

## Appendix 1 - Detailed Technical Design – Scope of Works

Overarching – the highway and technical designs need to be fully coordinated, achieve all relevant technical approvals and form the basis of works information for the procurement of contractor(s) to deliver the identified works.

### Detailed designs, specifications and workstreams

This will include the following as a minimum:

- Gap analysis and advise on any further information / survey needed to achieve project objectives and deliverables.
- Develop a Civil 3D model and establish BIM level 2 procedures and processes.
- Develop an 3D Ground model to enable:
  - Global site earthworks strategy
  - Identifying site preparation and groundwork details
  - Balanced site cut and fill etc.
  - Phased approach to enable delivery of infrastructure works
- Strategic Construction Environmental Management Plan, considering:
  - Site access
  - Construction haul road
  - Site clearance
  - Temporary works
  - Environmental impacts and mitigation
- Highway (inc. any separate non-motorised user routes) design should include:
  - Typology, layout and levels.
  - Geometric design (horizontal and vertical alignment) of highways with tie-in to existing roads, connections and new access arrangement to future development parcels.
  - Road drainage layout and detailed design.
  - Utilities / services layout (ensuring all potential clash points are identified and managed).
  - Street lighting, road marking & crossing layouts Street trees and other Lighting Road restraint systems
  - Street furniture layouts and details
  - Clash detection and potential conflicts (including visibility splays etc.) relative to all utilities, services, drainage, street furniture and street trees/landscaping are identified and managed.
  - Construction details
  - Structures detailed design (if and where needed) relative to bridge(s), culverts, retaining walls etc.
- Ground improvement details where applicable.
- Drainage, to include
  - Highway drainage including SuDS: swales, scrapes and SUD's channel planting plans, surface water ponds and attenuation basins.
  - Site wide strategic SuDS.
- Landscaping and ecology, to include:
  - Hard landscaping layout incorporating construction details / finishes.
  - Soft landscaping layouts and planting plans and schedules.
  - Tree and Hedgerow protection/translocation measures.
- Fully co-ordinated setting out of all aspects of the design.
- Construction details of all aspects of the design.

### Production Information

All drawings to include as a minimum:

- Unique drawing number with suitable revision annotation plus historical dated revision description to allow detail of drawing revision to be captured (i.e. should not just say "Drawing Updated"). Revisions to be clouded on drawing with revision prefix adjacent.
- Include a clear and concise drawing title with "Drawn by" and "Reviewed By" spaces to allow tracking
- Clearly noted drawing size with usable scale and/or scale bar plus North arrow.
- Annotation, dimensions, line types and hatching to be neatly set out and readable when printed to scale in hard copy.
- Provide design information in hard copy (if requested) and electronic format.
- Electronic drawings to be produced as scalable PDF's and DWF's (as required). File names to include full unique drawing number, revision and drawing description. Drawings to be uploaded to a file sharing system made available, by the Principal Designer, for this commission.

### Infrastructure Works Tender and Award

This will include the following as a minimum:

- Preparing all project Tender documentation. This will include all Contract Documentation, specification, drawings, Risk Assessments and Method Statements, Health and Safety Plan, Site Waste Management Plan etc. Any other documentation necessary for Tender purposes to be highlighted, referenced and completed.
- Administering and carrying out Tender exercise using Pro-Contract (Homes England e-tendering portal), including setting up of project, answering any contractual queries, updating bidders on decisions and completion/closure of procurement exercise. Guidance on the use of Pro-Contract is available from Homes England procurement team.
- Coordination, vetting and appraisal of returned Tenders and completion of Tender report(s) for recommendation of successful Contractor(s).
- Assisting Homes England Financial Appraisal Team with financial verification checking of preferred Contractor(s) post tender and ahead of Contract Award.
- Assisting Homes England Project Manager with internal approval procedures and writing of papers, including Approval to Tender and Approval to Appoint a Contractor.
- Liaison with Homes England appointed Solicitor pre and post tender award to carry out legal contract checks and ensure the works are procured and managed effectively.

### Contract Management

This will include the following as a minimum:

- Provide Project Management and Contract Administration in accordance with NEC3/4 EEC Contract (Option A or C).
- Project Management and Supervision of works through to completion. This will extend to include the defects correction period (normally 12 months) if required by the works.
- Monitor and ensure compliance with contractual programme, cost and specification to achieve key milestones and project critical deliverables.

- Obtain a detailed construction phase programme from the Contractor and periodical revisions to the construction phase programme as the Project progresses. Monitor the construction phase programme against actual progress and inform the Client as to progress.
- Raising any risks, issues or additional work requirements with Homes England Project Manager at the earliest opportunity.
- Manage and coordination with CDM Principal Designer, to ensure effective delivery of the project.
- Assessment and verification of Contractor interim payment certificates and certifying payments, including final account and payment of interim and final retention.
- Develop and maintain the Project cost plan and the Project cash flow forecast for the duration of the Project.
- Facilitate, set up and manage value engineering exercises where appropriate.
- Facilitate, set up and manage early warning and risk reduction meetings.
- Advise on the cost of variations to the works prior to the issue of instructions under the Building Contract.
- Agree the cost of instructions, excluding loss and expense claims, issued under the Building Contract.
- Advise on the rights and obligations of the parties to the Building Contract.
- Prepare recommendations for interim payments to the Contractor and the release of retention funds.
- Advise the Client in regard to payment notices, payless notices and other similar notices of default.
- Prepare for issue payment notices, pay less notices and other similar notices of default.
- Prepare the final account or similar financial statement. Facilitate agreement to the final account or similar financial statement from the parties to the Building Contract.
- Where relevant, prepare recommendations for the payment of liquidated damages by the Contractor

#### Contract Completion

This will include the following as a minimum:

- Final sign off of site works and Issue of completion certification, in accordance with the chosen Form of Contract.
- Liaison with Homes England Estates Team for snagging, final treatments and hand back of site.
- Monitoring, assessment, design and management of works during Defects Correction Period, through to final sign off and completion.
- Ensure completion of final reports and files (e.g. Technical Studies, H&S File) to facilitate development of the cleared site.
- Completion of Consultant Warranty and support with obtaining Contractor Warranty(s) for future development. Note : the future Developer of the site will not normally be known on completion of the site works, but there is provision in all Homes England Contracts for Collateral Warranties to be provided at any point in the future.

#### General Services

- Carrying out duties as Designer (CDM-D) and Principal Designer (CDM-PD) in accordance with current CDM Regulations 2015 and to reflect residual risk items on design information, relative to professional discipline.

- Organise, Chair and minute regular Design and Coordination Meetings throughout the duration of the projects as necessary.
- Lead on value engineering and buildability reviews in a timely manner to achieve a cost effective solution and provide advice relative to whole life costing.
- Ensure that risk and opportunities are being managed throughout the duration of the project.
- Advise on the need for and the scope of services to be provided by other consultants, specialists, and the constructors and suppliers as necessary.
- Liaise with other Consultants and specialist designers/suppliers to ensure integration of design proposals generally.
- Advise as necessary on design team work (including specialist designers/suppliers) commenting on drawings produced, such that their works can be properly integrated into the works.
- Develop the specification, tendering, supervision and procure ground investigations as required to support all aspects of the design (if required).
- Advise and agree the details of the type of construction, quality of materials and standard of workmanship.
- Assess any alternative designs, materials or products proposed and advise accordingly. To include durability, longevity and environmental analysis.
- Advise on the need to obtain statutory approvals, licenses, consents, orders and permits as appropriate.
- Advise in writing of any significant changes in design which may affect the cost or programme at the earliest opportunity.
- Submit all necessary information to the Planning Authority to obtain planning approval and/or seek discharge of conditions or reserved matters to an existing Planning Approval.
- Submit all necessary information to the County Council, or other stakeholders or adopting authorities, to obtain Technical Approval relative to Highways Act including S.38 and S.278 as required.
- Submit all necessary information to the County Council, or other stakeholders or adopting authorities, to obtain technical approval for any necessary stopping up or highways diversion orders for S.247 and S.248 (as required).
- Submit all necessary information to the County Council to obtain Approval In Principle relative to all bridge and/or other structures design and final Technical Approval (as required).
- Prepare and manage technical submissions to any relevant stakeholders and asset owners for any existing utilities diversions or build over agreements that are required. Implications of any diversions to be fed into cost plan programme.