

## HOUSING AND DESIGN (HDS315118)

### EXAMINATION ASSESSMENT REPORT

Candidates did seem to find this year's exam quite challenging, more so in Section B. Several points are made below, but all Markers marked to the guidelines set by the exam question. An underlying imperative in all the questions were to draw plans to scale and questions 1, 2 and 3 required section drawings also to scale. Many candidates were marked down due to failing to meet these essential requirements, often doing sketches instead of carefully drawn layouts using a set square or ruler. Many also used single lines as opposed to double lines to indicate wall thickness, but this may have been a minor penalty. Many candidates failed to draw section drawings to standard, often providing a sketch of one element rather than across a section of the building.

### SECTION I

#### QUESTION 1 – Tropical Climate – Design of accommodation in the Kimberleys

Examiners were looking for opportunities for cross ventilation and sufficient shading of the external walls. The cross ventilation could be achieved in either an east/west or north/south as long as the rationale was evident and how they dealt with a longer wall to expose orientation. The placement of the windows and doors facilitated sufficient or possible cross flow, as some responses did not appreciate the barrier of internal walls or joinery that may prevent cross ventilation. Some of the better responses included low partitions walls or louvres at the top of walls to allow air through. In addition, the use of vents in the floor and ceiling to promote hot air rising out of the building envelope. The elevation of the building also assisted in promoting cross ventilation and removing the build-up of hot air underneath the house. Less successful responses typically showed no eaves, large openings to the west, generally with a bedroom located there. Alternatively, they had very few openings which did not align for cross ventilation. For some students they felt the need to enclose the bathroom, which would mean it was significantly hotter than the rest of the house. Other students mentioned the need to receive sufficient sunlight to heat the spaces and seemed to be muddled by the hot/humid climate – mixing in temperate solutions such as north facing, pergola,

deciduous trees, bulk insulation, and insulated floor cavities. Some were distracted in the question by function and the position of the driveway to assist in orientating the building over the need for capturing the prevailing winds.

Overall responses to the question did not indicate how the limestone walls would impact on the thermal performance of the building. In addition, students took liberty with the re-use of existing materials (limestone block, windows and doors) and chose their own.

As past examiners we generally thought the quality of drawing has improved and the annotations explaining the rationale, however at the lower end of responses these were still problematic. The plan drawings were largely to scale but the sections were typically a sketch rather than a scaled drawing. There were particular inconsistencies in showing the eaves or the roof in a plan coupled with the eaves in the section.

## QUESTION 2 – Cool Temperate Climate Extension on Heritage Listed Home

*There were 124 responses to this question.*

Judging by the standard of responses, many found this question challenging. Even with the information sheet, many students could simply recall information they had memorised but struggled to apply and synthesise their knowledge in a creative response to the design problem.

In addressing the first of the four aims, stronger responses zoned the existing building with at least 2 bedrooms and a bathroom, using the existing windows for good effect. Weaker responses mixed public and private areas, removing walls and making new windows.

For aim 2 – Stronger responses placed the extension away from the overshadowing effect of the neighbouring building. Some used a glass walkway to join the extension to the existing home, providing light for the cherry tree and zoning the living areas to get maximum sunlight. Weaker responses designed their building by simply extending the existing Georgian roofline and height - this resulted in a poorly functioning solution in terms of access to sunlight which was restricted by the over shadowing by the neighbouring double story building.

Stronger responses captured the existing sunlight by using higher ceiling levels, skillion roofs, clerestory windows and skylights in a contemporary building style that contrasted the existing Georgian building.

Stronger responses also used materials that had high thermal mass such as reverse brick veneer, Trombe walls and polished concrete flooring and understood its effect as storing thermal energy. Weaker responses stated many of the relevant PSD principles but had little idea how to capture the sunlight, so these principles could be used.

For aim 3 -Weaker responses didn't use much of the available extension space of 70m<sup>2</sup>. No students went over the limit as it was not difficult to fit all of the required rooms in the available space. Stronger responses made the most of the available extension space, creating an open, bright living space.

For aim 4, weaker responses didn't know how to deal with the cherry tree that had to feature in the extension. Some removed or relocated it, others placed it inside their extension without adequate access to light or soil. Stronger responses used openings in their building to provide sunlight and views of the Historic cherry tree, often incorporating an internal courtyard.

## AWARD OUTCOMES

	Q1	Q2
	tropical	cool temperate
a+	0	0
a	2	1
a-	1	2
b+	2	7
b	6	8
b-	11	8
c+	8	11
c	21	25
c-	22	28
d+	20	8
d	32	23
d-	14	2
z		1
	139	124

## SECTION B

### QUESTION 3 – Water Tank Guest House Conversion

*(158 Students responded to this question)*

#### GENERAL COMMENT

Overall, responses were poor.

The circular nature of the brief led to design difficulties resulting in odd shaped furniture and fittings (especially bathroom and kitchen fixtures), odd junctions of walls, misshapen beds/couches/tables etc. Accuracy and use of scale were poor overall. Response asked for scale 1:50 – many candidates did hand drawn sketches rather than scale drawings.

#### WEAKER RESPONSES

- Included more than one window/entrance door
- Missed the courtyard or drew to incorrect shape/size
- Did not consider courtyard as light source for internal rooms
- Privacy screens/walls/curtains/positioning of bed poorly considered
- Irrelevant information, i.e. relating to another criterion or not needed for this response

#### STRONGER RESPONSES

- Used scale/shape accurately
- Stipulated how light would be transferred into all spaces
- Used creativity, e.g. clerestory windows from courtyard, glass walls, frosted glass...
- Used door/s as light source (i.e. glass door), used round shape to dictate fittings (i.e. kitchen benches and/or furniture)
- Clear distinction of public/private spaces
- Appropriate storage e.g. hanging space
- Purpose as short stay accommodation well considered
- Included skylights

Students should read the question carefully. If a question asks for a response to be **drawn**, then it is expected that drawing instruments such as scale rulers, sets squares and a compass are used to create ruled lines that are accurate to scale. A high number of responses were **sketches** and were not drawn to the level of accuracy required.

#### QUESTION 4: Glass House Round Bathroom – Universal Design Fit-Out

Much like question 3, the parameters of this question did challenge most candidates creatively. The brief of this question was to provide recommendations to fit out the bathroom to universal design standards allowing universal access. The design requested the inclusion of a shower, toilet and basin and the appropriate support infrastructure.

Apart from providing a response to the needs, the candidates were also challenged by the door configuration as an inward opening door did impact upon available circulation space required for a wheelchair bound person. There were no “A’s” awarded, however students rated above C+ provided positive responses that displayed the following;

Good circulation allowing appropriate transfer space for a wheel-chair bound person onto the toilet and into the shower area.

The shower area met the minimum sizes of 1160 X 1100mm as indicated on the information sheet provided, allowing good access. The use of curtains as opposed to solid partitions also allowed for shared circulation zones to occur, which is an appropriate solution when space is limited.

Scale and proportions were used well, and drawings were created to a good standard of accuracy. Sizing of toilets, vanity units, basin leg clearance, wall clearances and heights of toilets and positioning of shower tapware, and showerheads and shower benches were appropriate.

This information was also supported by well-drawn section drawings that ideally displayed shower heads on a sliding rail, appropriate knee clearance under the basin and appropriate heights and position of grab rails. Grab rails were placed in appropriate positions to allow support of side or front transfer to the toilet and shower seat.

Visualisation and indication of appropriately placed drainage was also a feature for some better responses, along with descriptions of non-slip flooring, but appropriate for wheelchairs, ventilation as it was an internal bathroom and reinforcement within the walls to support the grab bars.

Some candidates did provide ergonomic sketches showing the relationship of a person in a wheelchair to accessing areas such as basins – this displaying a level of understanding and empathy for a person in a wheel chair and their relationship to furniture and fittings. Many responses may have provided much of the information mentioned above in the plan view but did not provide appropriate section drawings or section drawings at all. Less successful responses did not include any support devices or had positioned key fittings in areas that did not allow easy access by wheelchair or transfer from the wheelchair. Poor responses also were inaccurate and often sketched their responses rather than working to accuracy and using the information provided on the information sheet.

A good number of candidates did not meet the minimal expectations of providing a plan drawing and a section drawing items to 1:20 scale. Some chose to use alternative scales for the section drawings and many “section drawings” were 3 dimensional, indicating that these candidates did not understand section drawing techniques or chose to ignore the question’s instructions.

### AWARD OUTCOMES

	Q3	Q4
	Use of Space	Universal Design
a+	0	0
a	0	0
a-	0	0
b+	1	0
b	1	2
b-	5	6
c+	12	7
c	28	9
c-	52	15
d+	29	22
d	20	25
d-	9	22
z	1	1
	158	109

## EXTERNAL FOLIO ASSESSMENT REPORT

### INTRODUCTION

Folios submitted this year did not seem to vary much from those submitted in previous years, particularly in reference to critical omissions being made by candidates, referencing protocols and work standard in general. This is particularly frustrating as it would indicate that previous reports posted on the TASC website have not been viewed by students and they have not adhered to the folio guidelines all that closely.

Students should be encouraged to read the previous year's assessment reports on the TASC website to identify folio strengths and weaknesses.

Summary statements have been made, regarding content sections observed by the Marking Team below:

### CRITERION 6

Locate and analyse information about user needs and influences in design projects.

#### THE BRIEF

In 'A' responses the brief was a concise statement. Many other candidates tended to draw their brief statements out – often including a part of the user needs analysis as part of it rather than as a separate section.

There are still a high portion of candidates that base their brief around café and sporting facilities. While this may be of interest to them, much of the content covered in this busy course does not go into the intricacies of commercial design, and so most of these folios, with the exception of a small minority, are often not resolved successfully. It would be wise to advise students not to undertake this form of architectural design.

#### THE AIMS

Higher level folios listed at least 4 – 6 aims that were tangible, practical, but not simplistic. Some less successful folios would list such items as a bed or bathroom for a dwelling, pretty much stating the obvious and not doing some higher-level thinking to attain good aims to work towards.

### CLIENT'S NEEDS ANALYSIS

Higher achieving candidates would carry out an in-depth discussion of the client's (User's) needs, providing a strong rationale and analysis. From these statements stronger candidates would draw their aims from it and the Brief statement, as the Brief should really reflect the context of the User's Needs. One or two candidates went further in providing a Project Context – this again rationalising why the project was being undertaken.

Less successful folios would often just have dot points of recognised needs, but with no justification given. Some other folios did not address needs at all, but just listed aims.

The text book "Nelson Visual Communication Design" from Cengage Learning by Kristen Guthrie, gives excellent guidelines for writing brief and aims, context etc. and could be helpful.

### SITE CONTEXT

This section still needs addressing. Less successful folios often used swathes of maps of different resolutions and scale to explain an area and little else or may have explained something about the site but did not include any on-ground visuals. This is an area that teachers and students are encouraged to focus on. More successful candidates did produce a context statement that was relevant to the client, the stage of life or demographic state, their needs or interests and why the development was based there and what things within the area were of relevance. Also, several candidates confused the Site Context with the Site Analysis or would combine the two.

### SITE ANALYSIS

Strong Site analysis or Space Analysis included a high degree of detail backed up by a hand drawn scaled site map as part of this section. Some candidates also included cross-sections or topographic details. Other inclusions were shadow analysis, vegetation types & their significance, access, seasonal prevailing winds, sun arcs and orientation details, shadow impacts, rainfall data and impacts, potential impacts on neighbours or from existing neighbours, existing architectural influences, soil analysis and views. These better ones were also backed up by on ground visuals and all information sources referenced.



Good quality Space Analysis included a scaled plan of the existing dwelling or area being redeveloped and adjoining areas being impacted along with photos taken by the candidate explaining the current use or issue and what the proposed change will be undertaken.

Poorer quality folios did not include much of the above and often relied on cut and paste diagrams from Google Maps, Sun Calc. and Willy Weather, with little explanation of their relevance.

## PRECEDENT RESEARCH

This work was again varied. Higher performing candidates would research and include precedents that had a high level of relevance to their brief. Some would purposely direct the reader's attention to the aims being addressed. Candidates who carried out an in-depth, discussion, stating the relevance, how the idea could be utilised and what changes may need to be made may have scored well. Also, candidates who went with multiple possibilities that could be used to fulfil an aim may also have scored well. Some better candidates also categorised their precedents, regarding particular aims, i.e. architectural styles, interior solutions and so on.

Lesser folios often had examples that may have had relevance to the brief or aims, but very little justification or analysis was carried out.

Precedents that comprised mainly case studies and the students' analysis that are relevant to the folio aims rather than endless shopping of products and pasted PSD notes were much more inspiring.

## REFERENCING

Consistency in referencing protocols remains an issue. Several candidates did not reference their images, either with a numeral figure or footnote under the image but did list them in their bibliography – this would have drawn a penalty. Although referencing their sources, some candidates again did not follow appropriate guidelines in the direct use of text – using swathes of text, instead of paraphrasing or indenting or using quotation marks. They may have received a penalty and a letter from TASC as this is identified as a form of plagiarism.

Finally, there seemed to be an increase in the number of candidates using software to produce final drawings and some concept work. While some candidates did reference this software and the “blocks” they used, several just referenced the software and not the “blocks” and some did neither – this may have drawn a rating penalty and a letter from TASC.

It is also highly recommended that candidates utilise plagiarising check software such as Turnitin to help address any plagiarism issues that they may have missed. All candidates should make themselves very familiar with the TASC [Authenticity and Academic Integrity: A Guide](#) document to mitigate poor referencing and adhere to appropriate protocols.

## CRITERION 7

Use and document the design process.

### DESIGN DEVELOPMENT

High scoring candidates produced three clear concepts that displayed strong progression between each iteration. This would be in shape and form and interior layout. Those who also included a high level of communication rationalising why a pro or why a con were so, along with a reflective narrative of what changes were made between each concept may have scored well. Candidates who did the prior and supplied well drawn, scaled drawings, showing scale bars or dimensioning may also have scored well. Some better candidates also utilised elevation sketches along with their plans to assist in the visualisation of what each concept.

Stronger candidates also regularly reflected, back to their aims or listed the aims that were being addressed in their annotations.

Again, as in previous years, many candidates did not always include key furnishings or cupboards in their concept work, thus not providing strong evidence that they had checked that room proportions were workable. Furthermore, many candidates did not include scale bars or dimensioning on their concept work and although the drawings may have looked proportionally correct, this made it impossible for a marker to check – this would have drawn a penalty. Some of these candidates did use full dimensioning in their final presentations, but there needs to be evidence of scaling in the concept phase too. All Design developments should be accurate sketch quality and be done to scale.

The folio guidelines stipulate that the three concepts must be hand drawn and include a series of sketches - A-B responses have more sketches than just the floorplan, including some that are to scale as already mentioned. Many candidates did incorporate their third concept as the final floorplan in Criterion 8. This may be passable if there is definitive change apparent, but it would be safer for future students to refrain from this and have three separate concepts and then a final plan drawing in C8. This can be a more refined version of Concept 3.

Many claimed PSD principles were being used but a large number failed to attain the correct solar paths, and many used a website that does not give the correct solar elevation angles.

Many folios contained very basic information. Some had 'thought bubble' diagrams, zoning or rudimentary line drawing sketches that lacked dimensions, scale, or scale bar. This information is acceptable if it precedes concept design development, however, it does not substitute for the detail that is required as outlined above.

Overall presentation should be considered. Weaker projects had quite small drawings with minimal detail that were difficult to interpret clearly. Stronger projects included either hand drawn images that were accurately presented and contained appropriate supporting annotations. Some candidates did choose to use CAD in this phase too, and these were generally easy to visualise and assess, however, this does restrict the candidate from developing their own drawing techniques further.

Several folios also had completely different design developments, totally different shape or forms not having any connection to the previous iteration, so the student was coming up with a fresh idea every-time, rather than developing their original concept further. It is suggested that students experiment with different forms as part of their preliminary brainstorming work, which can still be included within the folio, so long as it does not push the folio over 20 pages.

Some candidates created concepts with intentional "faults" in their design work that are "set to fail", such as "there are no windows in the design, this will have to be addressed in the next design".... or "after much consideration it was decided stairs will be needed to access the second story floor from the ground level". This would often suggest that the candidate had undertaken "Reverse Design" – where they came up with one concept and then tried to de-construct it to form lesser iterations of it.

## CRITERION 8

Generate design solutions which respond positively to the brief and identified aims.

### DESIGN RESOLUTION

At this stage, strong folios clearly showed a resolution to their design problem. High scoring candidates created well-refined drawings, to scale (with scale evidence included i.e. a scale bar), dimensions and the direction of North. They provided in-depth narratives discussing the design features presented within each drawing whether it be the floor plans, elevations, cross-sections and 3D drawings.

Weaker folios still contained listed design negatives within the final design.

Strong folios provided an evaluation that discussed and rationalised how each Aim was achieved – or perhaps why it was not achieved in a more satisfactory manner. Essentially though, all aims originally listed should have been addressed in a comprehensive manner.

There still tends to be pattern among many candidates in that they explain how a particular aim is being addressed within the evaluation, but there is no evidence of this occurring throughout their concept work or within their final section of realisation drawings and annotation.

Some lower scoring candidates did supply a set of drawings as prescribed in the folio guideline, but not always that detailed and with little discussion or no narrative at all explaining the design features.

Candidates that listed a high number of aims may have struggled to address these all in a comprehensive manner and this would have affected the outcome. However, those who may have only listed two to four aims would have restricted their opportunities to score highly.

Again, many candidates used 3D software to create final images of their project realisation. While some may have looked good, it did not always give an accurate representation of how much of the items created were theirs, as many used “blocks” downloaded from other sources and these were not always clearly referenced.

There should be a marked increase in the drawing quality and annotations of the final floor plan in Criterion 8 including wall thickness and materials, all drawn to Australian Standards.

It has been suggested that if students want to use 3D software for their floorplan, elevations and sections, it should produce drawings to Australian standards - such as those in Revit and Archicad which are free to students. There may be other simpler and lighter programs out there.

Some Sketchup models did not compare to the effort made by students who hand drawn their final drawings to Standard. Sketchup was used effectively in some folios for producing a 3D representation of the student project.

Some folios did use CAD in a highly effective and informative manner as were other student work that used traditional means of visual communication.

## GENERAL OBSERVATIONS

### PENCIL SCANS AND SPELL CHECK

Finally, many pencil scans were very poor obviously scanned at much less than 300 dpi, making them almost unreadable. Weaker projects also contained spelling or grammatical errors that can be easily avoided. Students are encouraged to use Word to spell check prior to copying this written information into their projects.

### LABELLING

Also, in some folios, candidates had combined precedent research with concept development, which did make it rather difficult to assess. Despite this, some of these candidates still received good marks for the combined precedent/concept work. It is certainly a good practice to provide images from the precedents within the concept work to help link back to the design inspirations and aims. However, it is highly recommended to avoid combining sections as mentioned above in future and all sections should be clearly labelled.

### FOLIO PUBLISHING

Although teachers are already pushed for time, some time should be set aside to provide some guidance and instruction to students in using design elements and principles in the publishing of their folios, as layouts of pages are often messy and poorly presented. PowerPoint is a reasonable Publishing Software, particularly if using blank pages, but pages using design templates take up too much available space. Adobe Design is another recommended publishing software.

It is also important for candidates to adhere to the folio guidelines and stay within the 20 Page limit. A content page is not necessary.

### THE USE OF CAD IN FOLIOS

As mentioned in the folio assessment review, some markers have some concern on how CAD (Computer Assisted Drafting/design) is being used within student folios. One concern is the use of software allows the candidate to produce multiple views without any further input, essentially the software is doing the work, not the student. However, it is important to take a holistic approach to the use of CAD within Housing and Design.

It is important though that the traditional drawing techniques be taught and developed by the student. There is a connection between a student's ability to draw by hand and their ability to design. A sketch demonstrates a process of thinking, interpreting and understanding, that often gets lost in CAD work. This calls for the need to teach foundation skills, and emphasise the design process, so students don't get complacent in their development as creative thinkers. By including traditional methods in the design process, students can express their ideas creatively and authentically. This is a critical skill for all students to possess for their end of year exams if they are to succeed to a high standard.