



BUILDING UNIT
DEPARTMENT OF EDUCATION
PORTLAOISE ROAD
TULLAMORE
CO OFFALY

DESIGN TEAM PROCEDURES

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PREFACE

The Building Unit expect Design Teams to undertake thorough pre-planning of each project before tenders are invited and to carry out the Design Cost Control Procedures as set out in the publication “National Standard Building Elements and Design Cost Control Procedures” published by An Foras Forbartha – Second Edition, April, 1983.

Although each member of the Design Team has a distinct role to play, he must fully understand and accept, the interdependence of all the members of the Design Team for effectively implementing the client’s objectives, implicit and explicit in the Brief, and for carrying out the Design Cost Control Process.

Approval, by the Building Unit, of Drawings, Specifications and Bills of Quantities is not to be regarded as an acceptance by the Department that these documents are correct, in all respects, for the purpose of executing the subsequent building contract, and does not relieve the Design Team of its responsibility to protect the Clients’ interests in this regard.

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STAGE 1 – SITE SUITABILITY, BRIEFING AND SITE REPORT

1.1 Site Suitability

Since costs are determined by the suitability of the site for the project, it is assumed that a careful evaluation of the available sites will have been carried out and a Report submitted (see footnote ¹) to the Building Unit prior to the Briefing Meeting.

1.2 Briefing

The preparation of the project design shall not commence until:

- 1.20 An approved Schedule of Accommodation has been agreed;
- 1.21 A Briefing Meeting between the Client, the Design Team and officers of the Building Unit has taken place;
- 1.22 Cost limits have been notified, and
- 1.23 The degree of phasing required, if any, has been established.

1.3 Site Report

A site report, prepared by the Design Team, shall be submitted for preliminary consideration and approval in principle. It shall include the following:-

1.30 An accurate survey drawing of the site to at least 1:5000 scale showing the position of existing buildings, boundaries, contours and public services. Adjoining properties, particularly those in third party ownership should be shown. A location map to 1:1000 scale shall be included. North point and direction of prevailing wind must be indicated.

1.31 Report on the nature of the sub-soil, substantiated by trial holes and/or borings.

1.32 Report on the availability, location and adequacy of water supply, electricity, gas, telephone and T.V. services, surface water and sewage disposal.

1.33 Report on the availability, location and adequacy of the proposed access and any special requirements of Statutory Authorities.

Note: The drawn information in 1.30, 1.31, 1.32 and 1.33 should be incorporated in one drawing.

1.34 Outline Planning Permission with evidence of appeal where appropriate.

- 1.35 A preliminary report from the Quantity Surveyor on the cost implications of development on the site.

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¹ Submissions by Design Teams at all stages of the project shall be made as follows:-

- Where the Minister for Education is the client, direct to the Building Unit;
- In all other cases, through the appropriate client.

STAGE 2 – OUTLINE SKETCH SCHEME

2.1 Outline Sketch Scheme

When the site report has been found satisfactory, a written request will be issued for the submission of an Outline Sketch Scheme. It shall include the following:-

- 2.10 Architects report describing the general design concept and a short appraisal of alternative solutions considered, with conclusions and recommendation. The report should illustrate with appropriate reference to attached reports for the individual members of the Design Team, how particular site feature or site problems are being dealt with and generally how the proposed design will facilitate speedy and economical construction.
- 2.11 Civil/Structural Engineer's report on the proposed scheme, to include his comments on the design in terms of ease and economy of construction.
- 2.12 Services Engineer's report on proposed systems and the thermal performance of the building. The report should highlight any advantages/disadvantages arising from the design which affect the services installation or the thermal performance.
- 2.13 Quantity Survey's report on the cost implications of the proposed design, with due regard to the individual comments of the other members of the Design Team. It should include the Outline Cost Plan (available from the Building Unit) within which the design will be developed in more detail.
- 2.14 Location Map of 1: 1000 showing how the site relates to its surroundings.
- 2.15 Site plan to 1: 500 scale showing the building, boundaries, entrances, boiler house, sub station, services, roads, paths, parking, play areas and any special requirements of Statutory Authorities. The north point and direction of prevailing wind should be indicated.
- 2.16 Floor plans and roof plan to 1:200 scale with areas of spaces and north point indicated thereon.
- 2.17 Cross-sections to 1: 200 scale through the building illustrating the relationship with site levels, the general structural solution and the design approach to natural lighting and ventilation.
- 2.18 Preliminary specifications describing materials and methods of construction.

- 2.19 Report on preliminary discussions with the Fire Authority.
- 2.20 The area in 2.16 to be confirmed by Schedules of Accommodation (Forms S.T.2 and S.T.3 in the case of second level schools)
- 2.21 A programme indicating the time (in weeks) required by the Design Team for each of the main stages of work as set out in this document.

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STAGE 3 – DEVELOPED SKETCH SCHEME

3.1 Developed Sketch Scheme

When the outline sketch scheme has been found satisfactory a written request will be issued for the submission of a Developed Sketch Scheme. It shall include the following:

- 3.10 Site Plan to 1:500 scale extended to show building boiler-house and sub station, full site development, including contours, finished levels, boundaries, entrances, roads, paths, parking, play areas, external roads and drains. North point and prevailing wind must be indicated.
- 3.11 Floor plans to 1:100 scale indicating the layout of furniture and equipment.
- 3.12 Sections and elevations to 1:100 scale.
- 3.13 Roof plan to 1:100 scale.
- 3.14 Sections to 1:50 scale through selected portions of the building illustrating the proposed method of construction, natural lighting and ventilation, integration of services, finishes etc.
- 3.15 A three dimensional drawing to illustrate the internal spatial concept.
- 3.16 Detailed layouts of special subject rooms to at least 1:50 scale showing layout of furniture, fittings, accompanied by room data sheets.
- 3.17 Outline specification of materials and methods of construction proposed, accompanied by a schedule of finishes.
- 3.18 Preliminary report and drawings to a suitable scale indicating Civil/Structural Engineers proposals.
- 3.19 Preliminary report and drawings to 1:100 scale indicating services Engineer's proposals for heating and lighting systems, and a completed Energy Information Form (available from the Building Unit).
- 3.20 Cost Plan and Quantity Surveyors report. (The Building Unit's cost plan form must be used).

STAGE 4- DETAIL DESIGN

- 4.1 When the Developed Sketch Scheme has been found satisfactory, a written request will be issued for the submission of Detail Design documentation.
- 4.2 It is essential that through pre-planning of the building, services and external works should take place at this stage. This pre-planning should be of such a nature that variations in the post-contract stage will be kept within the scope of the contingency sum.
- 4.3 Nominated sub-contracts (PC sums) in the subsequent Bill of Quantities (Stage 5) will be limited to mechanical and electrical services, windows and furniture (built in).
- 4.4 In general, working drawings will not be the subject of detailed examination in the Building Unit. Any deviations at this stage from the developed sketch scheme should be identified by the Design Team for specific consideration and approval by the Building Unit.
- 4.5 The following documents should be submitted:
 - 4.50 Planning/Bye Laws approvals including evidence of appeal when appropriate. Evidence should also be submitted that the conditions attached to the approvals are being met.
 - 4.51 Report on any conditions imposed by the Fire Authority, how these conditions are being met and whether or not the Fire Officer has indicated his agreement.
 - 4.52 Site plan to 1:5000 scale showing full site development, as listed in 3.10.
 - 4.53 Drainage plan to 1:100 or 1:200 scale indicating foul and surface water drains, and invert levels.
 - 4.54 Floor Plans to 1:100 scale.
 - 4.55 Sections and elevations to 1:100.
 - 4.56 Roof Plan to 1:100 scale.
 - 4.57 Section 1:5 scale through the external wall and sections and details to not less than 1:20 scale through selected portions of the buildings.
 - 4.58 Specification of materials, including a Schedule of Finishes.
 - 4.59 Structural Engineer's specifications and drawings indicating the structural members of the building.

- 4.60 Mechanical and Electrical Engineer's specifications, schedules and drawings to a scale of not less than 1:100 or such larger scale as may be required showing heating, hot and cold water, gas, electricity, communications (Telephone, Public Address etc.) and external services.
- 4.61 A Cost Plan embodying the cost checks carried out in the Detail Design. (The Building Unit's Cost Plan must be used.)

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STAGE 5 – BILLS OF QUANTITY

- 5.1 Preparation of the Bills of Quantities (including those for mechanical and electrical services) and other contract documents should not proceed until written agreement is issued to the Client.

The Building Unit shall have decided, at Stage 1 Briefing Meeting, whether Bills of Quantities or Schedules of Rates are required for the Mechanical and Electrical Services and shall nominate the member of the Design Team who will prepare the designated documentation.

- 5.10 Bill of Quantities for the main contract shall be prepared in accordance with the current Method of Measurement of Building Works agreed between the Royal Institution of Chartered Surveyors and the construction Industry Federation.

Bills of Quantities for mechanical and electrical services shall be measured in accordance with a method of measurement to be agreed with the Building Unit.

- 5.11 The Building Unit will notify the Design Team of the form, type and conditions of contract to be used.

- 5.12 In the interests of pre-planning and cost control the Bill of Quantities should not contain any P.C. sums for nominated sub-contracts with the exception of :-

- mechanical services;
- electrical services;
- windows manufactured by specialist contractors;
- furniture (built-in) and fittings.

- 5.13 The P.C. sum for the items listed in 5.12 above should be dealt with as follows:

Mechanical and Electrical Services – Bill of Quantities or Schedule of Rates as specified.

Windows – Drawings and Specification.

Furniture – no documentation necessary at this stage, however, work should have commenced on the preparation of such documentation during this stage and be completed for tender action within one month of receipt of main tender.

- 5.14 If the Design Team considers the inclusion of other P.C. sums in the Bill of Quantities to be necessary, application should be made to the Building Unit for approval, supported by a statement listing the items, their value, and the reason for proposing their inclusion.

5.15 The Bill of Quantities shall provide that:

- 5.150 Each contractor must submit a Programme of Work e.g., Barchart, with his tender.
- 5.151 When requested by the Architect, the lowest evaluated Contractor shall submit, within ten working days, a detailed Programme of Work related to the Period for Practical Completion. The Programme should include for the main Nominated Sub-Contractors and should contain details of resource needs for each phase of the Programme. The Programme of Work must be agreed with the Employer and it shall form part of the contract documents.
- 5.152 The Contractor's arrangements for the project should be agreed with the Employer and the Building Unit and such agreement is to be recorded in pre-contract Minutes of Understanding forming part of the contract documents.
- 5.153 Where the design of any particular project is characterised by the ease and economy of construction referred to in paragraphs 2.10 and 2.11, then the Bill of Quantities should convey this concept to those tendering for the project.

5.16 The following documents should be submitted:

- 5.160 Bill of Quantities – Main Contract.
- 5.161 Bill of Quantities or Schedule of Rates as agreed – Mechanical Services.
- 5.162 Bill of Quantities or Schedule of Rates as agreed – Electrical Services.
- 5.163 Contract documentation – any other approved P.C. inclusions.

5.17 When the contract documentation has been found satisfactory a written confirmation will be issued by the Building Unit.

STAGE 6 – TENDER ACTION AND REPORT

6.1 **Tender Action**

Tenders should not be sought until specific written approval has been given by the Building Unit.

Tenders for nominated subcontractors should have the same tender date as for the main contract.

6.2 **Tender Report (Preliminary)**

On completion of the examination of the tenders, the following documents shall be submitted:

- 6.20 A list of tenders and the amount of each tender received for the main and nominated subcontracts.
- 6.21 A copy of the completed Form of Tender of the recommended Contractor.
- 6.22 Architect's report.
- 6.23 Quantity Surveyor's report.
- 6.24 Consulting Engineer's report on mechanical and electrical subcontracts.
- 6.25 A Cost Analysis of the recommended tender including the adjustment of nominated subcontracts. (The Building Unit's Cost Analysis form must be used).
- 6.26 A list and the amounts of reductions which may be necessary to meet Cost Limits. Failure in this regard will mean a delay in the completion of the tender examination.

6.3 On completion of the examination of the preliminary tender report, the Building Unit may issue approval for the Contractor to obtain a Bond.

6.4 **Tender Report (Final)**

On completion of the examination and agreement of the Contractor's Detailed Programme of Work and his Management Arrangements as set out in 5.151 and 5.152, the Design Team should submit Final Tender Report including copies of:

- 6.40 The Detailed Programme of Work.
- 6.41 Resources related to the Detailed Programme of Work.

- 6.42 The Contractor's management arrangements for the project.
- 6.43 Projected cashflow with 'S' curve.
- 6.5 When the tender reports have been adjudged by the Building Unit to be satisfactory, the question of approval to commence building will arise. Work should not commence until written approval has been given by the Building Unit.
- 6.50 One of the terms on which approval to commence work will be given is that the client and members of the Design Team will give a written undertaking that the work to be carried out under the approved Contract Sum will be in accordance with the agreed schedule of accommodation, and that no variations will be carried out other than those provided for in the Contingency Sum and the Price Variation Clause, except with the express approval of the Building Unit.
- 6.6 When the contract has been signed, the Design Team shall submit the following documents:
- 6.60 A copy of the priced Bill of Quantities.
- 6.61 A copy of the Appendix Section of the signed Conditions of Contract.

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STAGE 7 – POST CONTRACT COST CONTROL

- 7.1 It must be stressed that each member of the Design Team is individually and collectively responsible in the effective management of the project to achieve its completion within the time and costs approved for the project.
- 7.10 Overall Post-Contract Control of the project will be co-ordinated by the Quantity Surveyor. The Quantity Surveyor will, subject to 7.11, prepare the Financial Reviews, Interim Valuations and Final Account for all elements of the project in consultation and agreement with other members of the Design Team who will confirm their agreement to the Quantity Surveyor of the amount for inclusion in the overall Financial Reviews, Interim Valuations and Final Account respectively.
- 7.11 Where the Bill of Quantities for the Mechanical and Electrical Service are prepared by the Services Engineer, the Services Engineer will prepare the Financial Reviews, Interim Valuations and Final Account, and certify them to the Quantity Surveyor for inclusion in the overall Financial Review, Interim Valuation and Final Account respectively.

7.2 **Monthly Financial Review/Progress Report**

As it is essential that the Employer is aware of the financial position and progress of the project at all times during the contract, a Financial Review of the contract shall be furnished to the Employer and the Building Unit each month on Forms Q.S.1 and 2 (prepared by the Quantity Surveyor on behalf of the Design Team). The Financial Review shall be accompanied by a summary progress report from the architect, supported by brief statements from the structural/civil engineer and services engineer, comparing progress to date with the agreed programme of work, highlighting any areas of delay and then action being taken to maintain the agreed Programme.

7.3 **Quarterly Progress Report**

The monthly progress reports shall be expanded quarterly to compare physical execution and cash flow with the programme of work and estimated cash flow agreed with the contractor. Any shortfall in cash flow as against estimated, and its relationship with progress on physical execution shall be fully explained.

7.4 **Variations**

As pre-planning is the basis of the Design Team Procedures only Variations attributed to wholly unforeseen circumstances should arise. Should any member of the Design Team propose to vary the quality or quantity of work in the Contract Sum then such proposals should be discussed with the other members, before any decision is implemented, so that the Quantity Surveyor is able to assess the cost implications for the contract as a whole.

Should variations occur they shall be dealt with as follows:

- 7.40 Individual Extras, not exceeding €635 each may be authorised by the Architect without prior reference to the Building Unit and should be included in the next submission of Forms Q.S.1 and 2.
- 7.41 Individual Extras, exceeding €635 each will not in any circumstances be sanctioned by the Department unless they are notified in advance to the Building Unit and approval issued on Form Q.S.3.
- 7.42 Those extras which could not have been foreseen in the course of planning and arise from exceptional circumstances may only be sanctioned within the contingency sum (normally 2%) which is incorporated in the approved building contract. Extras arising out of the Price Variation Clause are excluded from this category.
- 7.43 It is important that all variations, even those incurring no additional cost, should be notified to the Building Unit where such variations would affect the Schedule of Accommodation, Room Layouts, etc.

7.5 **Price Variation Clause/Extensions of Time**

Increase under the Price Variation Clause may not be approved if they are incurred after the Date of Practical Completion or the extended date as approved by the Building Unit.

The Building Unit should be consulted in advance of any decision to extend Time for the Practical Completion of the Works. Such consultation should contain a report on the circumstances of and the contractual reasons for the proposed extension. An extension of Time should not be granted until such consultation has taken place.

7.6 **Draft Final Account**

The Design Team shall submit a copy of the proposed Final Account, in advance of agreement with the Contractor, in accordance with 9.13 to 9.18 inclusive. Agreement should not be entered into with the Contractor until the Design Team has consulted with the Building Unit.

STAGE 8- PRACTICAL COMPLETION AND HANDOVER OF BUILDING

- 8.1 As soon as practicable after the Certificate of Practical completion has been issued and the building handed over to the Client, the design Team should carry out the following:
- 8.10 Explain the design concept to the occupiers so that maximum benefit can be gained from the facilities provided.
 - 8.11 Inform the client how to operate and maintain the building and its equipment at optimum efficiency with particular emphasis on energy conservation.
 - 8.12 Provide a comprehensive Building Maintenance Manual.
 - 8.13 Issue a comprehensive set of as-built architectural and services drawings to the client.
- 8.2 Prior to the issue of the Final Certificate the Design Team should agree and confirm, in writing, with the Client that all defects have been corrected within the Defects Liability Period.

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STAGE 9 – FINAL ACCOUNT

- 9.1 The Final Account documentation, to be submitted to the Building Unit, shall confirm the agreement of all members of the design Team to the adjusted Contract sum and shall include:-
- 9.10 Architect's Report.
 - 9.11 Civil/Structural Engineer's Report.
 - 9.12 Engineer's Report on Mechanical and Electrical Services.
 - 9.13 Quantity Surveyor's Report.
 - 9.14 List of Variations referenced to approvals. (The value of Omissions and Additions in respect of each Variation should be given).
 - 9.15 List showing the adjustment of P.C. sums.
 - 9.16 List showing the adjustment of Provisional Sums.
 - 9.17 List of increases under the Price Variation Clause, including those of nominated sub-contractor and suppliers.
 - 9.18 List with costs, of items not included in the Basic Building Cost in respect of furniture and fittings (including sanitary fittings).
 - 9.19 A copy of the site plan (1:500) and floor plans (1:100) as built.
 - 9.20 Schedules of accommodation (Forms S.T.2 and S.T.3 in the case of second level schools) to correspond with 9.19.
 - 9.21 Design Team final fee accounts and a certified statement of site supervision costs.