Guide to a Suggested House Style University of Plymouth School of Civil and Structural Engineering

CONTENTS

Please note: These Appendices are at the end of this House

Style Section. Also the numbering used above is a separate system for this section.

1.0 INTRODUCTION

What are you trying to do and achieve with your reports?

The job of a report is to communicate information.

Your objective will rarely be just to display your intellectual wares.

In general you will be required to cover one or more of the following:

1. To describe
2. To explain
3. To specify
4. To evaluate and recommend
5. To persuade
6. To provoke debate
7. To instruct
8. To concede and apologise
9. To protest
10. To reject.

In the School typical reports might cover:

Informal reports	1, 2 and 3.
Formal reports	1, 2 3 and 4.
Design projects	1, 2, 3, 4, 5, and 7.

The teaching environment requires that through your report writing you try to impress the reader with your knowledge. However, clients, managers and the teaching staff are busy; only include relevant material and above all be succinct.

Not all the sections covered in the following description of the House Style will be required for every report you are required to prepare; be selective.

You will be given a Coursework Schedule which will outline all coursework in each subject area and the type of report required. Make sure you note whether a ‘formal’ or ‘informal’ report is required.

2.0 THE ORGANISATION AND LAYOUT OF YOUR REPORT – HOUSE STYLE

2.1 Front page.

This should contain

1. A pertinent, succinct and apt title.
2. Your name.
3. Your year, course and School.
4. Your pigeon hole number.
5. The date of submission.

2.1.1 Title

The title of a report should be chosen with care because it is the first item to catch the eye of the reader.

Titles that are too short may mislead by the brevity; those that are too long are difficult to remember and to quote for reference. The title should be no longer than 12 words.

If the title chosen is too short to express the content of a report sufficiently clearly then combine two statements into the title – first, the main title, a short statement to the reader giving the subject of the report; the second, a longer sub-title, giving information on the particular aspect covered.

e.g.

Soil compaction; (determination of) laboratory and in-situ density.

A title should normally not contain the following:

"A study of .....

"An investigation into .....

"A report on .....

etc.

2.2 Abstract

This should consist of one clear and concise paragraph, no more than 200 words long.

It should outline the nature and scope of the work and give the principal conclusions and recommendations. The abstract emphasises what is new and interesting. Write it last and check that all the points made are included in the main report.

An abstract is not always necessary nor should its length always be 200 words; its inclusion and length will normally depend on the nature and length of the main report. It will normally be omitted from informal reports but

would be included in long formal reports such as individual final year project report.

2.3 Table of contents

The table of contents lists the main headings, sub-headings, references and appendices, if any. Drawings, equations, tables and figures are not listed.

Headings and sub-headings should be phrased and numbered exactly as they appear in the text.

The intention of including a list of contents is not just to enable the reader to find the page on which they will be able to read about a particular aspect of the report. A well designed table of contents should show main headings and all sub-headings and the relationship of those parts by indentation. A clear numbering system should provide the reader with a clear intention of the pattern of ideas through which the paper will lead.

A table of contents would not normally be required for an informal report.

2.4 List of symbols, abbreviations and definitions

In large formal reports it is useful to include a list of new symbols, abbreviations and definitions used in a report. This does not mean that even when such a list is included, you need not define terms in the body of the report; all new terms, symbols or abbreviations must be defined in the text at the first point that they are used:

e.g.

First year civil engineering (C1) students are given a series of lectures on house style. The C1 students find this of no help whatsoever in improving their report writing.....

2.5 The main body of the report

The main body of the report contains the full information for readers who want complete details. The following arrangement is suitable for most purposes:

Introduction

Report on the work done

Results/Findings

Discussion/analysis/arguments

leading to

Conclusions

Recommendations

Acknowledgements

References

Appendices

These headings represent a full format; not all reports will require the inclusion of all sections. A selection must be made for the particular report task in hand. NEVER write a section under each heading just because the headings are there.

2.5.1 Style of presentation

When writing reports the impersonal style should be used. Normally, a passive style should be adopted.

Personal vs Impersonal

The author provides the .....

You provide ....

It was originally .....

I originally .....

Active vs Passive

The passage was read by leader. (Passive).

The leader read the passage. (Active).

In passive structures the agent of the action is named last. In some cases this can lengthen and lead to unnecessarily elaborate sentences. The main benefit of passive structures is to help produce the impersonal style.

e.g.

Active personal – We started the test

Passive personal – The test was started by us.

Passive impersonal – The test was started.

The length of a sentence should be related to the amount of information that can be absorbed by the reader in one block. When technical detail is presented use short sentences. Descriptive sections can use longer sentences.

2.5.2 Introduction

The introduction should provide the background for the work described in the body of the report. Beware of introducing into this section any information that you know as a result of having done the work e.g. results and conclusions (compare with contents of abstract).

The introduction should include:

1. Why the work was done or why the report was written.

2. What the report is about and its scope.

3. What limitations of time, personnel and materials were imposed.

A typical introduction for an informal report might be as follows:

1.0 INTRODUCTION

Earthworks can be controlled by defining required levels so density, using standard laboratory tests, and then by monitoring achieved levels of density on site.

This report presents the results of an in-situ density determination on a fine well-graded sand using the sand replacement apparatus.

Results obtained by other groups are also reported and used to assess the level of accuracy of the test method.

NOTE: The introduction should not be a repeat of the abstract; they perform different functions.

2.5.3 Report of the work done

The report of the work done should include:

1. The nature of the investigation.

2. The equipment used.

3. The procedure followed.

The section will inform the reader of the route through your report. It will signal your thought process and prepare the reader with useful 'sign posts' to which he can order the information he is given.

To do this effectively make liberal use of heading sand sub-headings; this makes for a sense of comfortable progress on the part of the reader, helping him to assimilate new information quickly without the need for frequent re-reading and checking in subsequent sections.

2.5.4 Results and findings

The results and findings sections of the main text should include just the main facts to support the argument you are presenting. Results and findings in detail should be presented in an appendix to the main report.

2.5.5 Discussion and analysis

The discussion and analysis section includes a statement of relevant theory. In the discussion you will state the inferences you draw from your study/experiment. Drawing inferences means talking about your results, not simply repeating them.

A discussion of what the facts imply must include a statement of the conclusions drawn.

2.5.6 Conclusions

The most important part of a report. With short reports this section is not always necessary if adequately covered in the discussion section. However, to provide practice in writing short and concise statements a conclusion will ALWAYS appear in your reports.

Examples.

1. The Sand Replacement Test is suitable for determining in-situ density in non-cohesive soils only. (Assumes test has been carried out on a variety of soil types).

2. The in-situ dry density of the well graded dry sand in the test bed is $2.0 Kg/m^3$.

Note: Conclusions are numbered sequentially.

2.5.7 Acknowledgements

In this section acknowledge any substantial contributions from other individuals. This section is important to avoid unjustified charges of copying or cheating. In all cases it is the individual's responsibility to check with the lecturer exactly what the limitations on group discussion/sharing are.

2.5.8 References

In the references section give details of any sources of information that you have quoted in your report.

2.5.8.1 Layout

It is important that ALL details are given for each reference. See Appendix 1.

2.5.8.2 Citing References in Text

Within the body of your report, the least obtrusive way to cite references from the reader's point of view, is to use superscript numbers.

Williams and Kennedy have reported a new approach to the teaching of the general design process based on the use of actual construction sites.

2.5.9 Appendices

Only material essential to the main argument should appear in the body of the report. Any additional data worth recording should be relegated to an appendix. Appendices are NOT part of the main report, and have their own tables, figures and references. Appendices are included in the sequence numbering used throughout the report.

3.0 ILLUSTRATIONS AND CALCULATIONS

Every illustration should be given a figure number and brief descriptive title.

Avoid using colours as these are lost when copying. It is best to do your work in black ink.

Ensure all axes have titles and are given scales but avoid unnecessary detail. All drawings and graphs should be read from the bottom right hand corner i.e. do not put the titles upside down!

You will be given guidance on how to present calculations during the course. However, the main points are that they should be neat, understandable and correct. Answers should be put on the right hand side of the sheet and units stated.

A4 calculations and drawing pads are available from the School. Theses should e used when submitting all calculations for a formal report. An example of the sheet is given in Figure 1.

4.0 UNITS AND QUANTITIES

See Appendix 2.

5.0 THE USE OF HEADINGS AND NUMBERS

This section will be treated as an example.

5.1 Formal and Informal Headings

It helps if you make generous use of headings and sub-headings. Headings help to break text into manageable sections and act as signposts, pointing out what is in each section.

Formal headings such as PROBLEM DISCUSSION are not as useful as informative headings which focus attention on the essences of the section.

Explore the relative importance of the divisions and sub-divisions by use of capitals and lower-case letters and by moving successive sub-divisions to the right.

1. <u>CAPITALS UNDERLINED</u>
2. CAPITALS NOT UNDERLINED
3. <u>Lower case underlined</u>
4. Lower case not underlined

5.2 System of numbering

5.2.1 The range of systems available.

Three systems are widely used:

1. The decimal system
2. Mixtures of numbers and letters

3. The HMSO system

5.2.2 The decimal system

The School has adopted the decimal system.

In this system, the headed sections and sub-sections only are numbered. (In HMSO system every paragraph is numbered). There can be any number of paragraphs in a section of sub-section.

Numbering to three or four places of decimals is usually a sign that grouping and sub-division of ideas needs to be revised.

To set in a list within a sub-section, use simple numbers (as in 5.2.1).

6.0 CHECKING YOUR REPORTS

6.1 Examine the report as a whole

a. Are all figures necessary?
b. Is the length of text necessary?
c. Do any figures reproduce tables?
d. Do all figures and tables have a number and caption?

6.2 Examine the title, contents, abstract and introduction.

a. Do they agree?
b. Does each fulfil its proper function?
c. Does the abstract contain less than 200 words?
d. Does the title contain less than 12 words?

6.3 Examine the headings.

a. Are they consistent and correctly numbered?
b. Are references complete and correct?
c. Is each sentence clear, unambiguous and grammatical?
d. Check your spelling!

REMEMBER it is the intention that in the third year you will put all the foregoing into operation. In the first and second years you will be practising!

7.0 INFORMAL REPORTS

Most of the reports which you will write in the School will be of the 'informal' type. This does not mean that they are to be in rough or that you can use poor English. An informal report, as opposed to a formal report, is to save <u>you</u> time in writing up.

The main body of an informal report will be results, graphs, calculations, observations and conclusions. The observations and conclusions are the most important feature.

For an informal report it is often only necessary to include the laboratory sheet to cover 'procedure' but sometimes a diagram is required e.g.

8.0 ACKNOWLEDGEMENTS

To Professor C.K. Kennedy who made the first draft of this report.

9.0 REFERENCES

1. WILLIAMS, C. and KENNEDY, C.K. A new approach to the teaching of design in civil engineering. Proceedings of the World Conference on Education in Applied Engineering Technology, Cologne, West Germany, April 1984.

Clive Williams
April 1993

Name	Project FIGURE 1	Date
Pigeon Hole No.	Element	
B.S. Ref	Calculation	Output

UNIVERSITY OF PLYMOUTH
School of Civil and Structural Engineering
Palace Court, Palace Street, Plymouth, PL1 2DE
Telephone: 01752 233664/5 Fax: 01752 233658

APPENDIX 1

HOW TO QUOTE REFERENCES

Virtually no piece of scientific writing occurs without reference to previously published material. You have a duty to use citations to give credit to other people's work when you refer to it in your own writings (essays, projects etc). You must give the appropriate credit in the text and provide sufficient information in your list of references to enable your source to be located. There are accepted conventions for making these references, both within the text and in a list of references at the end of a piece of work.

A. WITHIN THE TEXT

In the Harvard System, literature is referred to by author(s) name and year,

e.g.

"Sprague & Williams (1976) suggested that the static load of ...."

or

"The magnitude of the seismicity measured around the Kariba Dam has been shown to be related to the water levels of the impounded lake (Van Heusen & Gupta, 1991)"

If more than two authors are involved, it is permissable to refer to just the first author followed by *et al* e.g. Reiskind *et al* (1988), however, strictly speaking the first time they are referred to the full list of authors should be given *viz* Reiskin, Seamon & Bowes (1988).

In the Numeric System of citation, literature is referred to in the text by the use of numbers. The numbers appear in brackets or be shown as a superscript, with the first reference as number 1, the second number 2, and so on. For example:

"In a recent study (1), it has been shown that ...."

or

".... an alternative interpretation has been presented by Smith[2]".

B. IN THE LIST OF REFERENCES

The minimum information you should include for a journal article is:

Author of article, title of article, title of journal, volume no, part no (if there is one), year of publication, page numbers of the article.

For books the minimum is:

Author, title of book, edition (if later than the first), place of publication, date of publication.

In the Harvard System items are listed alphabetically by author(s) name and chronologically within multiple reference to the same author(s). In the Numerical System items are listed numerically i.e. in the same order as first citation in the text.

The information presented will vary for references to different types of material. Examples are given below:

1. A reference to a journal would be as follows:

   Richards, P.A.L. (1989). Permeability protocol for the compacted clay liner at metropolitan Toronto's Keele Valley landfill. *Canadian Journal of Civil Engineers*. Vol. 16(4), p 552-559.

   [author(s), date, title of paper, journal title, volume no. (issue), pages].

2. A reference to a book

   Whitehead, H. (ed) (1981) United Kingdom offshore legislation guide. London: Kogan Paul. [editor(s), date, book title, place of publication: publisher, pages]

3. A reference to an edited book:

   White, J.B. (ed) (1988). Waste water treatment. London: Edward Arnold. [editor(s), date, book title, place of publication: publisher, pages]

4. A reference to an edited book or conference proceedings would appear as:

   Jones, K.B. (1992). Designing for rural areas. IN Merritt, F.S. (ed). Building design and construction handbook. New York: McGraw Hill, p.56-78

In the Numeric System the references are preceded by the reference number and the date moved to the end of the reference in the case of a book and after the volume (and part) number in the case of a journal.

e.g.

1. Richards, P.A.L. Permeability protocol for the compacted clay liner at metropolitan Toronto's Keele Valley landfill. Canadian Journal of Civil Engineers. Vol. 16(4), 1989, p.552-559.
2. Whitehead, H. United Kingdom offshore legislation guide. London: Edward Arnold, 1988.
3. White, J.B. (ed). Waste water treatment. London: Edward Arnold, 1988.
4. Jones, K.B. Designing for rural areas. IN Merritt, F.S. (ed) Building design and construction handbook. New York: McGraw Hill, 1992, P.56-78.

NOTES

The journal title should be in italics but in handwriting and typescript this may be indicated by underlining. The purpose of this is to make it clear which part of the reference is the journal title.

The journal title may be abbreviated – use the World List of Scientific Periodicals shelved at 0.16.05 Wor in the Library.

For further information on the Numeric System you should refer to the relevant British Standard (BS 5065, 1978).

You will be given instructions for citing references with your instructions for writing up your projects. Conventions vary slightly, we have shown you one way here but you should consult your Project Writing Notes for any variation used within your Department.

APPENDIX 2

UNITS AND QUANTITIES

16.1 Quantity

Throughout this appendix, the word ‘quantity’ is used with its meaning of ‘a physical property that can be measured’ (such as mass or length) and not with its other meaning of ‘amount’. The magnitude of any physical quantity is shown as a number followed by the name of a unit of that quantity or by a symbol representing that unit, for example, 20 meters or 20m.

16.2 SI units

All Laboratory work (with a few exceptions mentioned in Paragraph 16.8) will be reported in the International System of Units, for which SI is the internationally agreed and understood abbreviation. It follows that, wherever practicable, measurement should be made in this system, rather than in other systems and then covered. The SI is a coherent system including three classes of units, base, supplementary and derived units.

16.3 Base units

The SI is founded on the seven base units listed in Table 1.

Quantity	Name of base SI unit	Symbol
length	metre	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
thermodynamic temperature	kelvin	K
amount of substance	mole	mol
luminous intensity	candela	cd

16.4 Supplementary units

These two units, listed in Table 2, may be regarded either as base units or as derived units.

TABLE 2

Quantity	Name of supplementary SI unit	Symbol
plane angle	radian	rad
solid angle	steradian	sr

16.5 Derived units

Units of all other quantities are derived as products or quotients or combinations of two or more of the nine units listed in Tables 1 and 2; the term ‘coherent’ in the description of the SI means that no multiplying factor other than unity is used in any of the derivations. Thus the SI unit of linear velocity is the ??????

TABLE 4

Factor by which the unit is multiplied	Prefix	
	Name	**Symbol**
10^{12}	tera	T
10^{9}	giga	G
10^{6}	mega	M
10^{3}	kilo	k
10^{2}	hecto	h
10	deca	da
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f
10^{-18}	atto	a

Because the name of the SI unit of mass, kilogram, already includes the prefix 'kilo', the names for multiples and sub-multiples of the unit of mass are formed by adding the prefixes to the word 'gram', for example milligram not microkilogram for 10^{-6} of the base unit.

The symbol of a prefix is considered to be combined with the SI unit symbol (except kg) to which it is directly forming with it the symbol for a new unit which strictly according to Section 16.5 is not an SI unit since it contains a multiplying factor other than unity. However, it may be treated exactly as an SI unit except that further prefixes should not be added; for example, the SI unit of electrical capacitance is the farad (F) and

10^{-12} F = 1 pF (not 1 μμ F)

Further, the new unit(s) can be used in exactly the same way as SI units to form compound units; for example,

$1\text{cm}^3 = (10^{-2}\text{m})^3 = 10^{-6}\text{m}^3$

$1\mu\text{s}^{-1} = (10^{-6}\text{s})^{-1} = 10^{6}\text{s}^{-1}$

$1\text{mm}^2/\text{s} = (10^{-3}\text{m})^2/\text{s} = 10^{-6}\text{m}^2/\text{s}$

In fractional compound units only one prefix should be used; it may be placed in either the numerator or the denominator; for example, stress may be expressed in MN/m^2 or N/mm^2.

TABLE 6

Quantity	Name of unit	Unit symbol	Definition
energy	electronvolt	eV	1 electronvolt is the kinetic energy acquired by an electron in passing through a potential difference of 1 volt in vacuum; 1 eV = 1.602 19 x 10^{-19} J (approximately)
mass of an atom	atomic mass unit	u	1 (unified) atomic mass unit is equal to the fraction 1/12 of the mass of an atom of the nuclide 12_C: 1 μ = 1.660 53 x 10^{-27}kg (approximately)
length	astronomical unit parsec	AU* pc	1 AU = 149 600 x 10^6m (System of astronomical constants. 1964). 1 parsec is the distance at which 1 astronomical unit subtends an angle of 1 second of arc: 1pc = 206 265 AU = 30 857 x 10^{12}m. (approximately)
pressure of fluid	bar	bar	1 bar = 10^5 Pa

*This unit has no international symbol: AU is the abbreviation of the English name; the abbreviation of the French name is UA.

Prefixes given in Table 4 may be applied to some of the units in Tables 5 and 6; for example millilitre (ml) and megaelectronvolt (MeV).

Compound units may sometimes be formed from SI units and their multiples and the units in Tables 5 and 6; for example kg/1 and km/h.

16.9 Rules for writing physical quantities

These rules have been followed throughout this Appendix so far and should already by clear. However, they are collected together here for convenience.

Numbers: the decimal point should be written as a dot on the line (.) exactly like the full stop in ordinary punctuation, and should always be preceded by a figure (if necessary a cypher). Starting from the decimal point, or the position it would occupy if it were written, the figures in both directions or either direction should be separated by single spaces into groups of three to facilitate reading: for example,

27 000 52 438 000 1 310.002 71 0.000 051 8

Groups of four figures can be written without the gap unless they form part of a set of values including longer numbers; for example.

5678 or 5 678 0.000 7 or 0.0007