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New Zealand
Construction
Industry
Council

CIC Guidelines
Preliminary Design

Stage 3 of 8

Preliminary Design

○ One click: Party(ies) required to input, assist, and coordinate.

● Two clicks: Deliverable required and party(ies) responsible.

Deliverables	Required	Client	Project Manager	Townplanning/Traffic	Topographical Surveyor	Architect	Designer/LBP	Quantity Surveyor	Structural	Civil	Mechanical	Electrical	Plumbing and Drainage	Fire Engineering	Fire Protection	Builder	Other	N/A
Approvals and Inputs																		
Client Approval: Of previous stage, design documentation, updated programme and cost plan. List matters from previous stage to be addressed in current stage.	Report	●	●	○														
Methodology: Report against sustainability, embodied & operational carbon, social procurement, circular economy and ecourage climate positive goals, and targets.	Report																	
Documentation: From previous stage that forms the basis of the ongoing design.	Coordinate	●		●			○		○	○	○	○	○	○	○	○		
Health and Safety																		
Health and Safety at Work – Design (HSD): Update report to reasonably address Health and Safety issues during use, maintenance, construction, demolition or disposal. Include Subcontractor design.	Report	●		●			●			●	●	●	●		●			
Health and Safety at Work – Construction (HSW): Update report to reasonably address Health and Safety issues during construction.	Report	●		●			●			●	●	●	●		●			
Health and Safety at Work: Workshop and coordinate H&S report with team.	Coordinate	●	○	●			○			○	○	○	○		○			
Existing Conditions/Materials: Report existing risks, finalise assessment and actions.	Report	●	○	○			○			●	●							
Existing Conditions/Materials: Verify and advise risks closed out.	Report	●	○	○			○			●	●							
Other: (specify)	Other: (Specify)																	●
General																		
Comply: Proactively with H&S Plan, Project Execution Plan, BIM Execution Plan, and others as required.	Coordinate	●		●			●		●	●	●	●	●	●	●			
Quality Assurance: Prepare/update project-specific QA plan. Undertake work in accordance with.	Report	●		●			○		○	○	○	○	○	○	○			
Attend: To correspondence and at meetings.	Minute/Note	●		●			○		○	○	○	○	○	○	○			
Resources: Align internal resources with programme requirements, prepare design programme if required	Report			○			○		○	○	○	○	○	○	○			
Documentation Register: Prepare and progressively update.	Schedule	●		○			●			●	●	●	●	●	●			
Value Management: Integrate VM items in design stage.	Report																	●
Waste Management: Incorporate preliminary cleaning, refuse and recycling provisions with Client.	Coordinate	●			○		●											
Seismic Design: Consider for all elements across relevant disciplines.	Coordinate	●					○			●	○	○	○		○			
Construction methodology: Confirm assumed construction methodology governing design.	Report	●		●			○			○	○	○	○		○			
Buildability: Highlight significant or unusual buildability.	Report	●		●			●		○	●	●	●	●		●			
Drawn/modelled documentation: Prepare and issue progressively to others as agreed/required.	Draw	●		○			●		○	●	●	●	●	○	●			
Coordinate: Lead coordination with other disciplines.	Coordinate	●					●											
integrate design: Coordinate with other disciplines.	Coordinate	●					○		○	○	○	○	○		○			
Specifications and schedules: Prepare outline and issue progressively.	Spec	●					●		○	●	●	●	●		●			
Warranties: Consider warranty requirements.	Report	●		●			○		○	○		○	○		○			
Client Report: Content and timing per PEP H&S, programme, progress, cost, risk, non-conformances, etc.	Report	●		●			○		○	○	○	○	○	○	○			
Collate: Design information from all disciplines and issue at agreed milestones.	Coordinate	●		●			○		○	○	○	○	○	○	○			
Other: (specify)	Other: (Specify)																	●

Preliminary Design

BIM: Develop and agree strategies and objectives.	Deliverables	Required	Client	Project Manager	Townplanning/Traffic	Topographical Surveyor	Architect	Designer/LBP	Quantity Surveyor	Structural	Civil	Mechanical	Electrical	Plumbing and Drainage	Fire Engineering	Fire Protection	Builder	Other	N/A
Stakeholders: Identify and confirm handover data requirements and format.	Minute/Note																		●
Stakeholders: Finalise brief.	Minute/Note																		●
Deliverables: Finalise schedule of phase by phase by type (model, drawing, schedule) and LOD (level of detail).	Report	●					●			○	○	○	○	○		○			
BIM Execution Plan (BEP): Finalise.	Report	●					●			○	○	○	○	○		○			
CDE: Implement for information and model sharing.	Coordinate	●					●			○	○	○	○	○		○			
BIM meetings: Chair.	Minute/Note	●					●			○	○	○	○	○		○			
Coordination: Manage and confirm in accordance with BEP.	Coordinate						○			○	○	○	○	○		○			
Coordinate/integrate: Input to models with team.	Coordinate	●					●			○	○	○	○	○		○			
BIM outputs: Confirm alignment with selected BIM uses from BEP.	Report	●					●			○	○	○	○	○		○			
Modelling: Model preliminary design elements and systems in accordance with BEP.	Draw	●					●			○	○	○	○	○		○			
Other: (specify)	Other: (Specify)																		●

Carbon and Sustainable Design

Modelling: Complete early computer modelling to compare concept design options and look for opportunities to reduce energy use. Assess design performance against carbon and sustainability targets and inform design response.	Draw/Report			○			○			○		●	○					●	
Climate Assessment: Test concept Climate Change risk assessment and identify resilience/adaptation strategies.	Report		●				○			○		○	○	○					
Climate Impact Data: Input into models and tools.	Report											●							
LCA Outputs: Complete early Life Cycle Assessment (LCA) and consider design modifications to lower embodied and operational carbon.	Report						●			●		●	○	○					
Material Analysis: Present carbon data for lowest-impact construction materials.	Report						●					●	○	○					
Confirming Optioneering: Ensure alternative options to a new building have been explored, e.g. reusing or repurposing existing buildings.	Coordinate	●	●				●		○	○									
Social Procurement: Agree proposed strategies.	Report		●	○			○												
Waste: Incorporate waste minimisation strategies/ plan.	Report/Draw	●		●			●			○		○	○	○					
Certification: Confirm certification requirements and ensure on track to deliver against these. Register tool.	Report	●	●	○			●			○		○	○	○					
Other: (specify)	Other: (Specify)																		●

Preliminary Design

Compliance

	Deliverables	Required	Client	Project Manager	Townplanning/Traffic	Topographical Surveyor	Architect	Designer/LBP	Quantity Surveyor	Structural	Civil	Mechanical	Electrical	Plumbing and Drainage	Fire Engineering	Fire Protection	Builder	Other	N/A
Resource Consent: Confirm if required.	Report	●	○	○	●		○												
Town Planning and associated Legislation: Include in design, liaise with Territorial and other Authorities as required.	Report	●			○		●				○								
Heritage: Discuss and agree design with TA or Heritage NZ if any, receive formal approval.	Report																		
Urban design: Liaise with TA.	Coordinate	●		○	●		●												
Urban design: Discuss and agree matters with Council Urban Design Team.	Minute/Note	●		○	○		●												
Urban design Panel: Prepare and make presentation incorporating feedback as appropriate.	Draw	●	○	○	○		●												
Resource Consent Application: Prepare and lodge application with Territorial Authority.	Coordinate	●		○	●		●												
Resource Consent Processing: Answer queries arising from application, provide further information if requested. Comment on consent conditions prior to acceptance.	Coordinate	●			●		○												
Resource Consent: Receive, review and distribute consent including conditions.	Report	●	○	○	●		○												
Compliance: Progressively check design against resource consent including conditions.	Coordinate	●		○	○		○												
Compliance: Develop and agree compliance strategies for the project.	Coordinate	●		●			○			○	○	○	○	○		○			
Compliance: Progressively check design with NZBC and relevant standards and Codes of Practice.	Coordinate	●		○			●			●	●	●	●	●		●			
Certificates of Public Use (CPU): Determine if required for existing buildings.	Report																		●
Pre-Application: Establish liaison with TA and agree pathways.	Report	●		●			○			○	○	○	○	○	○	○			
H1 Energy efficiency: Confirm compliance pathway, input into design.	Coordinate/ Report	●		○			○					●							
Building Consent Forms including Checklist: Prepare.	Coordinate	●		●			○			○	○	○	○	○	○	○			
Confirm Carbon Brief: Confirm Concept Carbon Brief for embodied and operational carbon emissions targets.	Coordinate		●	○			○					○							
Other: (specify)	Other: (Specify)																		●

Management

Health and Safety: Update overall project H&S plan/register incorporating both HSD and HSAW matters.	Report	●		●			○			○	○	○	○	○	○	○			
Brief: Monitor design for compliance with objectives, scope and constraints. Identify and mitigate scope creep.	Report	●		●					○										
Legal Advice: Consult with Client's legal advisor (if required).	Coordinate																		●
Project Programme: Prepare/update design, procurement and delivery and milestones. Review progress.	Report	●		●			○		○	○	○	○	○	○		○			
Design Programme: Develop and align with the overall project programme. Include dates and scope of all deliverables.	Report						○		○	○	○	○	○	○		○			
Project Execution Plan: Implement plan, track performance of team.	Report	●	○	●			○		○	○	○	○	○	○		○			
Team: Identify further consultants required and scope, including areas of work to be undertaken by Design Build.	Coordinate	●		●			○		○	○	○	○	○	○		○			
Pre-qualify Design Team: Seek statements and review H&S policy and QA accreditation, PI, experience, resource, capability, cost, BIM assessment.	Coordinate	●		●															
Roles: Identify responsibility for dimensional control, coordination, design management.	Coordinate	●		●			○												
Engage Design Team: Prepare and issue guidelines, agreements, insurance requirements, producer statement authorship, BIM capability, etc.	Coordinate	●		●															
Peer Reviews: Identify need and engage.	Coordinate	●		●			○			○	○	○	○	○	○	○			
Insurances: Review and agree required project insurances (PI, PL, construction, etc.)	Report	●		●					○										

Preliminary Design

Management (continued)

	Deliverables	Required	Client	Project Manager	Townplanning/Traffic	Topographical Surveyor	Architect	Designer/LBP	Quantity Surveyor	Structural	Civil	Mechanical	Electrical	Plumbing and Drainage	Fire Engineering	Fire Protection	Builder	Other	N/A
Consultant Payments: Review and certify claims.	Certify	●		●					○										
Survey: Identify/commission – topographical, civil, geotechnical, existing building drawings, hazards, as built, hydrological, heritage, etc.	Coordinate/ Draw	●		●		○	○			○	○								
Carbon and Sustainable Design: Finalise scheme (i.e. NZBC, LBC, Homestar™, Green Star etc.) and level of compliance.	Report	●	○	○			●					●							
PCG/Client Meetings: Facilitate, chair, minute, issue notes, attend.	Minute/Note	●	○	●			○		○	○	○	○	○	○	○	○			
Design Meetings: Facilitate, chair, minute, issue notes, attend.	Minute/Note	●		○			●		○	○	○	○	○	○	○	○			
Stakeholders and User Groups: Consult, facilitate, chair, minute, issue notes, attend.	Coordinate																		●
Tenants: Identify channels, brief, consult, facilitate, chair, minute, issue notes, attend.	Coordinate																		●
Risk: Update schedule. Apply risk/opportunities management principles.	Schedule	●		●			○		○	○	○	○	○	○	○	○			
Budget / Cost Planning: Manage the cost consultant to provide estimates/reports.	Coordinate	●		●					○										
Value Management: Facilitate, establish timing, chair, minute, issue notes, attend.	Minute/Note																		●
Resource and Building Consents: Identify channels, commence consultation, facilitate, chair, minute, issue notes, attend.	Minute/Note	●		○	●		○												
Checklist for Building Code Compliance: Confirm who is providing what.	Coordinate	●		●			○		○	○	○	○	○	○	○	○			
Resource Consents: Assemble documents and make application.	Coordinate	●		○	●		○				○								
Resource Consents: Manage responses to queries arising.	Coordinate	●		○	●		○				○								
Contractor Procurement: Discuss option and confirm preferred procurement methodology and Form of Contract with Client.	Report	●	○	●			○		○										
Elements not covered: In this stage.	Report	●		●			○		○	○	○	○	○	○	○	○			
Approve Design: For progress to next stage, with list of matters to be addressed in next stage.	Report	●	●	○															
Provide deliverables: From this stage for commencement of next stage.	Coordinate	●	○	●			○		○	○	○	○	○	○	○	○			
Other: (specify)	Other: (Specify)																		●

Design

Brief: Analyse against constraints.	Report	●		○			●		○	●	○	○	○	○	○	○			
Site Inspection: Visit site, prepare site analysis diagrams, environmental and context studies.	Draw	●	○				●												
Site Encumbrances: Identify potential impact on the project, review with the Client. Resolve to a concept level. Liaise with specialists (if required).	Report	●	○	○			●				○								
Site Information: Additional information obtained (if required).	Coordinate	●	○	●															
Design: Prepare preliminary design plans, sections, elevations to scale. Preliminary grids, levels.	Draw	●					●		○	●	●	○	○	○	○	○			
Schedules: Preliminary fittings, fixtures, hardware selections, internal and external finishes.	Schedule	●					●		○										
Structure: Consider/develop and incorporate preliminary options and include in design.	Coordinate	●					●		○	○	○								
Building Services: Consider/develop and incorporate concept options and include in design.	Coordinate	●					●		○	○	○	●	●	●	●	●			
Vertical Transportation: Select preferred option for number, size and speed, include in design.	Draw																		
Facade: Consider and evaluate options for façade, consider compliance with Code requirements, coordinate with relevant consultants.	Draw	●					●		○	○		○							
Thermal Envelope: Consider and evaluate options for thermal envelope, consider compliance with Code requirements, select preferred.	Coordinate	●					●		○			●							

Preliminary Design

Design (continued)

Deliverables	Required	Client	Project Manager	Townplanning/Traffic	Topographical Surveyor	Architect	Designer/LBP	Quantity Surveyor	Structural	Civil	Mechanical	Electrical	Plumbing and Drainage	Fire Engineering	Fire Protection	Builder	Other	N/A
Fire: Evaluate concepts and accommodate preferred/recommended fire protection and egress requirements. Integrate requirements of NZ Fire Service.	Coordinate	●					●											
Fire and Egress: Incorporate requirements from acceptable solution or specific design.	Draw	●					●											
Accessibility and facilities for people with disabilities: Consider and incorporate requirements.	Report	●					●											
Building Maintenance: Consider options, receive Client approval, integrate in design.	Coordinate	●	○				●			○								
Floor Areas/Schedule of accommodation: Schedule/update based on current drawings/model.	Schedule	●	○				●		○									
Materials: Prepare preliminary/finishes schedule(s), consider durability and ESD matters.	Schedule	●	○				●		○									
Fixtures and Fittings: Make initial selections, discuss with Client and revise, prepare schedule.	Schedule	●	○				●		○									
Presentation: Prepare materials/samples board(s).	Draw	●	○	○			●											
Presentation: Prepare graphics to standard agreed.	Draw	●					●											
Presentation: Prepare model(s).	Draw																	●
Marketing Material: Review/finalise design with Client's marketing/real estate advisors, including plan for presentation materials.	Draw																	●
Other: (specify)	Other: (Specify)																	●

Cost

Due Diligence: Identify any previous history or work documented to date. Oversee initial appraisal, market analysis etc.	Report	●	○	○				●										
Feasibility: Update the project feasibility/viability business case.	Report	●	○	○				●										
Cost estimate: Prepare preliminary estimate of cost.	Report	●		○			○		●	○	○	○	○	○	○	○	○	
Cost Plan: Prepare cost plan. Review against budget. Identify provisional items, contingency and exclusions.	Report	●		○			○		●	○	○	○	○	○	○	○	○	
Coordinate: Cost matters, including alternatives, with other disciplines.	Coordinate	●					○		●	○	○	○	○	○	○	○	○	
Other: (specify)	Other: (Specify)																	●

Structural/Geotechnical

Brief: Review/recommend and incorporate importance levels, seismic requirements, geotechnical issues, special loads, etc.	Report	●	○				○			●		○	○	○		○			
Existing Structure: Survey, assess and report including seismic and geotechnical matters consider remedial options.	Report																	●
Geotechnical: Complete investigations, and issue draft factual and interpretive reports, confirm geotechnical hazards, design criteria, consider foundation, retaining wall, basement, site remediation and drainage options.	Coordinate	●		○		○	○		○	○	●							
Geotechnical: Based on reports, consider and input into basement drainage options.	Report	●					○		○	○	●							
Structural Design: Preliminary sizing of all primary and typical secondary members.	Draw	●					○		○	●	●							
Serviceability Criteria: Provide preliminary building movements/deflections, vibration.	Report	●					○		○	●	○	○	○	○		○		
Loads: Preliminary floor loads, high/special load areas, design loads for proprietary design elements.	Report	●					○		○	●	○	○	○	○		○		
Proprietary Design: Consider elements of non-specific code and/or proprietary design.	Report	●					○		○	○	○	○	○	○		○		
Drawings: Plans of primary structural systems, including preliminary sizing.	Draw	●					○		○	●	●	○						

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Structural/Geotechnical (continued)

Deliverables	Required	Client	Project Manager	Townplanning/Traffic	Topographical Surveyor	Architect	Designer/LBP	Quantity Surveyor	Structural	Civil	Mechanical	Electrical	Plumbing and Drainage	Fire Engineering	Fire Protection	Builder	Other	N/A
Report: Update including structural design brief, key risks and assumptions, key issues and options recommended. (Report)	●					○		○	●	○	○	○	○		○			
Erection/construction: Consider methodology governing design (where appropriate), build-ability of primary structure, unusual temporary stability or sequencing. (Draw/Spec)	●		○					○	●	●								
Specification: Outline preliminary materials, durability/coatings and serviceability, coordinate surface finishes. (Spec)	●					○			●	●	○	○	○		○			
Other: (specify) (Other: (Specify))																		●

Building Services

Note: Activities in this section may apply to all services disciplines

Deliverables	Required	Client	Project Manager	Townplanning/Traffic	Topographical Surveyor	Architect	Designer/LBP	Quantity Surveyor	Structural	Civil	Mechanical	Electrical	Plumbing and Drainage	Fire Engineering	Fire Protection	Builder	Other	N/A
Brief: Review/recommend and confirm Client requirements regarding efficiency, ESD, operational descriptions. (Report)	●	○	○			○		○			●	●	●					
Functional services brief: Develop approved design criteria and develop, including systems concepts, reliability and redundancy options and recommendations, hazardous area classifications (as appropriate), and special requirements. (Report)	●		○			○					●	●	●					
Load: Preliminary assessments on area by area basis. (Report)	●		○			○					●	●	●					
Energy efficiency: Review/recommend and confirm Client requirements regarding efficiency, ESD, operational descriptions. Prepare preliminary analysis, consider in design. (Report)	●					○		○			●	●	●					
Interface matrix: Prepare preliminary matrix outlining demarcation between services. (Schedule)	●										●	●	●		●			
Interface requirements: Identify interfaces with existing buildings and equipment – develop. (Report)	●					○			○	○	●	●	●		●			
Zones: Prepare preliminary zoning for all services. (Draw)	●					○			○	○	●	●	●		●			
Design: Drawings outlining services concepts, including plant rooms, (including maintenance and access requirements), risers, and primary services routes, typical area equipment layouts. (Draw)	●					○		○	○	○	●	●	●		●			
Diagrams: Single line diagrams and schematics showing connections to major equipment (equipment, cables, pipes, ducts, circuit breakers unsized). (Draw)	●										●	●	●		●			
Utilities/Connections: Assess supply utility requirements. Prepare connection/installation strategy. (Report/Draw)	●		○			○		○		○	●	●	●		●			
Equipment: Advise preliminary sizing and generic selection, draft schedules. (Schedule)	●					○		○	○		●	●	●		●			
Distribution: Advise preliminary sizes for services distribution and containment networks (ducts, cables, pipes, cable trays) including access and maintenance. (Draw, Schedule)	●					○			○	○	●	●	●		●			
Intake/discharge: Assess approximate size locations and separations with respect to location of system and equipment. (Coordinate)	●					○					●		●		●			
Standby power: Consider requirements. (Report/Draw)	●	○	○			○		○			○	●	○	○	○			
Emergency lighting: Concept. (Draw)	●					○		○				●		○	○			
Earthing and surge protection: Consider specific lightning protection requirements. (Draw/Spec)	●					○		○	○			●						
Incorporate requirements: Of the fire, acoustic, or other relevant disciplines. (Coordinate)	●					○			○	○	●	●	●	○	●			
Other: (specify) (Other: (Specify))																		●

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Fire

Deliverables	Required	Client	Project Manager	Townplanning/Traffic	Topographical Surveyor	Architect	Designer/LBP	Quantity Surveyor	Structural	Civil	Mechanical	Electrical	Plumbing and Drainage	Fire Engineering	Fire Protection	Builder	Other	N/A
Design criteria: Confirm for fire engineering design, i.e. either acceptable solution or alternative solution.	Report	●					○		○						●	○			
Fire Engineering Brief: Confirm including definition of fire safety precautions, fire resistance ratings, egress principles, and property protection.	Report	●					○			○		○	○	○	●	○			
Fire Report: Prepare develop fire engineering design report, coordinate.	Report	●					○			○		○	○	○	●	○			
Interface: Prepare concept requirements with existing buildings and equipment.	Draw/Spec	●					○			○		○	○	○	○	●			
Calculations: Undertake design modelling to test concepts including radiation at boundaries, structural behaviour, smoke generation, escape times, etc.	Report	●					○			○					●	○			
Egress: Analyse including required egress time and available egress time (if applicable). Confirm escape route requirements and dimensions.	Report	●					○					●			●	○			
Smoke Extract: Prepare extract strategy and coordinate with mechanical.	Rep	●					○					●			●	○			
Building Services: Input into and expand the services concepts.	Report	●					○		○	○		●	●	●	○	●			
Drawings: Locate fire cells, fire ratings and escape routes, evacuation zones (if applicable).	Draw	●					○					○			●	○			
Coordinate documentation: Mark up other disciplines' drawings showing fire ratings, egress routes and widths, special items, major plant and connections.	Draw	●					○			○		○	○		●	○			
Structural behaviour in fire: Analyse and identify/coordinate methodology for applied fire proofing of structure in conjunction with architect and structural engineer.	Report	●					○			○					●				
Radiation to boundary: Preliminary guidance.	Report	●					○			○					●				
Smoke production/extract: Preliminary calculations.	Report	●										●			●				
New Zealand Fire Service: Meet and discuss preliminary fire safety provisions under the NZBC clause C3.3.9. Liaise with design team as to requirements.	Minute/ Notate/Report	●					○								○	●			
New Zealand Fire Service: Meet and discuss with evacuation scheme provider preliminary evacuation scheme.	Minute/ Notate/Report	●		○			○								●	○			
Other: (specify)	Other: (Specify)																		●