr>
<td>CONTENT</td>
</tr>
<tr>
<td>How comprehensively the drawings address checklist items.</td>
</tr>
<tr>
<td>PROFESSIONAL JUDGEMENT</td>
</tr>
<tr>
<td>DRAFTSMANSHIP</td>
</tr>
<tr>
<td>1. Lineweights and types</td>
</tr>
<tr>
<td>2. Drawing layouts</td>
</tr>
<tr>
<td>3. Clashes extent of and control</td>
</tr>
<tr>
<td>4. Font sizes, choice and consistency</td>
</tr>
<tr>
<td>5. Hatch/fill types appropriate,</td>
</tr>
</tbody>
</table>

What is being assessed and How is it being assessed?

Achieving Reliable and Consistent Assessment of Architectural Drawings

Nov. 2019 30
How can we assess architectural drawings?

CONTENT

DRAFTSMANSHIP

SECTIONS CHECKLIST

A drawing showing cut-away views of the building:

- All floor level lines dashed and FFL’s given for each floor
- All elements beyond cut shown in elevation
- Ground lines drawn where the building cuts the ground
- Foundation, floor, walls, and roof where cut
- Insulation shown
- All construction systems noted
- Floor pitches indicated
- Vertical dimensions given including wall heights, floor to floors, window and door heads plus eaves overhangs
- Any appropriate details referenced
- Spacing labeled
- Appropriate hatchings for cut solid objects
- Appropriate line weights
- Appropriate sheet layout
- Drawing title and scale
- Title block

Possible other items which may be relevant:

- Final floor plan drawn and labeled with building elements noted
- Details drawn and labeled with building elements noted
- All necessary structural details are shown and noted
- All walls drawn and labeled appropriately any notes with allocation drawings
- Window and door systems shown with swing direction and notes provided
- All walls having an orientation, and external windows and doors located relative to each other
- All areas having including interior switch centers
- All rooms shown including storage (i.e., bathrooms) and notes
- All rooms shown having location on floor plan

FLOOR PLAN CHECKLIST

A drawing showing a plan layout of the main elements in including walls, windows, doors, and fixtures, as well as fittings:

- Walls drawn and labeled appropriately any notes with allocation drawings
- Windows and doors shown with swing directions and notes provided
- All walls having an orientation, and external windows and doors located relative to each other
- All areas having including interior switch centers
- All rooms shown including storage (i.e., bathrooms) and notes
- All rooms shown having location on floor plan
- All rooms shown having location on floor plan

MARKING GUIDANCE

CONTENT
- how comprehensively the drawings address checklist items

PROFESSIONAL JUDGEMENT - Tutor’s feeling for the overall quality drawing set submitted.

DRAFTSMANSHIP
1. Lineweights and types
2. Drawing layouts
3. Clashes extent of and control
4. Font sizes, choice and consistency
5. Hatch/ fill type appropriate

What is being assessed and How is it being assessed?
• Identifying errors and omissions on drawings is not onerous if all we do is mark up the drawings highlighting the mistakes.

• Describing these with notes however can frequently be a very time-consuming exercise, depending on the particular defect or omission discovered.

• In addition, the work can often appear to be abortive.
• What possible methods may be used to speed up the process for the tutor assessing whilst allowing a satisfactory degree of individual feedback.

• Oral feedback can be used in addition time permitting.

• On the right is a template of common drawing defects noted during assessment of Documentation drawings.
Achieving Reliable and Consistent Assessment of Architectural Drawings

Feedback factors

<table>
<thead>
<tr>
<th>Drafting defect reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>Lack of line weight differences and contrast</td>
</tr>
<tr>
<td>D2</td>
<td>Lineweights are too heavy</td>
</tr>
<tr>
<td>D3</td>
<td>Lineweights are too light</td>
</tr>
<tr>
<td>D4</td>
<td>Prints are of poor quality</td>
</tr>
<tr>
<td>D5</td>
<td>Overall sheet lacks care and appears untidy</td>
</tr>
<tr>
<td>D6</td>
<td>Lettering is untidy and careless. Takes away from overall sheet</td>
</tr>
<tr>
<td>D7</td>
<td>Referencing missing or only works one way instead of two way</td>
</tr>
<tr>
<td>D8</td>
<td>Two way referencing does not work or only from location drawing</td>
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<tr>
<td>D9</td>
<td>Display order</td>
</tr>
<tr>
<td>D10</td>
<td>Clash</td>
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<tr>
<td>D11</td>
<td>Lettering is too small or large</td>
</tr>
<tr>
<td>D12</td>
<td>Drawing error</td>
</tr>
</tbody>
</table>
Benchmarking the assessment of drawings across all the courses.

It will help set out the criteria for discussion and focus on how these are assessed.

Should make benchmarking easier as qualities expected in draftsmanship are clearly defined.

Checklists comprehensively list typical and appropriate content expected in each drawing.

System is a way of producing justification for assessment decisions based on consistent and uniform method of reviewing evidence.
• How can we verify the drawings have been done by the student submitting?

• Purpose of drawings requested in the 5045 assessment is not just to check if students can produce a nice drawing set.

• Drawing set is a graphical means of the students communicating their knowledge of construction.

• Elements could not have been modelled or drawn without being designed and therefore students should be able to talk about and explain their proposals depicted in their drawings.

• Interview used for CIBC 5045
Watchpoints for future identification, observation analysis and reflection.

- Analyse not just the weightings across drawings in the set but think also about the individual weighting related to the specific drawing. Should content outweigh drafting for certain drawings and vice versa?
  
  Eg. How much of the drafting skill is carried out by the software package?

- Discuss and agree within team members the drafting errors to be identified and what form these will take. Also try and establish when drafting inadequacy is so bad that it compromises content and results in a failed drawing.

- Team members should, especially if a new group set time aside to mark at least one set of drawings together to ensure tutors are looking through the same lens and calibrated to the same standards. There may be more than one way of students addressing a learning outcome in their set and this may not be immediately obvious.

- Make exemplar drawings and others with issues available to tutors especially if new to the course team.
Watchpoints for future identification, observation analysis and reflection.

- Consider development of a feedback comment table to enable student feedback in a less onerous and time consuming way.

- Discuss and agree appropriate individual drawing content. Marks reduced if unsuitable or distracts from intent?

- Establish the skills need to import industry drawings and revise where applicable. Agree marking method with colleagues. How much drafting skill is needed? Eg are lineweights already good?

- Use a professional judgement mark moderator in your rubric. Numbers and statistics are not infallible.
THE END

Any questions or comments welcome!