Housing and Design (HDS315113)

Overview

Answers to all of the questions in the exam demonstrated a wide range of understandings of Criterion 3 and 4 and how to apply this knowledge in the given scenarios. At the most basic level students could recognize and identify the key principles that needed to be addressed in the question and the highest level answers were able to accurately analyse these questions and the scenarios they envisioned and apply the needed principles creatively and appropriately to come up with effective design solutions.

A significant portion of responses seemed to indicate a misreading or misunderstanding of the questions and mistakes were made that reflected this lack of comprehension. Teachers should encourage students to take time to read what the question is asking.

Having blank answer pages was a real positive for many students— enabling them to organise and layout their answers in a way that assisted in the clear communication of their response. The importance of clear visual communication, succinct annotation, accurate sketching, drawing to scale and correct sizing of all fixtures and common furniture elements and symbols cannot be overstated. Use of standard architectural conventions for doors, windows, walls, sections and furniture is a foundational skill needed by all students of the subject.

Use of colour pencils and an accurate key to assist in interpretation were used to good effect in some higher level responses. On the other hand random use of colour highlighters and pens for no obvious purpose created confusion in some responses and did not enhance the clarity or effectiveness of the answer.

Question 1

This question was answered by 208 candidates with the majority of answers being to the lower end of the standards.

Many responses showed a good knowledge of some of the key principles and concepts related to passive solar design in a cool temperate climate zone. Fewer responses showed a clear understanding of how to apply that knowledge to the adaption of the glass house design in relation to the specific constraints and possibilities that this client, the given scenario and the site presented.

Many responses failed to address all aspects of the question, highlighting the need for students to take time to carefully read questions before, during and after creating their response.

A significant number of responses only included the floor plan and did not include either the requested section or site plan or both were missing.

Many answers recited numbers, angles and percentages relating to passive solar design principles but very few responses adequately proved how or where exactly these principles were incorporated into the design.

There was a clear need in many responses to improve in the use of clear, accurate sketching that demonstrates correct architectural conventions. A range of ambiguous elements appeared in many drawings creating some confusion as to the location of doors, walls, windows and internal fixtures and furniture.

Some annotations became very wordy paragraphs that did not help to clarify the drawn response.

Annotations need to be succinct and precise to support and justify drawings. Annotations need to be clearly connected to the drawings.
QUESTION 2

The least number of candidates answered this question with only 68 students creating a response. The majority of candidates successfully addressed tropical design considerations, with a few students confusing cool temperate and tropical principles.

Most students were able to clearly articulate the key principles of passive solar design, however, weaker responses gave a general response and failed to address the actual question, which required positioning the dwelling on a site plan, considering privacy, a kitchen garden, and ensuring the aesthetic quality of the building was maintained whilst providing thermal comfort for the occupants. Some students interpreted the site plan as just drawing vegetation around the dwelling and not actually generating a separate sketch, which reduced the quality of the response.

Quality of drawing in this response was quite reasonable, most students used the correct scale and generated legible drawings using appropriate conventions. Stronger responses used colour to further justify their design, a particular stand out was the use of colour in section drawings to demonstrate understanding of air flow/heat transfer.

High level answers understood the need to shade all walls from direct sunlight, reduce internal walls to allow maximum airflow through cross ventilation and include plentiful openable windows and sliding doors.

QUESTION 3

145 candidates answered this question.

Candidates who received an A or B rating on this question responded with an accurate use of scale, inclusive of wall thicknesses, door openings, fixtures and furnishings. These responses also looked to utilise the existing garage door opening with appropriate replacement window and/or door openings. These answers gave information about storage, floor coverings, extra lighting (both natural and artificial), ventilation, skylights, task lights and power points. Their design decisions were well annotated and justified, and they covered all aspects of the design scenario. A feature of these responses was a good open plan that also dealt well with privacy issues, both internal and external, of the renovated garage. These answers allowed an appropriate amount of space in and around furniture, e.g. the bed and dining table. A number of answers included extra detailed drawings, such as an elevation or perspective view.

Candidates who received a C rating generally had an appropriate layout and flow and often addressed a replacement for the garage door. However, these answers suffered either from a lack of detail, or accuracy, or both. Their responses stated what is there, rather than justifying their answer with detail in their drawings and annotations.

Answers below C often deleted the existing entrance to the house, had poor proportion, or had furniture or fixtures that were not the correct size or scale. A number of these answers did not consider the lack of natural light or an alternative entrance to the studio. Many D responses failed to complete the floor plan or include annotations.

Candidates are encouraged to use the reading time to carefully read the question so that they respond in the appropriate scale and fully answer the question.

Again students need to be careful to address all aspects of the question.

QUESTION 4

125 students answered this question.

Many of the lower level responses showed limited understanding of the standard measurements of furniture and fixtures and were also unable to demonstrate the adaption of the design needed to accommodate a wheelchair using occupant.
A and B level answers demonstrated accurate knowledge of 1500mm turning circles in the needed areas and a clear depiction of workable bathroom designs with grab rails, hand basins and toilets positioned accurately and with thought to the relationship of the toilet with the rest of the space.

Best Practice answers included:

- Reading what the question asks
- Understanding the position of the basin in relation to the toilet pan and whether the wheelchair can sit alongside the toilet to transfer
- Workable solutions that fit inside a 2400 x 2400 or 2100 x 2650 standard accessible toilet configuration
- Ability for a wheelchair user to participate in the kitchen – some height change in the bench or space to get closer under the bench
- Sufficient space to pass the dining chairs or in between the kitchen bench and island bench
- Showing empathy to the user in the design – many dining spaces “shoved” in a corner – the place for dining for others as well
- Heights of benches or clearances indicated and proved. Some high level answers had exploded details and sections of bench heights and depths and consideration of the maximum reachable overhead cupboard height.

Some answers assumed that the floor level of the house was significantly raised compared to the ground level outside and so created elaborate ramps which were not specified or needed in the answer.

Misunderstanding that the kitchen was for the house in total (many saw it as a kitchen for gran only).

The answer did not require sleeping space but many responses seemed to indicate that they saw this area as a self-contained unit rather than an extension of the rest of the house.

Also many answers included a shower which was not required in the question and this made it quite difficult to fit in the kitchen and dining area in the space remaining. Once again this came down to assumptions made by the candidate without carefully reading the actual requirements of the question.

As with all responses it is really important that the solution is primarily a drawn response with justifying annotation. There was a tendency in responses to include too much unrelated text. The key is to justify what has been actually communicated clearly through drawing.

Some responses failed to recognize which elements of the design could be changed and which elements where fixed.

**FOLIOS**

**GENERAL COMMENTS AND OBSERVATIONS**

The very best folios were small scale design solutions to real world problems where the student was already familiar with the site and context or was able to become so through a number of visits. The overwhelming trend this year and in previous years to produce beach shacks or similar in coastal locations for often imaginary occupants produced very few quality folios. One of the major failings of these folios was that they rarely had convincing site analysis, context or understanding of user needs. This had the knock on effect of generating a wish list of inclusions for aims and precedents rather than a well-researched consideration of how best to achieve a design that suits the real and often competing needs and demands of the site, the climactic conditions and the varied activities of the people who will use it. A take away for all students and teachers of the subject (which was
clearly articulated in the project guidelines) is folios that focus on small scale projects and real world architectural problems, parts of buildings, bungalows, outdoor living areas etc. are most appropriate for allowing students to demonstrate the achievement of the standards set out in criterion 6, 7 and 8.

The best folios demonstrated a fluid progression and interconnection between all elements/sections of the folio so that the overall impression was a problem fully understood in its context and effectively addressed and communicated in relation to best practice and the constraints of the site and the users.

A large percentage of folios set out to solve very large and complex industrial and commercial scale architectural problems. Many of these folios suffered from a lack of understanding of the complexity that such briefs inherently have. Few of these folios produced convincing design solutions to the core aims of their brief. An improvement to this would not be to abandon industrial and commercial architecture but to zoom in on an element of a building or business that is problematic and seek to resolve that issue within the folio. This folio could be all about a poorly designed bathroom in a restaurant, a kitchen/counter setup in a café or any particular element of the living and working space of a local business or industry that needs refinement and improvement. Most commercial/industry oriented folios took the approach of designing complete buildings or even multiple buildings and very few were able to do this convincingly or effectively. Teacher guidance in folio topic choice is especially important so that students begin the process with a realistic project commensurate with their ability and the constraints of the subject.

The final checking and editing of many projects was poor, with many spelling and grammatical errors. Some projects did not have their TASC number on the document and quite a few were out of sequence outlined in the folio guidelines which meant there was not a logical order to the project.

In comparison to last year, students’ ability to apply and demonstrate an understanding of scale, particularly throughout the design development phase has improved.

The overall quality of drawing in many folios was weak. Some students included illegible drawings that did not adhere to architectural conventions and others included CAD drawings that indicated a lack of proficiency in the program. CAD should supplement a student’s design communication, not restrict it.

Using ‘Room Sketcher’ as the final presentation technique is unacceptable in this subject as it fails to demonstrate an understanding of spatial awareness and apply appropriate communication techniques and conventions.

Annotations should be concise statements that support diagrams, sketches and scale drawings. Many students included long paragraphs of written text – much of which was superfluous information. The essence of the Housing and Design subject is lost through this sort of presentation. Architectural design relies on one’s ability to communicate information visually, a skill which appears to be a significant weakness this year. Furthermore, first person language should be avoided until the evaluation.

**COVER PAGE, TASC ID, CONTENTS AND PRESENTATION**

The cover page does not count towards the overall page limit – nor is it marked as a required element in the folio, however it is a really great way to set the scene for what is going to be inside the folio. The best cover pages included a picture of some element of the folio project whether it was a photograph of the site or a hand drawn or CGI render of the finished design or part thereof etc. It is an opportunity to develop the overall presentation of the folio and can be used to orient the viewer/marker/audience right from the outset in the direction that the folio is headed.

The cover page should include in large writing the TASC ID of the candidate and a name for the project.

A clearly set out contents page indicating sections of the folio and their corresponding page numbers is also helpful. The contents page is not included in the page count for the folio.

Overall presentation was another weakness this year. The application of design principles and elements is critical in order to produce a coherent and well-structured folio. This includes the appropriate use of headings, labels, font
style and size, consideration of layout and arrangement techniques, appropriate backgrounds, title blocks or headers, use of colour, emphasis, hierarchy, etc. The clarity and effectiveness of Folios is enhanced and more fully realised when time is taken to ensure that pages are laid out clearly and logically and superfluous information is removed.

**BRIEFS AND AIMS**

The brief is a succinct statement of the project’s purpose. This details the requirements of the project. The aims unpack the brief further by detailing other priorities of the designed solution.

The brief and aims were stated clearly and succinctly in the better folios but in many the aims and needs were vague and needed more explanation to clearly inform the reader of the intent of the folio. For example, an aim of providing a “beach vibe” or including ‘many windows’ or a home “to complement the area” all needed further explanation to clarify what the project was setting out to do.

Some students who stated many aims did not address all the aims or were limited in their response to those aims as there were too many to fully address in any detail.

Some folios “set to fail” design “faults” built into the early designs. For example an aim such as to “provide Northern Solar access” may not have been met in design one due to little or no windows on the Northern wall. We may need to emphasise that all aims need to be attempted in DD1 and then refined through critical analysis of alternatives before arriving at a final design.

There were a great many folios which claimed to be Passive Solar but did not demonstrate proof of these concepts and principles into their design developments. Some of these folios claimed success with PSD due to placing solar cells on the roof whereas solar cells are not classed as PSD they are active solar (electricity generating solar devices that then power electrical appliances such as air conditioners, heaters and lights). The highest level folios using passive solar design principles involved careful application of appropriate features with correct and up to date information.


Needs analysis was weak in most folios with the strongest folios demonstrating a clear understanding of the activities and particular needs of the occupants and the reasons why this problem is significant and important to them. Very few folios were created with real clients/users in mind and this lack of reality made it hard to develop aims that were convincing and able to be researched and investigated in precedents.

**CONTEXT**

It would seem that the context page in many folios was prepared to a formula or the example from the TASC web page as so many of the context pages contained the same type of information and for many it was completely irrelevant to the topic. Information such as location to the nearest bus route, supermarket or schools and data such as population census details are only useful if they are relevant to the actual brief.

The context should cover the setting in which the building or room is sited and really needs to address surrounding structures, rooms, fences, block access, noise, and views. Photos of the actual site and surrounds, taken by the student and organised around a site plan were present in higher level folios. The context needs to be relevant to what the project is focusing on. For example statistics about the number of pubs and nightclubs in the local area holds little to no relevance to the context of a project focused on redesigning the living area of a retirement villa. Context for an interior design project should look significantly different to the Context for an Eco holiday rental in the bush.
SITE ANALYSIS

An analysis of the factors on the site which inform or may impact on the design.

In some aspects, the Context may meld with the site Analysis however, the following information should be laid out clearly to students on what to cover:

External

- A clear site plan to scale with vegetation details and existing access entry roads etc.
- Seasonal (Winter and Summer) Wind directions using data BOM roses, taken from 3PM
- Topography details utilising contours. Sectional drawing also useful
- On ground photos of site with different aspects
- Seasonal sun arcs – using appropriate references to support
- Sun angles – relevant to the latitude of the site (Utilise Latitude formula) or (Stereographic Sun diagram)
- Analysis of how building may sit on site and justifying decisions visually and verbally.
- Macro and micro climate
- Adjacent buildings
- Geological factors
- Vehicle access

Internal design work

- Floor plan of existing area to scale and proper dimensions or scale bar
- Space analysis of what is the current use is and what the issues are – relating back to earlier needs analysis
- If an addition, be sure to analyse how this extension may impact in relation to the existing building.

The site analysis was poorly done by many students and often completed with a very small Google maps image of the site without sufficient information to know where on the block the proposed building was to be sited. Very few folios had annotations to explain the factors that needed to be considered when designing for the block. Many students omitted including the dimensions of the block and only a few students included a sketch of the block or building that was clear and easy to read with the pertinent information to clarify and justify their choices.

Weather statistics and solar path and sun angle diagrams were often included with no application, explanation or justification.

The best site analysis were drawn by the student with exploded details of vegetation, nearby buildings, shading of the site at different times of day, accurate dimensioned floor plans of the existing building to be renovated if the project was more interior related and if relevant - photographic views from and of the site.

Often the best site analysis had a simple colour coded key that would enable easy identification of key aspects of the site.

Section views of sloping sites with accurate measurements and clear connection to where the section was taken from the site were also common in high level folios.
Poor examples of site analysis included no indication of scale or dimensions, unclear, absent or incorrect use of North symbol, vague generalisations about weather patterns/solar geometry and no real analysis of the important factors impacting on the site – relevant to the aims and needs of the users.

Many folios used a sun chart program that did not show the solar elevation, this was either guessed at (often incorrectly) or gained without reference. Only a few used the simple maths method of subtracting latitude from 90 to find the equinox angle and then adding or subtracting 23.5 to find the summer or winter noon maximum angles. This method is common knowledge and would not need to be referenced.

PRECEDESNTS

The best use of precedents in folios included a series of case studies with succinct and clear analysis of how and why other architects/designers/users had solved similar problems and how these ideas and solutions might be applied to the folio’s design solutions. Some high level folios demonstrated effective ideation within the precedents section that demonstrated creative and analytical use of an element of a precedent graphically rather than just writing about it. All high level folios showed a clear connection between the aims of the brief, the investigation and application of relevant precedents and the development and expansion of key ideas in the precedents throughout the design development section.

Precedents were generally reasonable but many descended into a “shopping bag” of good things instead of several alternatives being critically analysed to decide which best suits the design and why. Too much ‘I like this’ or “I love this” where a more impersonal approach would be best such as “this aspect of the design may suit Aim no.x”. Precedents on the whole started ok with design ideas but then some changed to the show bag list of “will haves”.

DESIGN DEVELOPMENT

Many folios showed little evidence of design development and very little analysis of the design and decisions needed to improve the design and address the aims of the project.

In many low level projects design elements that candidates considered to be negatives of one design appeared in the following concepts and even in the final design.

Some folios created 3 completely different designs instead of managing an evolution or iteration of one design a minimum of 3 times through the 3 pages. Many design developments did not use scale, scale bars or dimensions at all, the first time such were shown was in the final drawings. Claiming a drawing is at a certain scale is fine but as discussed at multiple recent moderation days and in the folio guidelines – nominating a drawn scale (1:100 or 1:50) is redundant because folios are viewed and marked electronically - so in order to determine and prove the accuracy and scale of drawing students must include a scale bar or dimensions with each design development and preferably both.

Many design developments included really excellent preliminary design ideation with bubble diagrams testing the most appropriate zoning of activities within a design and relating these directly to precedents and user needs. The highest level folios then followed this up with the required 3 iterations of the correctly drawn, conventional architectural design concepts – drawn to scale, with dimensions labelled and annotated with improvements and areas of compromise discussed in each.

Many lower level folios did not include dimensioned drawings. These folios often appeared to create designs randomly without relationship to precedents, dimensional reality, the constraints of the site or needs of the users. This was often the case when students were designing whole houses and in many instances it appeared that design development was done as a rushed afterthought when the candidate had either spent many hours developing the final design in a CAD drawing program or hand drawing. These folios often created the impression that no actual design development had taken place but rather the final design was the first design and the design section of the folio was done later.
Genuine and considered design was always obvious in the design development section of the high level folios and demonstrated a clear and logical progression to an effective solution that had come to grips with the competing factors effecting the project and the best and most relevant examples of precedents related to similar projects.

**FINAL DESIGNS**

This showcases the final design and should be presented in a format appropriate to the brief. Use of scale and appropriate measurements must be apparent. There needs to be evidence of critical and analytical decision making which justify final design decisions. Justification of decisions, relating to the brief and aims should be shown through succinct annotations in every part of the final design section.

Final Design sections were mixed with many folios completing this well. The outstanding folios tended to not have a computer generated model.

Many folios seemed to be drawn after a full computer model had been created, one folio admitted running out of time with the manual drawings having spent too much time creating the full model first.

At the final design stage, strong folios clearly showed a resolution to their design problem. The use of a north arrow, scale, dimensions, or a scale bar was generally quite good. Clear and appropriate annotations helped to justify design decisions.

Weaker folios still contained listed design negatives.

Many folios did not present adequate or conventional drawings especially when a section was required. Some presented 3D computer generated cutaway views as sections and although these could be used as an additional aide to visualising design solutions they should not be used as a replacement of correctly drawn to scale and dimensioned section views. Similarly some folios failed to identify where their sections were taken from in the floor plan and this made for ambiguity.

The highest level folios presented all required drawings using standard architectural conventions and succinct annotation and justification of key design features. There was less focus on engineering details than in previous years which was a positive.

**EVALUATION**

An evaluation reflecting on how well the brief and aims have been met by the final design, discussing and justifying any aims which have not been fully resolved. This could include a list of aims or a chart or table that lists the original aim and explains how this was met within the final design solution.

Strong folios clearly outlined how they had considered and met the aims of the brief, with some students opting to present this information as a chart. This made it clear to markers what had been achieved in the project.

**REFERENCING**

Most folios displayed a range of references with highest level folios including pictures and information from books, magazines and websites as well as acknowledging correctly the recording of personal communications and interviews and use of software to generate drawings. High level folios used Harvard referencing system for both in text referencing and in a structured and alphabetically ordered list of References at the end of the folio. Lower level folios had missing references or focused primarily on references of images from websites.