

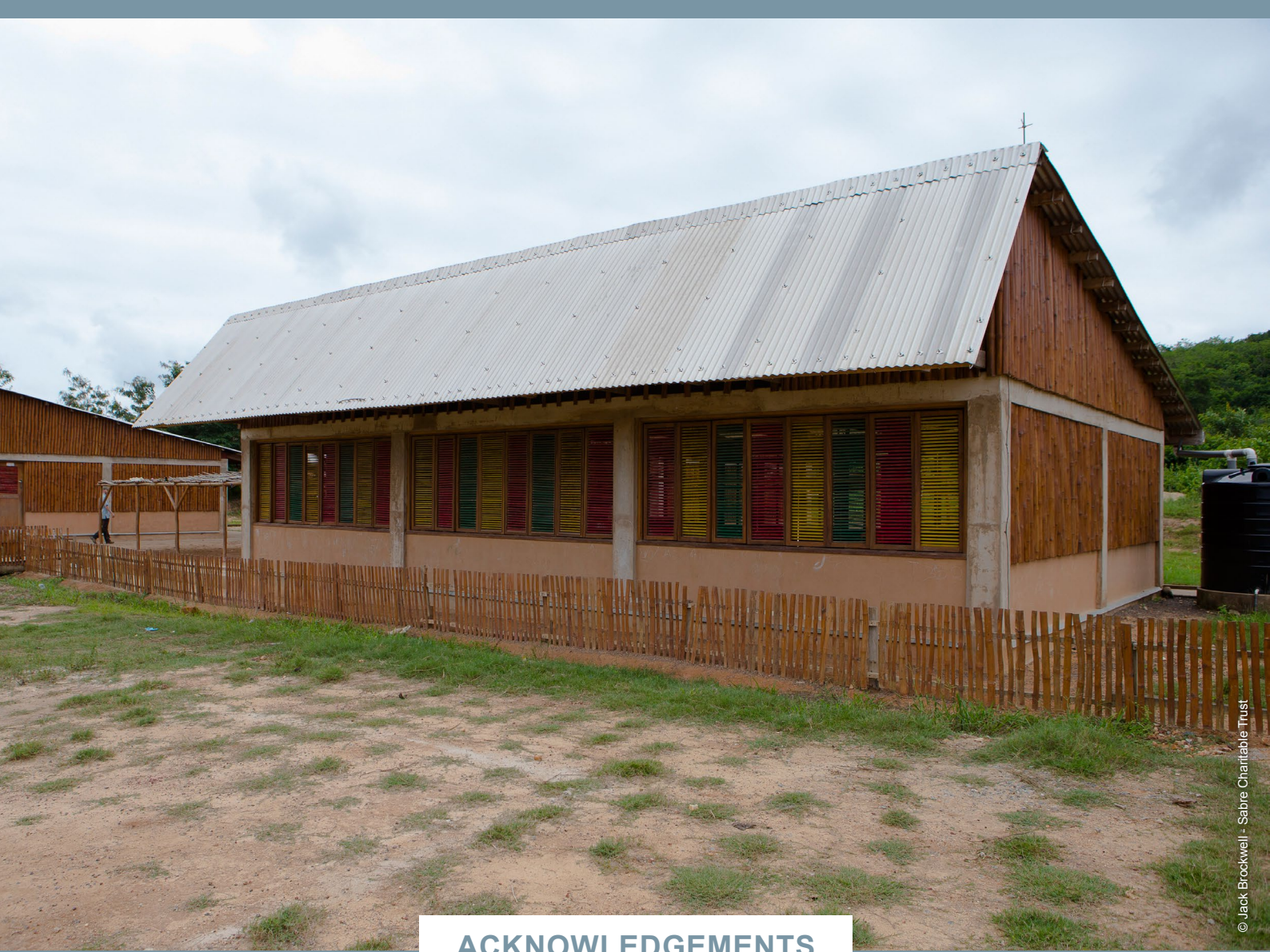


Global Shelter Cluster
ShelterCluster.org
Coordinating Humanitarian Shelter

CONSTRUCTION GOOD PRACTICE STANDARDS

*Common standards for the responsible delivery
of building construction in humanitarian settings*



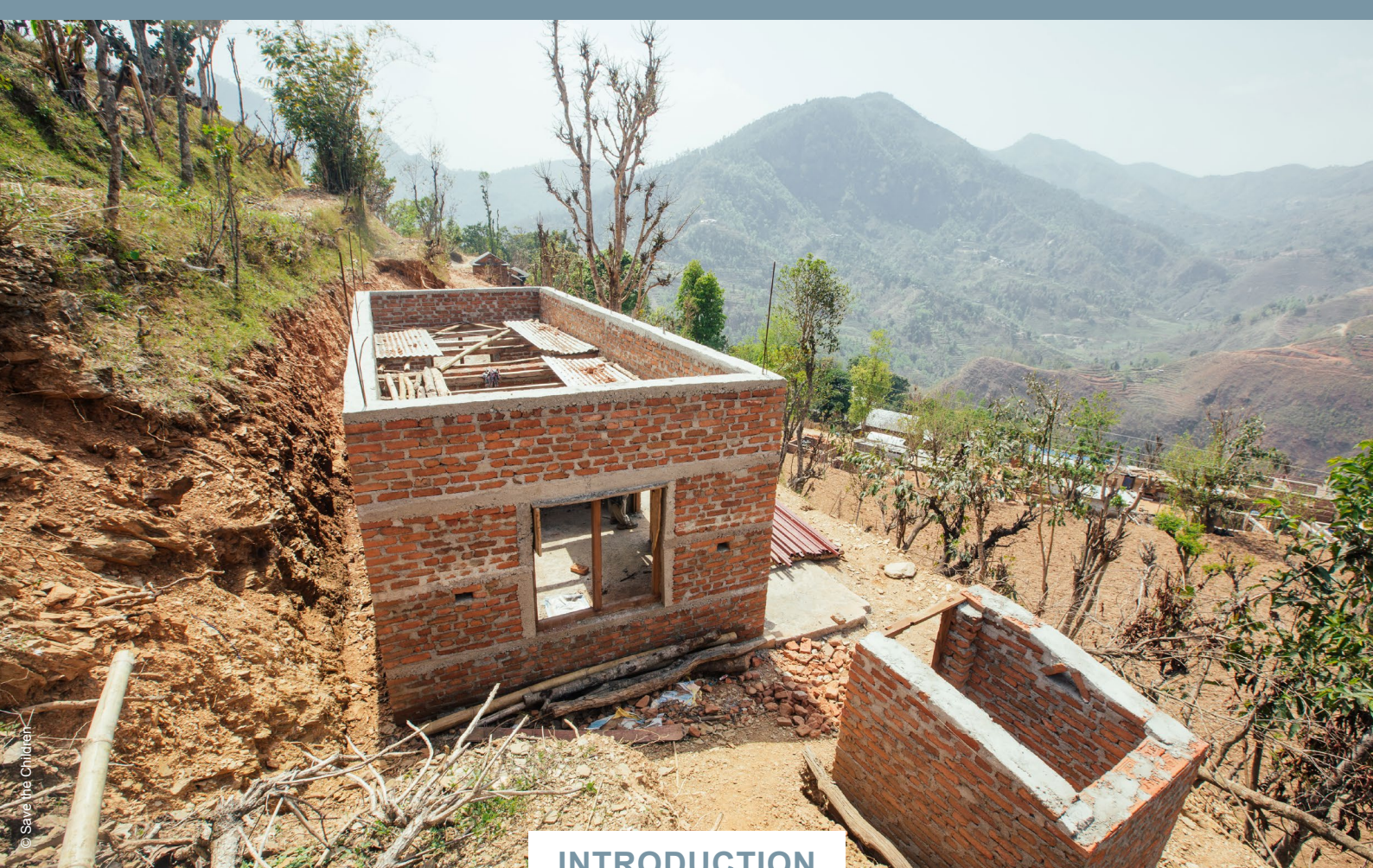


ACKNOWLEDGEMENTS

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This version of the document is released as a consultation draft for a period of 12 months before a final document is released. Please provide any feedback on this document to Dominic Courage [d.courage@savethechildren.org.uk]



INTRODUCTION

This document sets out common standards for the responsible delivery of building construction in humanitarian settings as agreed by the Shelter Cluster. As such it represents a willingness across the sector to be much more accountable in ensuring the safety, timeliness and quality of the buildings that agencies are responsible for. Building construction is an essential part of a wide range of development and humanitarian programming. This sizeable collective investment brings the opportunity to create exceptional spaces and facilities for service delivery that significantly enhance the outcomes of health, protection, education and the delivery of many other services. Conversely, poor design, planning, implementation and maintenance can leave users underserved and vulnerable to injury or death, not just for the lifetime of the assistance but critically for the subsequent lifetime of the building. Implementation in the contexts where we work is often challenging and carries complexity due to the high vulnerability of buildings to environmental hazards.

Irrespective of whether construction is implemented through direct labour, contractors or some degree of community involvement, the responsibility ultimately falls to

the promoting agency. Even in owner-driven modalities, agencies take responsibility for the quality of design, material and training inputs that influence the outcome for beneficiaries.

Why do we need Principles and Standards for construction? Standard globally recognised construction practice and building codes can be inconsistent in some settings with humanitarian imperatives, internal pressures, donor expectations. These conflicting demands can sometimes result in legitimate but poorly understood trade-offs that compromise building quality in favour of more immediate pressures. Uncomfortable compromises often derive from the pressures inherent in the funding environment, organisational politics and are based on a lack of awareness of the good practice needed to deliver construction well. By establishing Construction Good Practice Standards, these internally derived compromises can be better understood and addressed by decision makers. It is anticipated that in doing so, these standards will influence greater commitment to eliminating the false economies; shortcuts and lack of oversight that limit public safety and decrease the sustainability and resilience of the buildings.

SCOPE

THE SCOPE OF THIS DOCUMENT IS SET OUT BELOW:

	IN SCOPE	OUT OF SCOPE
TYPOLGY	PERMANENT PUBLIC FACILITIES The design, construction, alteration, relocation, enlargement, replacement, repair and maintenance of public buildings and facilities. SHELTER Where agencies have direct control of the outcome (see modality below)	
LIFESPAN	PERMANENT OR UPGRADABLE TO PERMANENT Construction works that can be expected to be in use for more than 6 months	BASIC STRUCTURES FOR EMERGENCY USE Very basic structures including tents that are intended for emergency use only with no likelihood of future adaptation
MODALITY	DIRECT CONTROL Activities where the implementing agency has “direct control” over the outcome. Includes all contractor driven activities Includes community led public buildings Includes situations where remote management is necessary	OWNER DRIVEN IMPLEMENTATION Activities where the beneficiary has autonomy over how construction is carried out.

WHAT ARE THE CONSTRUCTION GOOD PRACTICE STANDARDS?

Construction Good Practice Standards are a commonly agreed baseline level of good practice for the management of construction in humanitarian and development programming.

The document is organised into guiding principles and good practice standards throughout the construction process that indicate attention to good practice. Described below, they are universal in wording and nature and can be applied to most contexts and a wide range of buildings and modalities.

GUIDING PRINCIPLES

The Construction Good Practice Standards are informed throughout by nine Guiding Principles that set the level of expectation for good practice in construction in the conflicted and varied contexts where humanitarian and development work is undertaken.

GOOD PRACTICE BENCHMARKS

The benchmarks themselves describe a basic level to which critical construction activities should be carried out if they are to lead to a safe, sustainable, and effective construction outcome. The simple phrasing should be applicable in all contexts but the methodology by which the standard is achieved will vary significantly and must be tailored to the challenges of a particular situation.

► REPRESENTATION

As a collaboration between multiple participating agencies, the CGPS represent a widely held position on good practice in construction. The CGPS is published by the Global Shelter Cluster as a normative standard for construction good practice in the Aid sector. As such they provide the basis for donors, agencies and beneficiaries to benchmark construction activities and thereby justifying the requisite resources, time and expertise required to deliver construction safely, on time and to the benefit of both current and future generations of users.

► WHAT THEY ARE NOT

The CGPS are not intended to provide guidance as to how these standards can be achieved since multiple manuals; trainings and guidelines are available covering best practice methodologies.

The CGPS do not offer a one-size fits all approach to construction and it is expected that the correct expertise will be brought on board to provide the necessary expertise for a given project in order to meet the standards.

HOW SHOULD CGPS BE USED?

Use of the CGPS is envisaged to be similar to the way that SPHERE standards established a common language and expectation for humanitarian response. The CGPS is therefore a voluntarily adoptable standard that can be used in a variety of ways with anticipated uses listed below:

PROPOSAL DEVELOPMENT

Agencies may wish to reference the standards to justify the inclusion of appropriate time, cost and resourcing in proposals to ensure an acceptable standard of construction outcome.

AGENCY AND PARTNER LEVEL STANDARD SETTING

By setting a common standard for construction, agencies will be able to assess their performance across a number of grants or country programmes. This can be used as a powerful tool to push for greater attention to improving construction processes.

AWARENESS RAISING / TRAINING

The CGPS offers a framework for the development and implementation of training designed to meet the normative standards of good practice that the CGPS defines.

PUBLIC COMMITMENT

Where the capacity to do so is established it may be possible to for agencies to make public commitments to hold themselves accountable against the

DONOR COMMITMENT

Donors (government and private) may wish to use the Construction Good Practice Standards to establish mandatory requirements from their implementing partners, either on a universal or a proposal specific basis.

RESPONSE CLUSTER GUIDANCE

Clusters at country level may wish to establish the standards as common guidance for implementing agencies wishing to engage in construction activities.

GUIDING PRINCIPLES

The Construction Good Practice Standards are informed throughout by nine Guiding Principles that set the level of expectation for good practice in construction in the conflicted and varied contexts where humanitarian and development work is undertaken.

NATIONAL GOVERNANCE

In all cases the national system of construction governance is the primary driver of construction standards. The primacy of national standards informs all decision making around how construction in humanitarian settings is planned, designed, and implemented.

1

PROGRAMMING

Construction projects do not exist in isolation but are undertaken to enable essential programming for the improvement of outcomes for beneficiaries.

2

SAFETY STANDARDS

Construction projects meet accepted local (government) or internationally accepted standards for structural life-safety, public health and WASH.

3

HAZARD ASSESSMENT

Construction projects consider locally assessed multiple hazards; and incorporate hazard mitigation techniques.

4

STAKEHOLDER PARTICIPATION

Communities and other stakeholders are central to the construction project process. Agencies will engage as partners throughout the process.

5

LOCAL PRACTICE

Designs will build on local knowledge and practice to support that the building can be maintained, sustainably used and replicated.

6

LOCAL LIVELIHOODS

Local procurement of materials and labour are encouraged and local skills will be developed wherever possible. Payments to suppliers will be timely and transparent.

7

SITE SAFETY

The Health and Safety of all stakeholders engaged in the construction project is central to all planning and decision-making.

8

MAINTENANCE

Maintenance planning is considered early in the project cycle ensuring that community buy-in and ownership of the building in operation.

9

SUSTAINABILITY

The long term sustainability of the project including environmental and social impacts on the local area is considered and adverse effects appropriately mitigated

GOOD PRACTICE BENCHMARK STANDARDS

The above guiding principles are reflected in this section as Benchmark Standards that describe good practice at each stage of the construction process. Application of the Benchmark Standards will increase the likelihood of quality outcomes that mitigate risks and realise opportunities for children and their communities. The benchmarks are

A B C D E F PROPOSAL DEVELOPMENT DESIGN PLANNING PROCUREMENT CONSTRUCTION HANDOVER AND USE					
UNIVERSAL Benchmarks Higher level benchmark standards for the attention of donors, clusters and implementing organisation.	COMMUNITY PARTICIPATION Communities are consulted, engaged and empowered at all decision points in the standards described above. The level of participation is informed by an active assessment of capacity with the aim of transferring as much power as is feasible to the beneficiary community to ensure a safe outcome.				
	A1 / STAFFING FOR DESIGN AND SUPERVISION Any proposal includes a defined allowance for design and construction supervision costs equivalent to 5-15% of the total construction value as an absolute minimum. A2 / PROPOSAL NARRATIVES Proposal narratives commit to best practice and are as explicit as possible about how the construction standards will be achieved	B1 / DESIGN FOR SAFETY Designs have taken into consideration the local hazards and have adopted national or international codes/regulations as technically appropriate to ensure safety and maintainability B2 / SITE SELECTION The selection of sites is carried out with direct input from a technical specialist and ensures that local conditions and land tenure issues are appropriately considered B3 / INDEPENDENT VERIFICATION Design and implementation are verified by an appropriately qualified technical professional who has not been directly involved in the project.	C1 / WORKPLAN All construction activities are planned in detail and monitored ensuring a full understanding of interdependencies between activities and programme risks	D1 / TENDER ADVERTISEMENT Construction tenders clearly communicate bid requirements, contract terms and risks to support a transparent process D2 / TENDER EVALUATION Contractors and suppliers are selected based on quality ahead of cost, based on thorough assessment of their technical and financial capacity	E1 / HEALTH AND SAFETY Agencies, communities and contractors actively contribute to supporting a culture and processes for project safety E2 / QUALITY ASSURANCE Regular, documented site supervision and monitoring is carried out by an Engineer or Construction Supervisor actively working to ensure quality in line with the contract F1 / MAINTENANCE PLANNING A maintenance plan is developed together with the community or building operator/owner detailing the planned work required to maintain the building

GOOD PRACTICE BENCHMARK STANDARDS

presented as Universal and Operational benchmarks that are differentiated by their intended audience. All standards are relevant for implementing agencies but the universal benchmark standards should also influence donors, technical clusters and other coordination bodies who influence the construction approaches that are planned and funded.

	A	B	C	D	E	F
	PROPOSAL DEVELOPMENT	DESIGN	PLANNING	PROCUREMENT	CONSTRUCTION	HANDOVER AND USE
OPERATIONAL Benchmark	COMMUNITY PARTICIPATION Communities are consulted, engaged and empowered at all decision points in the standards described above. The level of participation is informed by an active assessment of capacity with the aim of transferring as much power as is feasible to the beneficiary community to ensure a safe outcome.					
	A3 / FEASIBLE BUDGETING Proposals are budgeted to incorporate design for natural hazards and context recognising necessary deviations from standard designs and allowances for risks and assumptions. A4 / HAZARD ANALYSIS A thorough mapping of environmental hazards informs planning of designs to resist for example, earthquakes, high winds and flooding in areas of operation. A5 / PROPOSAL RISK ASSESSMENT Risks that may compromise the quality, timeliness, cost, and safety of buildings documented and mitigations are planned into the project implementation. A6 / IMPLEMENTATION MODALITIES All options for implementation are considered with appropriate planning for staffing to maximise community involvement.	B4 / DESIGN FOR INCLUSIVE USE The design requirements for construction work are fully described and agreed at the outset, including time, cost and quality constraints along with planned community participation to facilitate an appropriate design and approach B5 / DESIGN FOR INCLUSIVE USE Buildings are designed together with the community to ensure that they are for example, child-friendly, gender sensitive and accessible to the disabled. B6 / DESIGN DOCUMENTATION Design Drawings, Specifications and Bills of Quantities are coordinated and of a high standard to include details that fully define the building and associated infrastructure.	C2 / RISK MANAGEMENT PLAN Risks including construction health and safety risks are captured in a Risk Management Plan and monitored on an ongoing basis C3 / SEASONAL PLANNING Annual construction planning is on the basis of a sound understanding of access and market constraints resulting from seasonal and social cycles C4 / STAFFING AND CONSULTANCIES Technical Terms of Reference are well defined by a construction professional and staff are selected based on robust technical interview and managed with sufficient technical understanding to ensure quality outputs	D3 / PROCUREMENT STRATEGY A robust market analysis drives procurement decisions that: attracts quality suppliers; allocates risks to the party best placed to manage them and; encourages local procurement D4 / CONTRACT DOCUMENTATION Construction contracts are robust construction specific legal documents that capture equitable terms and conditions between signing parties	E3 / CONTRACTUAL COMMUNICATIONS All formal contractual communications are recorded and signed-off as appropriate to ensure that processes are properly managed and documented E4 / MEETINGS AND REPORTING A systematic meeting and reporting schedule is in place to ensure that progress is properly managed and communication with all community and government stakeholders is maintained	F2 / DEFECTS MONITORING Quality is ensured after the completion of the buildings with a systematic process of defects monitoring and rectification in line with contract terms.

GUIDANCE AND APPROACHES

This section provides guidance and recommended approaches to how the benchmark standards can be achieved in a way that adapts to the context and type of project being undertaken.

A

PROPOSAL DEVELOPMENT

Benchmark Standard / Approach / RELEVANT TOOL/GUIDELINE

STAFFING FOR DESIGN AND SUPERVISION

A1 Any proposal includes a defined allowance for design and construction supervision costs equivalent to 5-15% of the total construction value as an absolute minimum.

Lack of human resources for design, planning and supervision of construction is a primary reason for poor construction delivery. The necessary staffing level will vary depending on various factors relating to the building type, implementation method and context.

For the majority of projects, a minimum of 5-15% (depending on context) of the construction budget is a pre-requisite for compliance with the guiding principles. The table below provides guidance for the minimum level of technical input required including supervision; design and verification along with technical management to coordinate resources. The exact resourcing will require professional judgement from a technically competent person.

		BUILDING TYPE	
PROPOSAL STAGE CONSTRUCTION TECHNICAL ALLOCATION (AS %-AGE OF CONSTRUCTION VALUE)		Refurbishment / renovation or straightforward construction to previously used design templates	• Retrofitting or structural modifications • Multi-storey or unusual buildings • High risks identified by a hazard risk assessment • Community driven process.
EXTERNAL FACTORS	Stable, well established country programme in a functioning construction market	5%	10%
	• Political, regulatory or economic environment makes high quality construction challenging • Emergency context • Construction has been infrequent or problematic in the past • Diverse project locations	10%	10%

The 5-15% support costs should cover:

- Structural assessment and feasibility assessment
- Detailed building design
- Site supervision
- 3rd party verification
- Community mobilization and engagement for community-led construction

Additional costs may be required for:

- Soil testing and geotechnical analysis
- Land survey
- Bespoke architectural design
- Infrastructure
- Development of country level standards and other highly repeated designs

GUIDANCE AND APPROACHES

A

PROPOSAL DEVELOPMENT

Benchmark Standard / Approach / RELEVANT TOOL/GUIDELINE

PROPOSAL NARRATIVES

A2

Proposal narratives commit to best practice and are as explicit as possible about how the construction standards will be achieved

A well described construction narrative is an opportunity to demonstrate how the quality of construction can contribute to the overall aims and objectives of the project. Committing to these construction objectives at an early stage should be attractive to donors whilst ensuring that resources are adequately directed towards quality outcomes. Key elements that will strengthen the narrative are listed below:

CONSTRUCTION MODALITY [See A6]: Outlines whether the process will be: Community-led; Directly implemented by the agency or; built by a contractor. Community components should illustrate the programmatic benefits that may derive from involving beneficiaries.

APPROVAL PROCEDURES: Highlights mandatory processes which may include the following:

- Pre-construction approvals: Land tenure; building ownership; planning permission and design sign-off.
- Design approvals: drawings, BoQs and specifications to be signed off by the appropriate authorities.
- Handover approvals: The process for handover of the completed building to the receiving institution must be set out in the proposal including their responsibility for maintenance.

BESPOKE OR STANDARD DESIGNS: Describes all steps that are required in the design process and links to the necessary budget to carry out these activities. Identifies whether a bespoke design is required or whether a government standard design is to be adopted (or other International/Agency template).

REFURBISHMENT/REHABILITATION: Differentiates refurbishment/rehabilitation of buildings that require a structural engineering assessment by a qualified professional to be undertaken at feasibility stage.

ENVIRONMENTAL HAZARDS [see A4]: Includes construction related hazards in the risk assessment and commits to ensuring that the designs and completed building(s) address any significant hazards in line with local (and where necessary international) building practice.

DESIGN FOR VULNERABLE GROUPS AND WASH [see B4 and B6]: Commits to incorporating appropriate child-friendly design, gender sensitive design, disabled access, and WASH facilities.

WORKPLAN [see C1]: All time-frames in the construction process have been reviewed by a technically qualified person. This ensures that sufficient time has been allowed for feasibility and detailed design; site selection; tender; contractor assessment; construction; relevant approvals processes and seasonal interruptions due to weather.

FEASIBLE BUDGETING

A3

Proposals are budgeted to incorporate design for natural hazards and context recognising necessary deviations from standard designs and allowances for risks and assumptions

Budgeting for appropriate designs requires an understanding of numerous inputs to the standard design. Any standard design budgets should allow for differing ground conditions; hazard mitigation, seasonal cost variations and access constraints. Bottom-up estimates based on the above should be complemented with a top down estimate comparing similar buildings in various locations and contexts or a rate per m².

Where detailed design information and site constraints are not fully available for the proposal, a budget based on top down estimation can be used provided that additional contingency (typically around 15%) is included to allow for unforeseen circumstances and likely design developments.

GUIDANCE AND APPROACHES

A

PROPOSAL DEVELOPMENT

Benchmark Standard / Approach / RELEVANT TOOL/GUIDELINE

HAZARD ANALYSIS

A4

A thorough mapping of environmental hazards informs planning of designs to resist for example earthquakes, high winds and flooding in areas of operation

A sound understanding of hazard maps as they relate to areas of operation will inform the development of proposals and designs. Not all government's standard designs adequately consider natural hazards present in the country, particularly if hazards are localised to specific regions.

Where implementation is at scale, agencies should employ further advice to be satisfied of a safe design

[Prevention Web: Hazard Maps](#)

[UNEP Hazard Mapping Web Resources \[link\]](#)

PROPOSAL RISK ASSESSMENT

A5

Risks that may compromise the quality, timeliness, cost, and safety of buildings documented and mitigations are planned into the project implementation

Systematic management and highlighting of construction risks from the outset of a project helps to ensure that the impact of unplanned events is well mitigated. Inadequate attention to construction risks may lead to an overall lack of focus on delivering construction activities that may compromise the delivery of the entire programme. Effective mitigations may require the allocation of additional resources to support delivery.

Many construction risks are routinely faced with typical examples listed below:

- Children and adults (or livestock) falling down open excavations and wells during construction; inadequate protection measures on site
- Unverified engineering capacity leading to unsafe designs being constructed
- Poor quality workmanship of structural elements due to a lack of supervision or missed design aspects.
- Loss of access due to inclement weather
- Unknown stability of rehabilitated building leads to an unsafe building being perceived as safe by the community / users.
- Unanticipated inflation of the cost of materials and labour during the project period.
- Client or government pressure on budget compromises quality and safety of the building
- Poor quality workmanship and materials compromises the use of the building or delays its delivery

GUIDANCE AND APPROACHES

A

PROPOSAL DEVELOPMENT

Benchmark Standard / Approach / RELEVANT TOOL/GUIDELINE

A6

IMPLEMENTATION MODALITIES

All options for implementation are considered with appropriate planning for staffing to maximise community involvement

The choice of modality is decided as early in the planning process as possible as the path chosen will have significant implications on timeframe, budget, and levels of staffing. Unless community involvement is planned into the proposal, it can be difficult to introduce this at a later stage with affecting resources or the project timeline. Implementation options can be broken down into three basic modalities:

- a. Community led construction
- b. Building Contractor
- c. Direct implementation by the agency
- d. Delivery by partner agency or local authorities

Selection of the appropriate implementation modality is informed by an understanding of numerous factors that include:

- Prioritisation of community ownership
- Building complexity
- The operational context
- Regulatory environment
- Team capacity

All four modalities require the frequent site presence of qualified construction professional to control and monitor safety, quality, materials, and progress.

Community-based construction covers a spectrum of possible community involvement, from making informed programmatic planning and design decisions to directly taking part in its construction. Community led has the potential to deliver inclusive and quality outcomes, but requires significant planning and oversight to ensure that the design and safety targets are achieved.

A Building Contractor is the traditional way of procuring construction. It is appropriate for more complex buildings or contexts with an active construction market that routinely engage in building construction.

Direct implementation puts all of the responsibility for delivery of the construction project with logistics and project teams. This is normally only pursued when strong logistics capability is available and other options are not suitable due to a very low capacity contracting market or highly inaccessible locations.

GFDRR: ['Towards safer schools construction: a community based approach'](#)

GUIDANCE AND APPROACHES

B

DESIGN STAGE

Benchmark Standard

DESIGN FOR SAFETY

B1 Designs have taken into consideration the local hazards and have adopted national or international codes/regulations as technically appropriate to ensure safety and maintainability

Quality design must respond to the evaluation of likely future hazards relative to natural or human-induced hazards and vulnerable conditions.

Government building standards are the primary reference point for ensuring the safety of designs. However, agencies must verify that hazards have been fully considered and be satisfied that the standards are a good reflection of international good practice, particularly in seismically active terrain and areas prone to cyclone or flood events. This may go beyond the scope of some government standards and may require the application of international standards to complement what is present locally. Whilst many standard designs exist for public buildings, they are rarely ideal for every context. Standard designs need to be adapted to the particular building sites and still need to be verified to ensure they building code compliant for the local environmental hazards. They also need to be checked to make sure that the designs are locally appropriate in terms of design and constructability.

[USAID - Sector Environmental Guidelines: Small Scale Construction](#)

[USAID - Sector Environmental Guidelines: Small Health Facilities](#)

[USAID - Sector Environmental Guidelines: Primary and Secondary Day Schools](#)

[UNOPS - Design Planning Manual for Buildings](#)

SITE SELECTION

B2 The selection of sites is carried out with direct input from a technical specialist and ensures that local conditions and land tenure are properly considered

DESIGN

The selection of a site is a key design decision, particularly with buildings of a standard design. Understanding the feasibility, constraints and opportunities offered by a site will affect not just the design of the buildings itself but also the cost and time required for implementation. Proper site selection considers all aspects of the site including physical and environmental hazards, land tenure, access constraints, ground conditions, material and labour availability etc. This will inform the detailed design and cost development; improve procurement outcomes and support programmatic decision making.

LAND TENURE

In addition, the site selection process verifies land tenure and establishes the process for transfer of the site ownership to the appropriate party. Whilst in some locations formal full verification is not possible, formal land tenure documentation includes:

- Cadastral survey showing property, adjacent properties and landmarks, tied into one or more benchmarks, fixed points (of known location) or monuments.
- Government registration of survey and certificate indicating the validity of the survey and ownership of the said property.

Transfer of the land to the appropriate party should be agreed prior to starting on site. Not doing so will introduce a risk that the building cannot be handed over to the end user undermining the entire project.

Where customary laws are applicable, the project should endeavour to understand the rights systems and process and ensure communal agreement takes place to facilitate a formal land tenure agreement.

GUIDANCE AND APPROACHES

B

DESIGN STAGE

Benchmark Standard

INDEPENDENT VERIFICATION

B3

Design and implementation are verified by an appropriately qualified technical professional who has not been directly involved in the project

Independent verification is a means for agencies to assure their responsibility for the design in accordance with government standards and international enhancements to the building code.

Construction works should undergo an independent design review process and site inspection as part of the quality management plan. At design stage, this addresses planning issues and establishes whether the design solution meets the performance requirements whilst adhering to the prevailing buildings standards. During construction stage, the independent reviewer will verify that the main structural and life-safety design elements are incorporated to an acceptable standard in line with the design intent.

Independent verification is carried out by an appropriately qualified and experienced engineer who is registered in a country with an established building code and engineering association. Reviewers are able to perform their task independently and with reasonable arm's length distance from the project. Whilst reviewers may work for the same organisation, agencies need to be satisfied that the engineer responsible for independent verification:

- Is not working directly on the project
- Does not stand to lose or gain financially or professionally due to the results of the review
- Is not unduly influenced by the project team

Reasonable safeguards should be put in place to ensure that an 'arm's length' review is achieved throughout the project.

DESIGN BRIEF

B4

The design requirements for construction work are fully described and agreed at the outset, including time, cost and quality constraints along with planned community participation to facilitate an appropriate design and approach

Programmatic needs such as level or urgency, number of users and design life may substantially affect the design and implementation modality. Agreeing these considerations in detail at the outset will minimise time spent reworking the design or resources misused on inappropriate construction.

The Design Brief clearly records spatial necessities, constraints, functional requirements (including WASH), community participation, material preferences, accessibility needs, gender needs, energy supply, and maintenance responsibilities as well as consider the time and budget available and quality standards to be achieved.

Early dialogue will establish the feasibility of the project proposal and requisite approvals, in order that resources are mobilised and ensure effective and timely delivery of the project. Subsequent changes to the brief can then be recorded to track the likely impact of these on the project.

GUIDANCE AND APPROACHES

B

DESIGN STAGE

Benchmark Standard

DESIGN FOR INCLUSIVE USE

B5 Buildings are designed together with the community to ensure that they are child-friendly, gender sensitive and accessible to the disabled

Even for routine construction, careful consideration of the needs of potential user groups includes the most vulnerable beneficiary groups to use the building.

Various guidelines can assist with ensuring that buildings are designed appropriately for all users including the most vulnerable. Simple, low cost modifications such as ramps, handrails and lighting can enhance programmatic outcomes and acceptance by users and their communities. The involvement of the community and user groups (including children) in the design process is critical to being able to apply these modifications appropriately and innovatively.

[UNICEF Child Friendly Schools Manual](#)

[ISO 21542: Building Construction - Accessibility and Usability of the Built Environment](#)

[Child Friendly Schools Guidelines - Rwanda](#)

DESIGN DOCUMENTATION

B6 Design Drawings, Specifications and Bills of Quantities are coordinated and of a high standard to include details that fully define the building and associated infrastructure

Good quality and coordinated Drawings, Bills of Quantities and Specifications set out in detail how the building components should be assembled on site. Beyond architectural layout, they include precise construction details and exact descriptions of the materials and workmanship that are required to ensure the quality and safety of the design. These documents also technically underpin the contractual agreement and allow agencies to hold contractors to account.

[ICE Designing Buildings Wiki - Drawings](#)

[ICE Designing Buildings Wiki - BoQs](#)

[ICE Designing Buildings Wiki - Specifications](#)

GUIDANCE AND APPROACHES

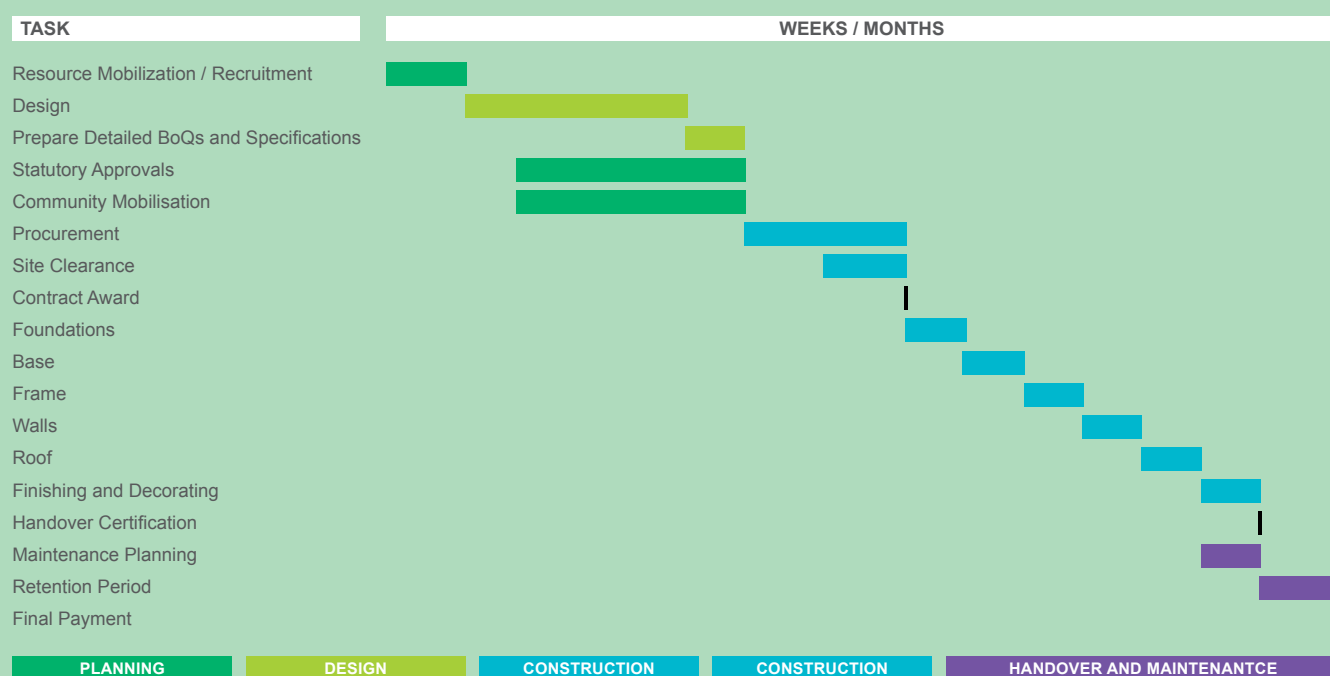
C

PROJECT PLANNING

WORKPLAN

C1 All construction activities are planned in detail and monitored ensuring a full understanding of interdependencies between activities and programme risks

A detailed construction workplan aims to present the general sequence and duration of feasibility assessments, designs approvals and construction related activities. This allows the identification of key dependencies between activities and definition of the critical path activities for timely completion.



Workplans are updated at proposal, inception and contract stages in the project and revised with progress updates and if contextual changes affect the project outcome. The contract workplan is used to provide early warning of delays, drive progress and report on progress to senior management and donors.

RISK MANAGEMENT PLAN

C2 Risks including construction health and safety risks are captured in a Risk Management Plan and monitored on an ongoing basis

Systematic identification, mitigation and tracking of risks will help to minimise the impact of projects not going to plan. To be effective, risks management must be reviewed on a monthly basis to ensure that actions for mitigation are being properly followed up.

Many risks are common to all construction such as contractor delays, site safety, fraud, poor quality works and price inflation. These risks are assessed in the light of the local context as well as including risks that are not normally encountered.

GUIDANCE AND APPROACHES

C

PROJECT PLANNING

SEASONAL PLANNING

C3

Annual construction planning is on the basis of a sound understanding of access and market constraints resulting from seasonal and geographic variation

Clear documentation of how seasons and geographies affect construction on an annual basis will help ensure that all project stakeholders have a common understanding of the constraints when designing, planning and implementing construction work. It also provides useful tools for communicating planning constraints to donors when developing proposals.

The Logistics Cluster Website provides access constraints and maps for disaster affected countries which can be used to assess seasonal variations in access. An experienced local construction professional can advise on the seasonal and geographic variability of construction costs to ensure that construction estimates are accurate.

<http://www.logcluster.org/>

[Emergency Market Mapping and Analysis \(EMMA\) Toolkit](#)

STAFFING AND CONSULTANCIES

C4

Technical Terms of Reference are well defined by a construction professional and staff are selected based on robust technical interview and managed with sufficient technical understanding to ensure quality outputs

Recruiting the right team for the job and then managing their performance is essential for the success of any project and the ability to comply with the guiding principles set out in this document. A well-defined suite of job descriptions should reflect all aspects of the standards at various levels of seniority and be tailored to the country context and 'ways of working'. For one-off design and construction of more complex buildings or independent verification an external consultant may be required.

In all cases the management of technical staff needs to be done by suitably qualified staff that have a strong understanding of the functions they are managing and the standards that are required to achieve success.

[Ref: The Built Environment Professions in Disaster Response - A Guide for Humanitarian Agencies. ICE, RIBA, RICS, RTPI](#)

GUIDANCE AND APPROACHES

D

PROCUREMENT

TENDER ADVERTISEMENT

D1

Construction tenders clearly communicate bid requirements, contract terms and risks to support a transparent process

Communication with potential bidders is critical to ensure that they are bidding on the basis of a sound knowledge of the contractual risks. This requires a tender package that communicates the design and specification in detail along with site constraints identified in the site selection process. Details of selection criteria including the weighting of quality over cost will also be clearly included in the tender advertisement. This can be achieved by holding a pre-tender clarification meeting where the details of the project are clearly explained and contractors can ask questions. The quality of bids received and the ability to identify competent contractors will be greatly improved by attention to this activity.

[Transparency International Guide to Avoiding Construction Fraud](#)

TENDER EVALUATION

D2

Contractors and suppliers are selected based on quality ahead of cost, based on thorough assessment of their technical and financial capacity

The tender evaluation includes an assessment of the human, financial and physical resources that a contractor has at hand to deliver the project. Once non-compliant bidders have been eliminated, interviews with the identified site staff, visits to the construction yard and inspection of previous work and references, all form part of the analysis of bids alongside the usual assessment of cost and financial capacity. This requires a construction professional with relevant skills to advise on the process.

The evaluation and selection of contractors is transparently carried out with criteria weighted according to the weighted scoring included as part of the tender documentation so that contractors are able to bid on a fair basis. Doing so prioritises value-for-money over cost and demonstrates compliance for audit purposes.

[ICE - Design of Buildings Wiki - Tender Evaluation](#)

[World Bank – Procurement of Works and User Guide – SECTION III](#)

GUIDANCE AND APPROACHES

D

PROCUREMENT

PROCUREMENT STRATEGY

D3 A robust market analysis drives procurement decisions that: attracts quality suppliers; allocates risks to the party best placed to manage them and; encourages local procurement

A clear understanding of context, costs and the construction market informs the way in which the procurement is planned. Key procurement decisions include:

- **Packages of work.** A single large package of work will make small contractors ineligible whilst multiple small packages of work may not attract large credible contractors.
- **Eligibility requirements.** Setting minimum eligibility standards such as levels of contractor certification will help exclude weak contractors but setting the certification level too high might not encourage a competitive tender increase the likelihood of collusion.
- **Scoring methodology.** The published tender scoring methodology needs to be tailored to the contracting market. Contractors who are otherwise competent may be excluded due to excessively complex or unachievable requirements.
- **Direct Implementation.** Where market analysis demonstrates an unworkable market for employing contractors it may be necessary to implement directly

Setting the procurement strategy considers the advantages and trade-offs of using smaller local contractors who might lack capacity but may also be beneficiaries of the project. They may offer better support to local livelihoods and understanding of local context which may ultimately encourage community ownership of the end project. Trade-offs may be managed by specifying approved sources of materials or allocating additional supervision resources to manage quality.

CONTRACT DOCUMENTATION

D4 Construction contracts are robust construction specific legal documents that capture equitable terms and conditions between signing parties

Contracts should be standard formats (or adaptations thereof) written specifically for the purpose of construction and include clauses that describe all the key contract management processes. Whichever contract is used decisions will need to be made on the exact terms. Since contractors often have low contractual awareness it is important that the main terms are explained in the **pre-tender clarification meeting** (see D1). A typical construction contract has clauses which include but are not limited to:

- | | | |
|--|---|------------------------|
| • The Scope of Work | • Arbitration | • Practical Completion |
| • The Contract Sum | • Payment, valuation, and retention | • Liquidated damages |
| • Advance Bank Guarantees, insurances and warranties | • Quality of the works, testing and defects | • Defects liability |
| • Access to the site | • Variations and Compensation Events | |
| | • Delays, termination and suspension of works | |

Where a construction contract exists that is standard in the local contexts (e.g. set by the Department of Labour or local engineering board) this should be the first choice of contract.

In some contexts the use of a standard local contract is government mandated for public works. Elsewhere, international bodies such as FIDIC or the World Bank provide internationally recognised contracts for small works. The FIDIC Short Form of Contract is a globally recognised contract for engineering and building work of relatively small capital value (<\$500,000). [FIDIC Green Book](#)

GUIDANCE AND APPROACHES

E

CONSTRUCTION PHASE

E1

HEALTH AND SAFETY

Agencies, communities and contractors actively contribute to supporting a culture and processes for project safety

Accidents due to construction are vastly under-reported but in industrial countries account for around 1 in 5 workplace deaths. Reducing the frequency of these deaths is achievable but requires a culture of project safety that starts with a contractual commitment to meet site safety standards in the standard contract template and is reinforced through ongoing project processes.

At the site kick-off meeting, potential site hazards such as, open excavations, standing water and falls from height are highlighted to the community, contractor and supervising staff.

Once construction is underway, project plan or Standard Operating Procedure sets out a regular process of Health and Safety inspections to ensure that site safety is maintained on a regular basis. This includes a checklist of common hazards and documents mitigating actions that must be agreed with the site team. Inspections should also periodically visit the supply chain to ensure that children are not engaged in work at any stage in the construction process.

Where possible agencies should seek to ensure accident insurance is provided to labourers by the contractor or by the agency themselves in the case of direct implementation.

[ILO - Safety and Health in Construction \(Normative Instrument\)](#)

[ILO - How to Prevent Accidents on Small Construction Sites](#)

[South Africa Department of Labour - Construction Health and Safety Guide](#)

E2

QUALITY ASSURANCE

Regular, documented site supervision and monitoring is carried out by an Engineer or Construction Supervisor actively working to ensure quality in line with the contract

Regular site progress monitoring is the only viable way of ensuring quality and safety on site. Robust quality assurance includes a record that the following key stages in the construction progress have been inspected and signed off before proceeding to the next stage. The sign-off is linked to payments and includes an inspection of the structure against the design, materials and workmanship defined in the drawings, BoQ and specifications.

Monitoring inspections record daily progress, advice and instructions given to contractors and inspections of key elements of the work. Inspections carefully record site progress with both written and photographic evidence. All inspections and site visits are signed-off by the contractor and recorded in the site book. Key elements for inspection are set out below:

- | | | |
|----------------------------|--|--------------------------|
| • Site inspection record | • Reinforced Concrete / Steel Frame Roof & Coverings | • Painting and Finishing |
| • Foundations & Slab works | • Architectural, Plumbing & Electrical | • Site Clearing |
| • Wall Superstructure | • Screeding and Plastering | |

Supervisors are fully briefed as to technical acceptance criteria for the key elements that require sign-off. Where these are not met work is either rejected or demonstrated to be structurally adequate by a qualified engineer.

Where the context limits the ability for site presence, this may be mitigated by close involvement and training of community bodies to report on elements of construction progress when supervision is not present.

GUIDANCE AND APPROACHES

E

CONSTRUCTION PHASE

CONTRACTUAL COMMUNICATIONS

E3

All formal contractual communications are recorded and signed-off as appropriate to ensure that processes are properly managed and documented

When contracts come into dispute, the strength of formal communications in reference to the contract are the main determinant of whether a fair resolution can be quickly reached.

Communications that relate to clauses in the contract are formally issued with sign-off by the relevant individual in line with the contract terms and scheme of delegation where substantial financial changes are involved.

Typical communications include but are not limited to those listed below and will often use templates that reference the key contractual clauses:

- | | | | |
|-----------------------|---------------------|------------------------|---------------------|
| • Variation Orders | • Stop Works Orders | • Payment | • Contractor Claims |
| • Compensation Events | • Delays | • Handover Certificate | |

QUALITY ASSURANCE

E4

Regular, documented site supervision and monitoring is carried out by an Engineer or Construction Supervisor actively working to ensure quality in line with the contract

Regular, planned meetings with stakeholders are an essential component of ensuring that communication is smooth and minimises conflict with stakeholders whilst capitalising on their buy-in.

Key meetings are set out below:

- | | | |
|--------------------------------------|-------------------------|-------------------------------------|
| • Kick-off Meeting and Site Handover | • Site Progress Meeting | • Handover Meeting |
| • Regular Risk Review | • Community Meeting | • Project Close and Lessons Learned |
| • Community supervision training | • Practical Completion | |

The kick off meeting is attended by all stakeholders, including end users, community leaders, government officials and contractors are invited in order to introduce the project and its objective. This establishes the sequence of future meetings to monitor progress and resolve issues.

GUIDANCE AND APPROACHES

F

HAND OVER AND MAINTENANCE

MAINTENANCE PLANNING

F1 A maintenance plan is developed together with the community or building operator/owner detailing the planned work required to maintain the building

Embedding a practice of maintenance after the construction is complete can substantially extend the life of a building. Maintenance plans are prepared together with the community during the construction process and is concluded during the handover in order to support a more sustainable outcome for the community.

Details of the maintenance commitments are included in an MoU with the community and/or government authority responsible for the facility. Community involvement from the outset of the project works towards ownership that will encourage the implementation of the maintenance plan.

The Maintenance Plan includes the following information:

- Responsibility for maintenance
- Description and frequency of routine maintenance activities
- Plan for reactive maintenance
- Estimates on likely costs

Maintenance activities range from significant repairs that require funding to routine preventative maintenance that can be done at almost zero cost. The maintenance plan aims to prioritise low cost preventative work to minimise deterioration and reduce the need for costly repairs.

DEFECTS MONITORING

F2 Quality is ensured after the completion of the buildings with a systematic process of defects monitoring and rectification in line with contract terms

Construction is not complete once the building is handed over to the user. A defects correction period is included in the contract. Where possible this typically lasts for 12 months after completion so that a full annual cycle of seasons has been weathered by the building. Typically 5% of the contract value withheld until completion but this may vary depending on the local market.

Key building operators and owners are interviewed about any observed defects and a thorough inspection is carried out by a qualified professional. Contractors are then liable to rectify defects that have become apparent and the final payment is withheld until this is complete. Grant periods may need to be planned to incorporate this final payment.



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