



Contract confidence

The Concrete Repair Association's Mike Ballesta explains the importance of clear and unambiguous tender documents, matched with an accurate Bill of Quantities, if clients want their concrete repair projects carried out within budget, on time and to the correct standard.

With the increased emphasis on sustainability and reducing carbon footprints, clients, consultants, architects and building surveyors are increasingly looking at refurbishing and upgrading buildings and structures, rather than demolishing and rebuilding. These refurbishment and upgrade projects can be quite complex and require a degree of flexibility in their management, to accommodate what will be found when the building or structure is 'opened up'. This flexibility requires a competent and experienced team, coupled with a robust contract document.

The tender process

The whole process for the contractor begins with the tender document, which will then eventually become the contract document. In this respect, tender documents can make or break a project and it is becoming increasingly common for specialist contractors to receive tender documents that may not provide a sound contractual basis to oversee the complex and ever-changing scope of repair and rehabilitation works.

On receipt of a tender, a contractor's estimators and senior managers must carry

out an assessment of the project and all it entails, and arrive at a 'decision to bid'. In order to procure competitive tenders successfully, the documentation needs to be as clear and unambiguous as possible. While tender 'Q&A' is inevitable, estimators' time is in high demand and they are generally not in a position to re-engineer the tender on behalf of a client who has not considered the project fully.

Contractors need to make sure that estimating resources are used to their maximum capacity, pricing projects/documents that have a good chance of going ahead and are at the same time thorough and well thought out. A considered and reasoned document indicates that the person who compiled it has spent a fair amount of time thinking about what works are required, how they are going to be carried out and what constraints the contractor will have to work under.

This type of tender document helps give contractors confidence in the project and the project team, as well as encouraging them to tender. This selective process, determined by a 'Decision to Bid' procedure, starts to set a high level of expectation for tender documents.

Above left: Each repair area must be clearly defined, along with the repair method to be used and the area to be treated.



Costs must be quantified for all aspects of repair including surveying and testing.

Time-related elements such as provision of access, site facilities, weather protection, propping and hoisting must also be itemised.

So why do we end up with poor tender documents and what are the problems that manifest themselves when the tender/contract document is not up to standard?

Common problems

Poor tender documents could be down to three factors: either the person/company compiling the document is inexperienced in this specialist sector; has insufficient knowledge or time; or the client is not willing to pay sufficient consultancy fees to enable a comprehensive tender process. The usual problems once the project is underway are cost and programme over-runs, but behind this there is nearly always a breakdown in the relationship between the contractor and the client or contract administrator.

Contractors are not consultants and a tender exercise is firstly a project procurement device and not a set of job instructions. Where clients, or their representatives, are dealing with unknown quantities of work or undefined items, it is better to provide the contractors with a level playing field by stating provisional quantities or provisional sums.

Leaving multiple works described as 'Item' will render the tender open to interpretation by contractors. This often leads to disputes when works are under way and possibly clients paying additional cost to cover contractors' risk.

Available advice

The Concrete Repair Association (CRA), one of three associations that comprise the Structural Concrete Alliance, offers free guidance to assist with the origination of clearer tender documents for repair and refurbishment projects in its *Standard Method*

of Measurement for Concrete Repair⁽¹⁾, along with a specimen *Bill of Quantities* in Excel spreadsheet format.

The document provides a uniform basis for measuring concrete repair and for fully itemising all aspects of the work involved. It provides notes on repair measurement, explaining that the repair area must be defined and outlined with regard to the method to be used and the area to be treated, and provides detailed instructions for quantifying all aspects of a repair project.

The framework includes advice on items to consider when putting together a request for a quotation. It recommends that Bills of Quantities should fully describe and accurately represent the quantity and quality of the works to be carried out, with work that cannot be accurately measured given as a provisional sum, or detailed in a bill of approximate quantities.

Detailed advice is included on how the costs can be quantified for all aspects of concrete repair including: survey; surface cleaning; repairs; crack repairs; pore/blow hole fillers; levelling mortars/fairing coats; surface coatings and treatments; and resin injection.

Time-related elements – such as provision of access, site facilities, weather protection, propping and hoisting – are also itemised. These can then be adjusted as necessary if the quantity of work differs substantially from that originally estimated.

Items related to testing – such as equipment and time required for carrying out trial sample panels and repairs, including taking test cubes and pull-off tests – should be included. Similarly, sizes should be stated for any cores to be taken and the frequency

FIGURE 1: Illustrations of Repair Measurement

Defect Type	Description	Diagram
1	Vertical Surface, no aris	<p>Fig 1. Area = Length x Width Depth of repair = maximum depth of the repair within a substantial proportion of the repair area.</p>
2	Soffit Surface	As Fig. 1
3	Deck Surface	As Fig. 1
4	Two Vertical surfaces, one aris (e.g. column)	<p>Fig 2. Length is longest length measurement Width measurements should be taken on a left to right basis. Where the area of damage includes a soffit this is recorded as width 1. Girth = Width 1 + Width 2. Depth of repair = maximum depth of the repair within a substantial proportion of the repair area.</p>
5	Two Horizontal surfaces one aris including a soffit (e.g. beam or slab edge)	As Fig. 2

Concrete Repair Association 3rd Edition Oct 2015

The *Standard Method of Measurement* offers guidance on repair classifications and measurement.

REPAIR AND STRENGTHENING

Item	Description	Quantity	Unit	Rate		Amount	
				£	£	£	£
REPAIRS TO REINFORCED CONCRETE							
							
LOCATION Z1							
WALL OR COLUMN FACES							
Depth not exceeding 25mm							
A	area not exceeding 0.01m ²		Nu				
B	area exceeding 0.01m ² but not 0.05m ²		Nu				
C	area exceeding 0.05m ² but not 0.10m ²		Nu				
D	area exceeding 0.10m ² but not 0.25m ²		Nu				
E	area exceeding 0.25m ² but not 0.50m ²		Nu				
F	area exceeding 0.50m ² but not 1.00m ²		Nu				
G	area exceeding 1.00m ²		m ²				
Depth exceeding 25mm but not 50mm							
H	area not exceeding 0.01m ²		Nu				
J	area exceeding 0.01m ² but not 0.05m ²		Nu				
K	area exceeding 0.05m ² but not 0.10m ²		Nu				
L	area exceeding 0.10m ² but not 0.25m ²		Nu				
M	area exceeding 0.25m ² but not 0.50m ²		Nu				
N	area exceeding 0.50m ² but not 1.00m ²		Nu				
P	area exceeding 1.00m ²		m ²				
etc.							
Carried to collection							
Concrete Repair Association 1st Edition Oct 2015							

Bills of Quantities should fully describe and accurately represent the quantity and size of the repairs.

of testing detailed, as well as time allowed for presenting the results and making good the tested area.

Trying to save money at the tender stage is a false economy. The cost of preparing a set of tender documents is usually only a small percentage of the overall project costs and the difference in cost between producing a 'good' tender document and a poor one is not that significant.

If clients want their projects carried out within budget, on time and to the correct standard, then they need to think carefully about what they are trying to achieve and appoint a competent and experienced firm to undertake the preparation of the document. While this might cost slightly more upfront, it will pay dividends in the long run.

The *Standard Method of Measurement for Concrete Repair* and *Bill of Quantities* are available for free download from the CRA website: www.cra.org.uk. ■

References:

1. CONCRETE REPAIR ASSOCIATION, *Standard Method of Measurement for Concrete Repair*. CRA, Bordon, 2015.
2. BRITISH STANDARDS INSTITUTION, BS EN 1504. *Products and systems for the protection and repair of concrete structures. Parts 1–10*. BSI, London, various dates.

A tender/contract document for a repair and rehabilitation project should comprise:

- an unamended standard contract stating terms and conditions under which the works are to be carried out
- reasonable payment terms
- any elements of contractors' design should be clearly stated and accompanied by the employer's requirements
- a tender, based on factual information derived from a condition survey and investigation report that informs the correct course of action required
- a full specification (bespoke, usually incorporating BS EN 1504⁽²⁾)
- a quantified schedule of works (Bill of Quantities) with descriptions that correlate with the specification
- the constraints under which the works would be undertaken
- preconstruction information (as defined by CDM).



CONCRETE REPAIRS LIMITED

multi-disciplined **structural** renovation