

CIC Guidelines

Preface, Preamble and Glossary

Preface

The New Zealand Construction Industry Council (CIC) is a not for profit industry association of associations in the building and construction design and property sectors. It is the collaborative voice of the built environment industry in New Zealand and operates at the interface between government (central and local) and industry.

The Council was formally established in 2003, and emerged from an informal association of organisations which previously operated under the name of the Construction Liaison Group.

CIC Members are also not-for-profit organisations and bodies for professions involved in the delivery of our built environment—designers and specifiers (architects, designers, engineers etc.), contractors and suppliers (manufacturers, distributors, contractors, builders etc.) and a range of other building professionals (compliance, research, surveyors, developers etc.).

The CIC is a collaborative group for information, networking, research and advocacy towards a better built environment for all New Zealanders. An Executive Council leads the proactive strategy and a wider General Council informs and connects. The CIC interacts with users of the built environment through the media and through CIC Members.

The Council began development of the Design Documentation Guidelines in 2003 following growing concerns of the impact (and limited understanding) of poor documentation on the building industry in New Zealand. At that time guidelines were the subject of wide industry consultation, as well as an international search on best practice.

Since their original adoption by the industry the Guidelines have become widely adopted and used, and now represent the single most cohesive interdisciplinary Design Guidelines available in New Zealand.

Developments in the industry are ongoing. Matters such as Health and Safety in Design and the Workplace, Environmentally Sustainable Design, and Building Information Modelling have become integrated into the delivery of building processes.

The wide use of the Guidelines has demonstrated some omissions in them, and there is now a wish to see the Guidelines include all stages of the design and construction process. The inclusion of new stages will see the Guidelines develop into this comprehensive document.

A more structured process of periodic review is anticipated, which we believe should be undertaken every 3–5 years.

NZCIC is again grateful for the considerable time and effort generously contributed by the individuals of the Committee and their Subcommittees.

The industry has obligations to the Clients and Consumers who contract their services to ensure that they know what they have commissioned, and what can be expected for the fees charged. Genuine competition achieved through transparency, responsibility and fair play throughout all project stages are seen as important to the industry.

These Guidelines are recommended for use in all building projects, and are considered important in the overall development of building projects. They are part of a suite of guidelines and best practice for the industry, as well as for Clients and decision makers. Suggestions for their improvement as a result of their use are always welcome.

— **David Kelly, Chairman**

Preamble

Introduction

The ultimate aim for all involved in designing and constructing all aspects of a building should be to enhance the quality of our built environment.

The design is one part of this process, and these guidelines establish for all parties involved in a project their tasks and responsibilities, together with coordination and design interfaces through all disciplines. Careful identification of client brief and needs, together with advice by consultants to the clients on the most advantageous outcomes, are important ancillary functions that should be linked to these Guidelines. The commentary below provides background to the development of the attached Guidelines and outlines how the Guidelines may be used.

The Guidelines are intended as general checklists and benchmarks to define the design process for 'building' projects, including interiors, as distinguished from civil works, industrial process and infrastructure projects. They are intended to provide an industry-wide multi-disciplinary schedule of design activities typically undertaken. Noting that no two projects are the same, Clients and consultants should tailor this document to suit the project specific requirements.

The Guidelines now incorporate the major developments in building design including Health and Safety in at Work (HSW), Environmentally Sustainable Design (ESD), and Building Information Modelling (BIM).

Since the introduction of the Design Guidelines they have been widely adopted through the industry. It is now considered appropriate to include all stages of the design and project management processes. This should enable the industry to define the roles of all parties to the design process through all phases of a project, from Project Establishment to Post Completion.

The original Guidelines included particular schedules for each design discipline and design phase which made developing an overall scope document, where each party had visibility as to the roles and inputs others, difficult. The new format combines the activities undertaken by each Consultant through each of the project stages. This will allow a full cross-disciplinary view of the design by stage, which should avoid scope omissions and deliver a clear understanding of inter-disciplinary activities.

The Guidelines are intended to be edited to reflect to the appropriate level of project complexity and service agreed with the Client. They are presented as an editable PDF which allows for efficient preparation of the document.

Background

The quality of design documentation, and the cooperation of the entire project team, is critical to the success of any building project.

Buildings today are much more complex in all facets, including not only the physical aspects of form, structure, services, envelope and interiors, but a process that is informed by procurement, environmental, safety and post occupancy requirements.

Who has created the guidelines?

The document has been drafted by a committee endorsed by the NZ Construction Industry Council (NZCIC). The committee consists of representatives from the organisations listed below who have established their own discipline-specific subcommittee and consulted widely to ensure that the Guidelines are workable and will benefit the entire building industry.

- ACENZ (Association of Consulting Engineers of New Zealand)
- ADNZ (Architectural Designers New Zealand)
- BOINZ (Building Officials Institute of New Zealand)
- DINZ (Designers Institute of New Zealand)
- IPENZ (Institution of Professional Engineers New Zealand)
- NZIA (New Zealand Institute of Architects)
- NZIOB (New Zealand Institute of Building)
- NZIQS (New Zealand Institute of Quantity Surveyors)
- Project Managers
- RMBF (Registered Master Builders Federation)

The Guidelines have been co-ordinated in process and terminology to be consistent for all participants in the building industry. The Guidelines have strong support from the professional bodies listed above, and there is a shared intent that the Guidelines continue as the industry wide best practice document.

Preamble

What is the purpose of the guidelines?

The purpose of the Guidelines is to clearly define and communicate to all parties involved in a project:

- responsibilities and deliverables each party has through all project stages the scope of services the various parties provide to the Client
- the interactions and coordination required between all parties;

How are the guidelines used?

The Guidelines outline the stages that all building projects go through irrespective of the procurement methodology or programme.

A brief description of each stage is provided in the Glossary attached.

The Guidelines are intended for use as a single shared document to define and communicate the responsibilities all parties have through the process.

Major changes

Building on the strengths and wide industry acceptance of the original, the 2016 Guidelines now include:

- **All stages of the Design and Building process** are incorporated in the guidelines as a single document from Project Establishment through to Completion including 'Procurement', 'Administration and Observation' and 'Post Completion'.
- **All major disciplines** are now included to the process including Project Managers, Designers/ LBPs, Quantity Surveyors, the various Engineering disciplines, and the Builder.
- **Layout** in a matrix that sets out the activities and deliverables undertaken on one axis and the party responsible on the other.
- **Editable PDF formatting** provides for easy population of the forms with flexibility that reflects the fact of the contemporary Building environment.
- **Legislative Requirements** – Health and Safety
- **Adopted design principles** – Environmentally Sustainable Design
- **New Technologies** – Building Information Modelling (BIM)

These changes are explained in some detail below:

All stages of the Design and Building process

The original 'CIC Design Documentation Guidelines' focused solely on the production of traditional design information. Accordingly the Guidelines included the traditional design 'phases' including Concept, Preliminary, Developed, Detailed and also 'Construction design' which referred to those design activities normally undertaken by the builder – shopdrawings, and the design of proprietary systems.

The broad acceptance and wide use across the construction industry of the Design Documentation Guidelines suggested that the opportunity existed to enhance the guidelines to encompass all normal activities undertaken through all stages from Project Establishment to Post Completion.

Accordingly the 2016 Guidelines now include the following stages:

- Project Establishment
- Concept Design
- Preliminary Design
- Developed Design
- Detailed Design
- Procurement
- Construction Administration and Observation
- Post Completion

Design is an evolutionary and often iterative process, developed from a set of Client requirements within a complex legislative environment. The purposes of working in stages is to move from the general to the particular, and allow the testing of options that define and confirm the Client's objectives. Important cost advice and Client and stakeholder approvals can be sought in parallel, so that substantial changes can be avoided. Ideally, the fundamental elements of the previous stage should not be overturned, and subsequent stages will allow the refinement of solutions from the previous stage.

Preamble

All major disciplines

The design focus of the 2004 Guidelines simply included only those disciplines that undertook design. These included Architectural, Electrical, Fire, Fire Protection, HVAC, Hydraulic, and Structural designers only.

As mentioned above, the 2016 Guidelines include all activities undertaken through all stages of a project, and the involvement of new parties is naturally implied.

Accordingly the 2016 Guidelines now identify all parties reasonably expected to participate in a project, and allow for other particular disciplines to be listed, viz::

Client

- Project Manager
- Architect/Designer
- Quantity Surveyor
- Town planner/traffic engineer
- Topographical surveyor
- Structural
- Geotechnical
- HVAC
- Plumbing and Drainage
- Electrical
- Fire Engineering
- Fire Protection
- Builder
- Other (to suit project requirements)

Layout

The Guidelines are presented as an editable electronic template that identifies the party/ies having primary responsibility for the task and its related deliverable, and the party/ies which are required to input/assist/coordinate with the party having primary responsibility.

A single mouse click populates a cell with a hollow dot which indicates the party/ies inputting, assisting and coordinating to achieve the task/deliverable. Double clicking populates the cell with a solid dot which indicates the party having primary responsibility for the task and its related deliverable. Some activities, Health and Safety for example, is a responsibility where all parties have an equal role

The scope of other disciplines such as acoustic, vertical transportation and wind consultants, are not specifically identified in the template, however blank columns are available for the inclusion of these specialists on a project specific basis.

Editable PDF formatting

The complexity and growth of content outlined in the previous section is offset by the Guidelines being in editable pdf form, which is easily downloaded and filled out. For ease the Guidelines are pre-populated with scope typical of a 'traditional' project. Parties responsible for preparing the Guidelines on a particular project should fill them out to best suit the project requirements.

The format acknowledges and anticipates the variety of building types undertaken and allows for activities to be undertaken by the party best suited to the project requirements. For example, on a warehouse building, the structural engineer may prepare the building plans and undertake the contract administration- roles an architect/designer and project manager respectively might traditionally do.

Legislative Requirements – Health and Safety

Despite an ever increasing focus on Health and Safety in the Construction industry, in the last 5 years the Construction industry has experienced the second highest number of workplace fatalities and Serious Harm Notifications.

The new Health and Safety at Work Act (HSWA) came into effect on 4 April 2016 and sets out the principles, duties and rights in relation to workplace health and safety and the responsibilities business leaders, businesses and workers have under the Act.

The Construction industry has and continues to take these responsibilities determinedly. The Guidelines place therefore Health and Safety at the 'top of the list' of tasks and deliverables.

Accepted design principles – Environmentally Sustainable Design (ESD)

Not only is Climate change undeniable, but energy costs are increasingly significant to building owners and occupiers. In the time since the establishment of the 2004 Guidelines Environmentally Sustainable Design has developed from a responsible novelty to being embedded in private, corporate and government culture. ESD is now considered accepted practice, and is included in the Guidelines accordingly.

Preamble

New Technologies – Building Information Modelling (BIM)

A proper understanding of what Building Information Modelling (BIM) is, and the differentiation between this and 3d design is critical in the modern context. Confusion arises because the software that works in 3D has the capacity also to deliver BIM outcomes. The key word here is 'Information'. Client or Contractor benefits available through the use of BIM, be it through the quick scheduling of building elements, integration of construction sequencing, or embedding plant and equipment with coding that allows easy facilities management, is not a given. These BIM requirements must be briefed from design commencement as soon the designers being assembling elements within the BIM models and the opportunity for establishing BIM parameters (information about an object) exists.

The requirements of BIM must be understood and briefed from the project outset. Clients should also be aware that this information does not come for free, as time and skill is needed to embed the required 'Information' in the model and to schedule and deliver it in a readily extracted and useable form.

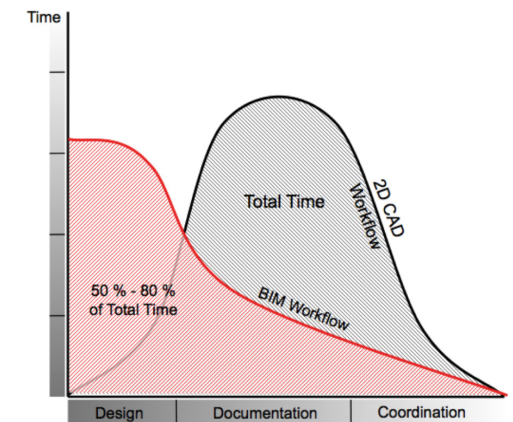
The proper use of BIM should deliver high levels of design coordination which are implied where the project is being delivered in a BIM environment that utilises the inherent strengths of 3D documentation. Critical to this is the adherence to the BIM Execution Plan (BEP) which clarifies the level of 3D modelling required by all parties and the coordination processes to be undertaken.

The integration of construction sequencing, called 4D design (referring to the time or sequence component of construction planning) into design documentation.

Current design procurement, which tends to restrict scope to the production of diagrammatic documents, particularly in the procurement of Building Services design, challenges this ideal. 2D design 'diagrams', are considered sufficient for pricing, with Services sub trades providing full detail as part of their shop drawing and plant and equipment procurement processes. There can therefore be a 'gap' in the completion of a fully coordinated 3D or BIM model. Clients that require levels of coordination that 3d software or BIM offer must be sure to engage (and remunerate accordingly) designers who might not normally be commissioned to undertake full design.

Whoever is preparing the Scopes of Consultants' Engagements should make clear at the time expectations of the Consultants having to undertake their services in accordance with the BIM Execution Plan (BEP) as this requires the Consultants to deliberately produce the required outcomes. Failure to clearly state this expectation at design commencement would likely lead to a variation claim as the work required to conform with the BEP would likely fall outside of Consultants' traditional scopes.

Clients should be also be aware that 3D/BIM design requires considerable resource to assemble the 'model' earlier that traditional design processes, and that deliverables may not be presentable as early in the process. Once the 'model' is developed however, the flow of deliverables should be well in advance of that delivered in traditional 2D design., The diagram adjacent explains:



Graphisoft (n.d) About BIM, retrieved http://www.graphisoft.com/archicad/open_bim/about_bim/

Preamble

The Design Stages

Project Establishment —

The project is set up. An Agreement between Client and major Consultants is established and appropriate information about the site, and preliminary information about the Client Brief, time frame, budget, stakeholders etc is gathered to enable subsequent stages of the project to be undertaken. Methods of Contractor Procurement, other than Tendering, which may affect the Consultant scope and programme, should be advised and inform Consultant Procurement. No design work is done.

H&S plans for all disciplines will commence and a coordinated H&S Plan for the project produced.

Concept design —

Based on the Client approval and the Project Establishment stage outputs this stage involves the exploration of sufficient design concepts for the Client to be able to test the Brief, the development potential of the site, and have a Concept Estimate prepared to establish financial feasibility. Major consultants should be engaged as well as those whose inputs are required to develop the design to Resource Consent. A preliminary project programme, BIM Execution Plan (BEP), outline of legislative constraints, and Concept Estimate should be prepared.

The Concept Design, Programme and Estimate produced should reasonably allow the Client to approve the project to proceed to Preliminary Design.

H&S plans for all disciplines will be progressively developed and the coordinated H&S Plan for the project will be updated.

Concept and Preliminary Design phases are sometimes combined on less complex projects.

Preliminary Design —

Based on the Client approval and the Concept Design stage outputs, this stage involves the refinement of the approved Concept including testing options for and selection of major elements such as structural system, building services and materials. The design should consider regulatory requirements and approvals for both Resource and Building Consent matters. Refinements to the Client Brief are incorporated. Specialist consultants required to input into or prepare the Resource Consent should be engaged.

The project programme should be refined and the design should be sufficient to prepare a Preliminary Estimate of Cost, and an update of the feasibility accordingly. Options for Procurement method will be discussed and a preferred method of procurement may be identified.

A Resource Consent Application, if required, is prepared and may be applied for at the end of this stage.

Preliminary Design drawings should be to scale and show spatial sizes and relationships, outline cross section and elevations, and integrate the major structural elements, as well as zones and plant rooms for services. Outline specifications from each major discipline should be provided.

The Preliminary Design should reasonably allow the Client to be able to approve the overall form, functionality and cost of the Project and approve this to move into Developed Design. Stakeholder engagement and requisite approvals, where required, should be undertaken and gained.

It may provide sufficient information for the communication of the design to a third party for marketing or consultation purposes.

H&S plans for all disciplines will be progressively developed and the coordinated H&S Plan updated.

Developed design —

Based on the Client approval and the Preliminary Design the outputs this stage involves the development of the approved Preliminary design such that the scope of all major elements, including structural elements, building services, materials and finishes and net/gross building areas, is clearly defined and coordinated. The Developed Design phase is where the disciplines prepare the necessary documentation to define the scope of all building elements. High levels of input and coordination are required from all disciplines. Design documentation is produced to scale with grids, principle levels and dimensions are shown, outline specifications are finalised, and all performance criteria confirmed. While resolution of individual details that do not impact on the key elements are left for the next design stage, the documents are advanced to a level where little ambiguity exists for the documents to be developed to a stage suitable for Building Consent, Procurement and Construction in the Detailed Design stage.

Where anything other than a traditional Tender process for Contractor Procurement is contemplated this must be agreed as processes such as Early Contractor Involvement or Novation may affect the Consultant design programme.

A Firm Estimate of Cost is prepared on an elemental basis. Developed Design provides sufficient information for the Client, and stakeholders as appropriate, to clearly understand the aesthetics, functionality and performance of the building, it's internal spaces and facilities.

The Developed Design should reasonably describe the final building once its translated to full design during the Detailed Design stage. The Client will be able to approve the aesthetics, functionality and cost of the Project to move into Detailed Design. Stakeholder approvals, where required, should also be gained.

H&S plans for all disciplines will be progressively developed and the coordinated H&S Plan updated.

Preamble

The Design Stages (continued)

Detailed design —

Based on the Client approval and the Developed Design outputs the team develops the design to a level of that clearly defines the quantity and quality of all building elements, materials and systems through drawings, specifications, schedules and performance requirements. The design should be comprehensively co-ordinated with other disciplines.

The documents produced in Detailed Design have a critical use in Consenting and Procurement and should, with only minor amendment or clarification, be able to be:

- submitted and achieve a Building Consent, and therefore should be able to be reasonably constructed.
- accompanied by Tender and General and Special Conditions and Contract documentation, and used to Procure a Construction Contract.

The preparation of Tender and Special Conditions and Contract documentation may occur at the end of Detailed Design or during the Procurement stage.

The cost plan should be developed into a Tender Estimate which is used to inform the Client of the likely Tender price and evaluate the tender prices submitted. If a Schedule of Quantities is required it should be prepared based on the completed Detailed Design and General and Special Conditions and Contract documentation.

H&S plans for all disciplines will be progressively developed and the coordinated H&S Plan updated. Particular H&S matters relevant to the Contract should be included in the Procurement documentation.

Procurement —

Based on the Client approval and the Detailed Design outputs the process is now undertaken by which a Builder is selected to construct the building, and the preparation of Tender and Special Conditions and Contract documentation occurs. Separate procurement processes may be used to procure separate or specialist items for the building.

The process is managed by the Consultant identified. The Client rarely undertakes this specialist role. Consultants are required to review Tender submissions for technical conformance and assess Tender tags. The Quantity Surveyor will be closely involved in the assessment of cost and monetary allowances such as Provisional Sums.

Once a Tenderer is selected the Contract documents are assembled. Contract and design matters that have been agreed during the Tender negotiations will need to be incorporated into the Contract and design documentation respectively. These revised documents are assembled into the Contract for signing by the Client and Contractor.

If NZS 3910:2013 'Conditions of contract for building and civil engineering construction' is the being used, the Engineer to the Contract, who may not be one of the Consultants, should be engaged during to this Stage.

H&S plans for all disciplines will be progressively developed and the coordinated H&S Plan updated. Particular H&S matters relevant to the Contract should be included in the Procurement documentation, and specific responses to H&S matters sought and evaluated during Tender.

Administration & Observation —

Although signing a Construction Contract suggests that Client approval for these activities is implicit, formal Client approval and distribution of the Procurement stage outputs are required for the team to commence this stage.

These activities occur during the construction of the building and so are grouped into the same stage. They do differ significantly in that Administration relates to the management of the Construction Contract and Observation relates to the monitoring of the construction with respect to the Design documents that form part of that Contract. These activities may be undertaken by separate Consultants or a single Consultant depending on the project requirements and scale. Note that if NZS 3910 is the Contract being used the Engineer to the Contract, who may not be one of the Consultants, must be engaged well prior to this Stage.

Administration: The activities undertaken by the appointed consultant during a building's construction necessary for the administration of the Contract. This may include issuing of directions or instructions, which may include the changing of the Drawings or Specifications, assessing and valuing of Variations, the provision of Payment Schedules, assessing and granting of extensions of time, issuing of a Practical Completion Certificate or a Final Completion Certificate.

Preamble

The Design Stages (continued)

Administration & Observation — (continued)

Observation: The activities undertaken by the design consultant during a building's construction. This normally includes site visits, reviewing of Contractor Design information to determine if the construction materials and installations are in accordance with the contract documents, specifications and performance criteria.

The activities of Administration and Observation come together at the Contract completion(s), certified accordingly as Practical or Sectional Completions. The party responsible for Completion Certification requires inspections to be undertaken and defects listed. These lists accompany Certificates issued. Also for consideration at this time may be the provision of items required under the Contract Terms such as Warranties, as built drawings, testing and commissioning Certificates, Operation and Maintenance Manuals, Code Compliance Certificates or CPUs, etc. Shortcomings in these documents that do not prevent Practical or Sectional Completion Certification may be included in the list of defects.

Practical or Sectional Completions indicate critical Contract procedures such as the release of retentions and bonds, changes to insurances, and submission of the Final Account.

HSW plans for all disciplines will continue to be progressively developed and the coordinated H&S Plan updated. A HSW plan for the construction will be developed, implemented at commencement on site, monitored and reported.

Post Completion —

Although Certification of Practical Completion suggests that commencement of the Post Completion stage is implied, Client approval and distribution of the outputs are required for the team to commence this stage.

The Defects Notification Period commences with the issuing of Practical Completion and the Contractor notified of defects that require attention. Unless this was completed in the previous stage items required under the Contract Terms such as Warranties, as built drawings, testing and commissioning Certificates, Operation and Maintenance Manuals, Certificates of Public Use or Code Compliance Certificates, etc will be provided.

The Final Account is processed in conjunction with the Quantity Surveyor.

The Contractor should proactively, safely, and in coordination with the buildings occupation and operations, attend to any defects listed at the time of PC or arising during the Maintenance Period.

HSW plans for all disciplines will continue to be progressively developed and the coordinated H&S Plan updated and issued finally. A HSW plan for the defects rectification will be developed, implemented at commencement on site, monitored and reported, noting particularly the potential risks to occupants.

The end of the Post Completion Phase is signalled by the Defects Liability Period stated in the Contract. Subject to all defects being rectified the Contract administrator will issue the Final Completion Certificate, which signals the Contract is ended. Remaining retentions etc are discharged.

Preamble

How important is co-ordination in the design process?

The thorough co-ordination of design between disciplines is considered to be singularly the most important issue confronting the industry. Informal feedback from the construction industry suggests that up to 20% of wastage on construction sites may be avoided with thorough coordination. The requirement for other parties to integrate and coordinate with the provision of one parties deliverable is identified and formalised in the new editable PDF format.

To assist the design practitioner sample Co-ordination Checklists have been put together. The sample Co-ordination Checklists have been developed on the basis of the Architect/designer having the primary role of leading the design co-ordination. It must be emphasised however that all design disciplines have a responsibility for integrating other disciplines' design into their own as well as undertaking design co-ordination.

The sample Co-ordination Checklists are generic, and are not exhaustive. Therefore design teams are encouraged to develop appropriate Coordination Checklists to suit the needs of each project.

What is the impact of the procurement methodology on design documentation?

The input of the designers into the construction procurement methodology and construction is important in the quest for better buildings. Therefore, the appropriate design consultants should be involved in this process.

The determination of construction contract procurement and conditions of contract, methodology of pricing or tendering, and execution of those contracts, should be defined at an early stage of the design process, so that the documentation can be arranged accordingly. It is noted that in Contractor-led projects, much design is undertaken by subcontractors. In these cases the 'designer' may mean both the Consultant and the Subcontractor and it should be made clear where these cross-overs occur.

How do the guidelines relate to the management of the design process?

Design management may be undertaken by any of the consultants, or the Client, or specialist design manager. Because of the varied nature of how project teams are structured, the task of design management is not addressed in these Guidelines. Formal Design management is considered particularly necessary where design has a large subcontractor involvement, and design activities inform and are essential to the programme.

Design management may overlap with some of the design processes listed in the Guidelines, and include the direction of consultants and specialist and subcontractor designers, the chairing and minuting of project meetings, integration of the design delivery and consents within the project programme, and managing information flow to and from the Client.

Responsibility for the design management role needs to be confirmed and formalised at the start of the project and the scope of this role either included in the consultant's service or defined separately.

Who controls and sets out the building dimensions in the drawings?

A key to a successful project is good control and "set-out" of building dimensions in the documentation. For building projects the architect generally has responsibility for dimensions. However, on some projects (often light industrial type or specialist buildings) the engineer may act as principal consultant, taking responsibility for dimensions. Therefore, when defining the consultants' scopes it is necessary to define who is responsible for dimensions.

When should 'Value Management' take place in the Design Process?

'Value management' (VM) reviews at the appropriate stage(s) of the design process may assist in achieving successful projects. However, reviews undertaken too late can be ineffective and adversely impact on programme and costs. It is advantageous to carry out "VM" reviews at the end of the initial design stages and where the design has been coordinated between the design disciplines, to ensure there is a consistent basis for a cost estimate. The necessary revisions that are identified as part of the "VM" review may then be input to the start of the next design phase.

The time required for the VM and subsequent document changes must be allowed in the programme and the sketch below graphically illustrates the opportunity of early reviews.

Using the new format

1.0 Using the new Format

- The Guidelines is available in **Editable PDF**. A recent version of Adobe Acrobat or Adobe Reader needs to be installed to utilise the interactive elements.
- Adobe Reader is free and can be downloaded at <http://nzcic.co.nz/resources/guidance-documents>
- PDF Software by vendors other than Adobe (including Apple Preview) are not supported.

2.0 Colour

- There are a number of text items in colour. These will print clearly if reproduced in black & white.

3.0 Stages

- Each section of the Guidelines is referred to as a **Stage**.
- The Stages are separate PDFs. It is recommended that all Stages should be filled out, with N/A (not applicable) even if the Stage is not being undertaken.
- All disciplines' work in the Stage is contained in the section.

4.0 Columns

4.1 Left hand 'Task' column

- **Lists downwards** all the tasks that can be undertaken, starting with approvals and previous stage deliverables
- **Tasks are Grouped** under common headers.
- **Additional Services** can be added at the bottom of each section on the 'Other' line.

4.2 'Deliverables' column

Lists downwards the types of deliverable required, these are:

- **Report** (written document)
- **Coordinate** (not a physical deliverable, but evidenced in them)
- **Minute/Note** recording the matters of meetings etc
- **Draw** traditional drawn documentation
- **Schedule** traditional spreadsheet or drawn (combination of drawings and text) schedules
- **Specification** written description of materials, workmanship standards, and performance requirements

4.3 'Required' column

- A solid dot in this column shows that the deliverable is required.

4.4 'Disciplines' columns

- From left to right are columns headed by discipline (Client, Project Manager, etc)

5.0 Populating the Guidelines

- **One click** in the cell produces a **hollow dot** which shows:
 - the **party(ies*) required to input, assist, and coordinate** with the party responsible in the production of the deliverable. It is anticipated that most rows will have cells will have a combination of one solid dot and a number of hollow ones.
- **Two clicks** in the cell produces a **solid dot** which shows two things:
 - In the **Disciplines' columns** the **party responsible** for producing and issuing the deliverable
 - In the **Required column** shows that the **deliverable is required**.

Deliverables	Required	Client	Project Manager	Townplanning/Traffic	Topographical Surveyor	Architect	Quantity Surveyor
Report	●		●			○	○
Minute/Note	●		●	○		○	
Coordinate		○	○				

* Note that in some cases some or all disciplines will have a solid dot which identifies the shared responsibility each have for a task. For example all disciplines will have a solid HSW, which reflects their shared responsibility.

Using the new format (continued)

6.0 Saving the Guidelines

As you populate each stage of the Guidelines, you will need to Save or Save As the PDFs. Reader/ Acrobat will not prompt to save your changes before closing the file.

7.0 Distributing the Guidelines

Each stage is small enough to email (under 10mb) however the entirety of the Guidelines will be too large to email. We recommend distributing the larger document via a cloud-based storage service such as *Dropbox*, *OneDrive*, *Google Drive* or a file transfer service such as *Hightail* or *WeTransfer*.

8.0 Printing the Guidelines

- Print the guidelines using Adobe Reader/ Acrobat.
- The document is A4 landscape. Consider printing double sided.
- Ensure size setting is set to 'Actual Size' or 100% and do not 'fit to page'.
- The document can be wire-bound or hole punched along the top edge or stapled in the top left corner.

Glossary

Glossary — particular to the Health and Safety at Work Act 2015

Activity

Includes manufacture, assembly, use of the structure for the purpose advised to the designer, construction, handling, inspection, cleaning, maintenance, repair, decommissioning, dismantling, demolition and/or disposal.

Commission

Authorising someone to perform certain duties or tasks, or to take on certain powers e.g. to commission an architect / engineer to undertake a design.

HSD

Health and Safety in Design

HSW

Health and Safety at Work, as defined by the Health and Safety at Work Act 2015

H&S Plan/register

The framework for managing those risks in a particular project.

Overlapping duties

Because a PCBU owes duties to workers affected by its work, not just those who work for it, it is possible for that PCBU to owe overlapping duties. PCBUs will need to consult, co-operate and co-ordinate activities to meet their shared responsibilities and duties and responsibilities to ensure that the work does not pose risk to people's health and safety.

Officer

A person who holds a senior leadership position and has the ability to significantly influence the management of a PCBU. An officer of a PCBU must exercise due diligence to ensure that the PCBU complies with its duties.

Person Conducting a Business or Undertaking (PCBU)

Person conducting a business or undertaking –plant duty holders under Despite its name, a PCBU will usually be a business entity, such as a company, not an individual person. However, an individual carrying out business as a sole trader or self-employed person would also be a PCBU.

Reasonably practicable

What is or was reasonably able to be done at a particular time to ensure health and safety.

Volunteer

Where volunteers carry out work for a PCBU, the Act distinguishes between casual volunteers and volunteer workers.

Worker

A person who carries out work in any capacity for a PCBU.

Workplace

A place where work is being customarily carried out for a business or undertaking and includes any place where a worker goes, or is likely to be, while at work and includes the site.

Glossary — general

This Glossary has been assembled by using the definitions available from NZ Legislation, NZ Standard and Published Industry documents. Where these are not available definitions specific to the disciplines have been provided by representatives on the 2016 Review Committee.

Administration

The management by a nominated consultant of the construction contract between the Client and the Contractor, on behalf of the Client, including issuing instructions and variations as required.

Agreed Services

The services to be provided by the Consultant to the Client as identified in their contract agreement.

As built drawings

Revisions to the original design drawings to reflect any changes made in the course of the Construction Contract.

Brief

The written statement prepared by or for the Client summarising their expressed requirements, preferences and priorities, with respect to at least scope, cost, quality and time frame in sufficient detail for the Project Team to carry out the Agreed Services.

Budget

The target Cost of the overall project including but not limited to the Contract Works as nominated by the Client and stated in the Brief.

Buildability

The extent to which the design of a planned building facilitates its construction.

Builders Work

Work that is necessary as a result of other specialist work area either by separate or sub-contractor. It does not include site preliminaries.

Building Consent

Confirmation provided by the Building Consent Authority that they are satisfied that the building's design meets the requirements of the New Zealand Building Code and may proceed to construction.

Building Consent Authority (BCA)

Registered Territorial Authorities (or in some cases private organisations) permitted to issue Building Consents and perform Certifying functions (e.g. issuing Code Compliance Certificates) under the Building Act.

Building Information Modelling (BIM)

Building Information Modelling. The digital representation of the physical and functional characteristics of an asset. Refer to the New Zealand BIM Handbook for more detailed explanation of all BIM terminology: <http://www.mbie.govt.nz/about/whats-happening/news/document-image-library/nz-bim-handbook.pdf>

— BIM Brief

Prepared by client prior to engaging consultants to outline required BIM outcomes and uses.

— BIM Execution Plan (BEP)

Defines how a project will be executed, monitored and controlled with regard to BIM

— BIM Manager

Leads and coordinates the BIM process for the project.

— Common Data Environment (CDE)

Common platform for sharing information accessible to all project participants

— Level of Development

Measure of the completeness of elements within a model.

— Pre Contract BEP

Prepared by consultants as a part of their proposals in response to the BIM Brief.

Glossary

Building Warrant of Fitness (BWofF)

A confirmation issued by the Territorial Authority and publically displayed confirming that the building's life safety systems (called specified systems) have been maintained and inspected for the period required.

Certificate for Public Use (CPU)

A certificate that enables members of the public to use a building or part of a building prior to a Code Compliance Certificate being granted.

Client

The person or organisation named as Client in the Contract Agreement or Construction Contract. Often referred to as the 'Principal' or 'Owner' in some Construction Contracts.

Code Compliance Certificate (CCC)

Formal statement issued by the local consenting authority at the completion of the construction activities as confirmation that the building work has been undertaken in accordance with the requirements of the Building Consent.

Commission (under section 43 of the Health and Safety at Work Act 2015)

means authorising someone to perform certain duties or tasks, or to take on certain powers e.g. to commission an architect / engineer to undertake a design.

Commission (plant and equipment)

Prior to construction Completion, the process during which installed equipment or plant near operated, adjusted, tested and verified with respect to its adherence to the specifications. This is not to be confused with the action of employing a Consultant, which is referred to as Engagement in this document.

Concept Estimate

A rough order or high-level assessment of costs based on the Client's brief and the Concept Design that are used to set an early budget, generally undertaken at an early stage on limited information.

Construction design

Where construction requirements such as site conditions, erection requirements, and proprietary, performance and fabricated elements require shop drawings, calculation and selection to create documents that can be directly "built" from. This design is normally undertaken by the Contractor or relevant Subcontractor(s)

Construction methodology

Refers to the planned method of construction, taking into account all contractual and legal requirements, construction constraints, risks, and opportunities. Methodology includes the temporary and permanent works and the services required to complete the construction works.

Consultant

A specialist design or construction professional or subject matter expert engaged to contribute in some way to the delivery of the project. They may be Separate-Consultants engaged and paid directly by the Client or Sub-Consultants paid and engaged by a Lead Consultant.

Containment Networks

Cable trays, cable ladders and trunking

Contingency

An amount of money, expressed either as a percentage or lump sum, included in the project budget to allow for the unknown or unresolved aspects of a design. Sometimes referred to as a Contingency Sum.

Contract Agreement

The legally binding agreement between two parties. Between the Client and the Consultants this defines the services, scope, timing, deliverables, and terms and conditions. Also the Contract between the Client and the Contractor, as defined by the Contract Documents.

Contract Documents

The documents listed in the Contract Agreement, which make up the Contract, together with all information formally issued to the Contractor during the progress of the Contract.

Contract Price

The amount agreed in the construction Contract between the Client and the Contractor for the cost of the Contract Works.

Contract Works

Everything to be carried out by the Contractor to complete the Project, including goods, services, labour, materials and equipment, items supplied by the Client, and Temporary Works.

Contractor

The organisation or person engaged by the Client to undertake the whole or part of the Contract Works for the Project.

Cost plan

A system of cost analysis, which enables the cost of a proposed building to be developed and monitored and controlled during the successive project stages and prior to a Construction Contract being let. Normally undertaken on an 'elemental' basis which breaks down the materials, labour, plant and equipment and assembles them into building elements. This is generally prepared at Preliminary Design phase and updated as the design progresses through Developed Design, Detailed Design and For Tender documents.

Defects Notification Period

The period for notifying and rectifying defects in the Works after Practical or Sectional Completion has been issued.

Design Consultant

The specialist Consultants engaged in the project to undertake the design of the building fabric including services.

Design Criteria

Definition of building services performance criteria including required external conditions.

Drawings

Refers to all drawings of the Contract Works described or included in the Contract Agreement together with any modification or addition provided for in the Contract Agreement.

Engagement

The process of employing a Consultant to undertake the Scope of Services required for the project in accordance with the Terms and Conditions of the Contract Agreement.

Engineering Approval Plan (EAP)

Territorial Authority-approved design of public drainage, water, or road works, or of a public open space.

Environmentally Sustainable Design (ESD)

Holistic process for design, construction and operating an asset to minimise whole of life costs and impact on the environment. May be linked to an industry standard e.g. GreenStar.

Equipment

Components of building services systems including, for example, fittings and outlets, major plant, grills and diffuser, cameras and controllers.

Final Account

The final construction cost; including all variations and expenditure against provisional and price cost sums, to be assessed and paid to the Contractor at the conclusion of the project.

Financial Report

A Report that covers all of the cost centres included in the project budget and is reviewed and updated generally on a monthly basis.

Fire Engineering Brief (FEB)

Definition of required fire safety precautions including egress, separations and systems. Used to identify and discuss fire safety design solutions with stakeholders at an early stage in the project.

Glossary

Fire Report

Description of fire engineering solutions (including calculations) demonstrating compliance with the FEB.

Firm Estimate of Cost

Generally prepared based on well-defined documentation and will generally be in an elemental format or trade by trade format. The accuracy should be +/-5-10%.

Heritage NZ (HNZ)

The agency acting under The 'Heritage New Zealand Pouhere Taonga Act, 2014' that promotes the identification, protection, preservation, and conservation of the historical and cultural heritage of New Zealand. Formerly NZ Historic Places Trust.

High Level Order of Cost

A rough or high-level approximation of the cost to construct or develop the building or project, generally done at Concept Design stage with limited information.

Independent Qualified Person (IQP)

A person (or firm) approved by the territorial authority as qualified to inspect certain specified systems and ensure that necessary maintenance occurs

Intake/Discharge

Openings in the building fabric for air inlet, air and other exhausts.

Interface Matrix

Definition of demarcation points and interconnection requirements between independent systems.

Land Information Memoranda (LIM)

A comprehensive report that has all relevant information the Territorial Authority knows about a property or section. Normally includes special features (flooding, stability, contamination, etc), private and public drainage, consents, notices, requisitions, Zoning, notifications by Network Utilities Operators, other relevant information.

Liquidated damages

Costs deductible from the Contract Price that in the event of a delay to the completion of a project, and are based on a genuine pre-estimate of the actual losses that the principal will suffer as a result of that delay.

Novation

An arrangement that effectively substitutes an original party to an Agreement with a third party and transfers both the benefits and the obligations of the original party to the third party. It essentially gives rise to a new Agreement on the same terms as the original agreement. Consent of the original parties to an agreement is required for a novation. Most often relevant to the transfer of (design) Consultant agreements from the Client to the Contractor in a Design/Build project.

NZ Fire Service (NZFS)

The organisation whose statutory role is fire safety, fire prevention, and fire extinction. NZFS is constituted under section 3 of the Fire Service Act 1975.

NZIA

The professional body representing the majority of Registered Architects in New Zealand.

NZIQS

The professional body representing the majority of Quantity Surveyors in New Zealand.

Observation

The activities undertaken by the design consultant during a building's construction. This normally includes responding to Contractor queries, checking Contractor design, and visiting the site at intervals agreed with the Client, to observe that the Contract Works have generally been built in accordance with the Contract documents, including specifications and performance criteria.

Payment claim

A request for payment, in writing, issued by the Contractor to the Client under the Construction Contract. Normally includes the specific details of the Contract, the work undertaken, the period to which the claim relates, the amount claimed and the method of calculation. Note that a Payment Claim under the Construction Contracts Amendment Act 2015 has a specific meaning.

Performance Bond

A bond issued by a bank or other financial institution, guaranteeing the fulfilment of a particular Contract by a party to that Contract.

Person or person

An individual, partnership, body of persons, firm, company or organisation whether corporate or not.

Practical Completion

The date at which the Contract Works is Certified at being generally built in accordance with the construction contract and are able to be used for their intended purpose without material inconvenience. Minor defects may be still be outstanding. If a separate section of the Works is Certified as above this is called 'Sectional Completion'.

Preliminary Estimate of Cost

An early estimate prepared based on concept or preliminary documentation. The level of accuracy is generally consistent with the level of definition in the documents.

Primary Services Routes

Space allowance for installation of main Containment Networks

Prime cost sum (PC Sum)

A material-related monetary allowance that provides for the purchase and supply, to the Site, of specific materials which are to be incorporated into the Contract Works. The sum includes the net purchase price of the materials, including related Contractor expenses, overheads and margins. Does not include the cost associated with the installation of the materials.

Principal

The person or organisation for whom the Construction work is being undertaken under NZS 3910:2013 'Conditions of contract for building and civil engineering construction'. Often referred to as the 'Client' in some Construction Contracts.

Procurement

The stage during which, and the process by which, the Contractor is selected and engaged to undertake the Contract Works. Note also that the process by which Consultants are selected and engaged is often called Procurement.

Procurement

The process through which a Contractor, Consultant or FF & E item is selected. Includes the activities required to define the scope, specification, value and timing of the work to be undertaken.

Producer Statement (PS)

A written statement provided by Consultants and/or Contractors to confirm that design or building work complies, or will comply, with the Building Code. Producer Statements are numbered 1, 2, 3, 4, referring to different statements relating to:

- PS 1: Design
- PS 2: Design Review
- PS 3: Construction
- PS 4: Construction Review

Product Technical Statement (PTS)

A summary of the key details about a building product or system. Note that a PTS does not replace evidence of a product or systems compliance with the Building Act.

Programme

A document describing the time and the sequence of activity necessary to complete tasks that support any or all stages of project delivery.

Project

The building, or part, to be designed and constructed in a defined location as identified in the Contract Agreement.

Glossary

Project Budget

A budget that incorporates all of the components of the project including land costs, construction costs, FF&E, consultants' fees, development costs, contingency allowances, funding costs, Consent costs, etc.

Project Control Group (PCG)

The group of key project team members to report on project wellbeing, makes key decisions and resolves any issues escalated by the design team.

Project Execution Plan (PEP)

A document describing for the Project Team the communication, development, implementation, and control of design and construction activities associated with the project.

Project Information Memoranda (PIM)

A summary of the property information a Territorial Authority Council has on record that may affect a building project including requirements for Resource Consents, drainage and utilities, and about the land.

Provisional Sum

A monetary allowance, including expenses and margins, that provides in the Cost Plan or Contract Price for work or items not yet or fully defined to be done by the Contractor.

Quality Assurance (QA)

A system to help organisations meet the needs of customers and other stakeholders while meeting statutory and regulatory requirements related to a product.

Resource Consent

Confirmation provided by the Territorial Authority that they are satisfied that the building design meets the requirements of the New Zealand Resource Management Act. Sometimes referred to by TA's as a Land Use Consent due to the activity of constructing a building occurring on specific land.

Retentions

A percentage of the amount certified as due to the Contractor on a Payment Certificate, that is deducted from the amount due and retained by the Client to ensure the proper completion of the Contract Works.

Risers

Vertical space allowance for installation of Containment Networks

Risk

Any event which may have health and safety, financial, programme, quality, implications on the project.

Schedule of Quantities

A document in which materials and labour for the Works are quantified or itemised. The Schedule is used by Tenderers to price the same scope, and can be used to value Progress Claims and Variations during construction.

Services Distribution

Ducts, pipes and cables associated with building services systems.

Single Line Diagrams/Schematics

Non-location specific drawings illustrating building services systems, components and interconnections.

Site

The land, building and other places made available by the Client, where the Contract Works are to be carried out.

Specification

A written document describing the materials, workmanship standards, and performance requirements (which focus on the outcomes rather than the characteristics of the components) required in the Contract Works.

Stakeholder

An individual, group, or organisation which has an interest or may be affected by the project.

Supports and seismic bracing

Gravity and seismic supports and lateral bracing for Services Distribution and Containment Networks

Tags

Anything identified in a Tender submission that departs from or clarifies items contained in the Tender documents.

Temporary Works

The provision, operation and maintenance of temporary facilities necessary for the Contractor's Site operations, and preparatory or enabling works not forming part of the permanent Contract Works.

Tender

A formal offer, including price, required information, and tags, to provide a Consultant service or construct a building.

Tender Estimate

The estimate of cost of the Works based on the Tender documentation that is used to inform the Client of the likely Tender price and evaluate the tender prices submitted.

Tendering

The processes undertaken to competitively procure a Construction Contract or Consultants' services

Territorial Authority (TA)

A city council or district council under the Local Government Act 2002.

Utilities

Externally provided water (potable, storm and sewage), power, gas and communications.

Value Engineering

The organised approach to providing a building that complies with the project requirements at the lowest cost.

Value Management

The process of making explicit the project requirements, and appraising the design against them.

Variation

A change to a Construction Contract or Consultant's service. A variation may be a change to contract conditions, scope or timing which may or may not have cost implications.

Zones

The areas or coverage of building services systems broken down across an entire building.