

Developing Communication Skills: A First Year Design Report

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The University of Sheffield

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Context

- Departmental curriculum ‘threads’:
 - Awareness of Sustainability
 - Communication skills
- CIV172 – Introduction to Sustainable Civil Engineering
- Includes coverage of energy, waste, climate change, pollution and water management , social and economic aspects & ethics ...
- Assessment
 - 50% Examination (on-line test)
 - 50% Coursework (Design of a Sustainable Building)
 - Week 9 of Semester 1
 - Note, class size > 100

Coursework – Design Project

- Outline conceptual design for student accommodation
- Showcase for sustainable building concepts
- 3-5 storeys high
- Total floor area 1500 m²
- Parking for at least 15 cars
- Information about the site ..

Guidance on Report Content

- Consider:
 - Building shape and orientation
 - Main construction materials
 - Lighting, heating and ventilation
 - Stormwater management, water supply and sewage treatment
 - Landscape features
 - Any other features you believe to be important
- In each case provide a **statement of your design decision** and **justification for choice**. Any limitations of the site?
- **Site plan + sketches** of key elevation(s)
- Report to a client:
 - Summary
 - Numbered sections
 - Numbered pages and Table of Contents
 - Appropriate written English, attention to spelling and grammar
 - Don't include detailed design or costs
 - 2000 words

Specific Tutorial Guidance – 3 sessions

- Report structure, grammar and style (particularly highlighting common errors that I've encountered in the past):
 - Keep things concise, factual and formal
 - Avoid colloquialisms and casual language
 - No marks for 'flowery' language or creative writing
 - You do not need to write pages about the importance of saving the planet .. focus on your design and how it contributes to sustainability
 - Avoid writing in the first or second person
 - ✘ "I think ..", "My building ..", "As you can see .."
 - ✔ "The proposed building .."
- Interactive exercises aimed at understanding what constitutes a good summary and conclusions
- Library session on referencing and plagiarism
- Live demonstration of MS Word tools for automatic section numbering and Table of Contents generation
- A strong recommendation for John Davies' book

Assessment Criteria & Peer Review

- Students encouraged to bring draft reports to a tutorial one week before submission
- Reports were swapped and marked using a detailed explanation of marking criteria

Marking Schedule for CIV172 Coursework - 2011

	Criteria	Not attempted	Fail	Third	IIII	III	I	I+
% of Final		0	30	45	55	65	75	90
Grade	Presentation							
15	Report Structure	Category not used.	Report structure is unsatisfactory.	Report structure is satisfactory, but with several elements (e.g. Summary, Table of Contents, Page Numbers or References) missing or poorly done.	Report structure is generally good, but with some elements (e.g. Summary, Table of Contents, Page Numbers or References) missing or poorly done.	Report Structure is very good. Some minor errors only.	Report structure is excellent.	Report structure is excellent. High impact professional appearance.
10	Written English	Category not used.	Written English is unsatisfactory.	Written English is satisfactory, but with several weaknesses in spelling, grammar or writing style.	Written English is generally good, but with some weaknesses in spelling, grammar or writing style.	Written English is generally very good. Some minor errors in spelling/grammar or style.	Written English is excellent.	Written English is excellent. High impact professional style.
15	Figures	No figures.	Figures very poorly constructed, have missing titles, key, scale and lack detail.	Figures are satisfactory but basic. Figures are poorly constructed and/or have missing titles, key, scale or lack detail.	Figures are generally good, but may lack detail or have some missing elements.	Figures generally very good. Some minor errors or omissions only.	Figures are excellent.	Figures used to excellent effect, very well executed, with high impact professional appearance.
10	Technical Content							
10	Overall compliance	No design presented.	The design does not comply with the basic requirements of the brief.	The design is basically compliant, but with several key aspects not properly addressed.	The design is compliant with most aspects of the brief. The building looks workable, though some elements have not been fully considered.	The design is compliant and practical. It shows evidence of careful thought and is well explained.	The design is compliant and practical. It shows evidence of careful planning, and includes novel and imaginative proposals.	The design is compliant and practical, going above and beyond the potential trade-offs between operational and embodied energy, using quantitative evidence to justify design choices.
5	Energy overview	Not mentioned.	Embodied or operational energy (but not both) mentioned.	Embodied and operational energy mentioned, but the balance between them is not discussed.	Some evidence that potential trade-offs between operational and embodied energy have been considered.	Strong evidence that potential trade-offs between operational and embodied energy have been considered.	Comprehensive discussion on the potential trade-offs between operational and embodied energy.	Comprehensive discussion on the potential trade-offs between operational and embodied energy, using quantitative evidence to justify design choices.
10	Embodied energy/materials	Not mentioned.	Occasional mention of construction materials, not considering all main elements and choices not justified.	Main construction materials listed, but choices not justified.	Main construction materials listed and justified; some minor components also discussed.	Main construction material choices comprehensively justified; minor components also listed and justified.	Main and minor construction material choices comprehensively justified; evidence of novelty or independent research.	Main and minor construction material choices comprehensively justified; strong evidence of novelty or independent research.
10	Operational Energy	Not mentioned.	Brief mention of operational energy with no real consideration given.	Limited consideration given to operational energy.	Several aspects of the design contribute to operational energy savings, although some relatively obvious options have not been considered.	The design incorporates a substantial number of measures to reduce its operational energy requirements.	The design incorporates a substantial number of measures to reduce its operational energy requirements. These measures fully integrated into the design.	The design incorporates an exceptional range of measures to reduce its operational energy requirements & the measures are fully integrated into the design.
10	Water Management	Not mentioned.	Brief mention of water management issues with no real consideration given.	Limited consideration given to water management.	Several measures aimed at sustainable water use included, although some relatively obvious options have not been considered.	The design incorporates a substantial number of measures for sustainable water management.	The design incorporates a substantial number of measures for sustainable water management. These measures are fully integrated into the design.	The design incorporates an exceptional range of measures for sustainable water management. These measures are fully integrated into the design.
5	Broader Sustainability Measures	Not mentioned.	Vague reference to one measure with no specifics given.	One or two measures listed.	Some other measures listed and/or mention of broader sustainable development goals.	Several measures listed, indicating an ability to place the building design within a broader sustainable development context.	Several measures listed, indicating a deep understanding of how the building design sits within a broader sustainable development context.	Several measures listed - some of which appear novel - indicating a deep understanding of how the building design sits within a broader sustainable development context.
5	Literature Sources	Not mentioned.	Single reference used.	Very limited use of external information sources.	Several relevant case-studies and/or research findings referred to.	Several relevant case-studies and/or research findings used to justify design choices.	Good use made of relevant case-studies and/or research findings to justify design choices.	Extensive use made of relevant case-studies and/or research findings to justify design choices, with an excellent range of literature sources.
5	Site/building context	Not mentioned.	Demonstration of awareness that there are sustainability measures that may not be suitable for the site, without going into any specifics.	Limited consideration of alternative options and/or of site constraints.	Some consideration of alternative options and/or site constraints.	Some discussion of alternative options showing awareness of site constraints.	Good discussion of alternative options showing insight into site constraints.	Extensive discussion of alternative options showing evaluation of site constraints.

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Note that 40% of the report mark was for presentation

Assessment and Feedback

- Reports were submitted on-line (Blackboard)
- Marked using turnitin GradeMark
 - Assessment criteria as shown previously
 - Comment library for common errors (or positive feedback)
 - QuickMark comments for more specific individual points
 - No 30 cm pile of paperwork .. more sustainable!
 - Team marking and remote marking very easily done
- PG Demonstrators
 - Helped achieve reasonable turn-around times (generally not quite achieving 3-week target, but ready for the start of second semester, which is when they needed it)
 - I double-marked a sub-sample for QA

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Let's get started! Follow the steps below to mark and grade this paper as

Rubric

CCSS 11th-12th Grade Argument

Claim	20%	5	4	3	2	1
Development	20%	5	4	3	2	1
Audience	20%	5	4	3	2	1
Cohesion	20%	5	4	3	2	1
Conventions	20%	5	4	3	2	1

Apply rubric percentage to grade

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Student Feedback

- Individual graded reports – example
- Class feedback
 - Explained marking ranges, i.e. 70% is good!
 - Advice on common errors (and another plug for John's book!)

Concluding Remarks

- Early introduction to the importance of good communication skills
- Focusing on an interesting design project – helped with engagement
- Explain what we expect and provide tutorial support
- Use of GradeMark and PG Demonstrators to streamline the process and maximise the opportunities for timely and meaningful feedback
- An observation: many students just want their mark – how do we persuade them to fully make use of all this feedback?