

# Technical queries

Further selection of questions to and answers from the Members' Advisory Panel.

*Members sending queries to the Panel are requested to ensure that all relevant information is supplied – including, when appropriate, precise details of the contract, supplementary conditions, preliminary clauses, specifications, preambles and method of measurement. Ten photocopies should be supplied of any document (or extract) attached to the query.*

*The Panel's opinions are given 'without prejudice' and on the understanding that the Institute shall not be held responsible for any consequence or liability which may arise as the result of any action taken in reliance upon such opinion.*

*The Editor would be glad to hear from any reader who may be able to expand on the reply given to a particular query.*

## Question 11/31

### Measurement of Foundation Trenches

In certain situations we have been instructed by the architect to excavate foundation trenches for mass concrete strip foundations to the widths shown on the sub-structure drawings and to depths to be determined with the Building Inspector where the sub-soil bearing capacity is inadequate at normal depths. The top of the mass concrete foundations is to be at a depth below ground level of 675mm/900mm, giving a minimum of three courses of blockwork and a maximum of four courses of blockwork.

The trenches then have, of necessity, been left open until examination had been carried out by the Building Inspector to establish the bearing strata at that level and, depending upon his findings, it has sometimes been necessary to excavate deeper upon instruction, in order to reach a suitable soil bearing capacity.

Which clauses within the terms of the Standard Method of Measurement apply, with specific reference to trench widths and depths over 1.00m deep and the concrete therein?

### Answer:

The work described should be measured separately. The first excavation to depths shown on the drawings should be measured normally, D10 (a) minimum widths applying to excavation and concrete where trenches exceed 1 metre deep. The subsequent excavation to greater depths following the building inspector's examination should have the starting level included in the description and the minimum widths laid down in D10 (a) should be decided by reference to the total depth of the trench.

## Question 10/41

### Building-in ends of proprietary lintels

I would be grateful for your opinion as to whether the building-in of the ends of "Dorman Long" or "Catnic" type lintels should be measured under clause G56(b) as building-in ends of steel sections as clause A4(b).

### Answer

It is the view of the panel that "Dorman Long", "Catnic" and similar proprietary lintels should be treated as lintels and not steel sections for the purpose of measuring building-in ends, i.e. it is deemed to be included with the brickwork.

Steel sections as referred to in G56(b) are taken to relate to British Standard sections for structural steel.

## Question 11/1

### Working Space: Pre-cast concrete manholes

I would like the Panel's opinion on a dispute arising from the interpretation of Clause D6(g)i of SMM (Metric Edition) regarding the measurement of working space to pre-cast concrete circular manhole rings.

The contract in question is utilising 1050mm diameter rings at manhole depths varying from 1 metre to 5 metres. The B/Q measures excavation to pits in stages 1.50 deep planking and strutting curved on plan in 1.5 metre stages, earth filling around foundations, concrete filling around manholes (measured in cubic metres) and formwork to sides of surround to a curve 675 mm radius (measured in square metres).

On enquiry, it has been established that the pits have been measured to the net size of the manhole ring (plus 150 mm all round on manholes having concrete surround) and the formwork to sides of surrounds 675 mm radius only measured to the face of concrete exposed in the drain trench on either side of the manhole.

Nowhere in the Bills or preambles is it stated that excavations are measured net or that rates should include for any additional excavation, planking and strutting formwork etc for working space, nor is a working space allowance measured separately.

It is our contention that on remeasurement, working space should be measured to these manholes in accordance with D6(g)i and formwork to surrounds thus measured to the whole of the concrete face.

### Answer:

The panel was unable to agree on this query, some feeling that the bills were correctly measured and it was up to the contractor to allow in his rates for additional excavation etc, others being of the opinion that working space and formwork were measurable.

It was considered that the quantity surveyor should have given a fuller description of the items involved pursuant to the "Introduction" to the SMM and this would have enabled the contractor to be sure what he was pricing. For example, if it had been stated that the concrete was to be poured against the excavation and working space would not be measured, he would have been given the opportunity to allow in his pricing for any additional work he deemed necessary.

As it was he could only assume that the mandatory requirements of the SMM had been followed. The resolution of this query therefore rests on the necessity to work outside the manhole rings in placing concrete and/or fixing formwork.

The instructions of the architect would be relevant here—did he approve of concrete surround being poured against an earth face or did he require formwork to be used. If the latter, then working space would be measurable (where the formwork was over 1 m deep below starting level of excavation). If the former, then it *could* be done but would not be a very practical proposition for any but the most shallow manholes.

In the absence of any instructions, the contractor will have to try to persuade the QS of the necessity to work from the outside of the rings.

#### Question 11/26

##### Measurement: Foundations

Due to poor ground conditions, a variation was necessary and reinforced concrete stanchion bases and connecting reinforced concrete ground beams were constructed in lieu of work measured in the Bills of Quantities, which were priced by the Contractor.

Excavations were executed to minimum widths to accommodate the concrete foundation and blockwork both sides used as formwork.

After the work commenced, the Architect issued the following Instruction:—"We confirm our acceptance to your suggestion to use 75 mm thick blockwork backfilled with sand between blockwork and excavation as permanent formwork to ground beams and pile caps".

The ground was solid clay to a depth of approximately 1½ metres and the whole area was covered with a concrete hardstanding.

The Contractor had a copy of the soil report.

No planking and strutting was used above the blockwork.

No working space was excavated nor was any necessary with the exception of the blockwork.

The Contractor is claiming under the SMM for working space 0.60 metres wide both sides even though there are the odd lengths of excavations less than one metre deep.

As a result of this claim, the Contractor requires payment for the full width (including working space) for the following items:—

1. Breaking out concrete hardstanding.
2. Consolidating and concrete blinding.
3. Hardcore filling to ground level (to comply with the Specification).
4. Cart away excavated material.

In addition, the Contractor claims payment for:—

5. Planking and strutting for full depth of excavations.
6. Formwork to vertical sides of concrete ground beams and stanchion bases.

In my opinion, the foundations could have been poured without using formwork or blockwork and minimal extra concrete would have been required.

I maintain that I should re-measure the works as follows:—

1. Excavating net width of concrete foundation plus blockwork both sides.
2. Planking and strutting sides of excavation above blockwork.
3. Block wall as formwork and planking and strutting with sand filling consolidated behind.  
..... and thus continuing with normal measurement procedures.

It should be noted that all concrete ground beams were 300 mm wide and 600 mm deep and concrete stanchion bases 1200 × 1400 × 1150 mm deep.

#### Answer:

Under the JCT form of contract, the SMM is obligatory unless specific departures are noted. For the work described in the query, the SMM lays down that the following shall be measured:

- (a) Minimum widths of excavation as described in D10 and D11.
- (b) Planking and strutting to all surfaces – this is a risk item and must be measured whether used or not.
- (c) Blockwork used as formwork as G33 (a) (vii). A majority of the panel consider that the blockwork is formwork within the meaning of D6 (g) and therefore—
- (d) Working space as D6 (g). (Again whether actually executed or not is irrelevant).
- (e) Backfilling and consolidating sand between blockwork and face of excavation.

The way in which the query has been put does not make it clear exactly what the work involved is and the enquirer himself does not seem sure as he proposes to measure 1. net excavation plus blockwork, and 3. sand filling consolidated behind blockwork. He is in error when he says "working space was not excavated, therefore should not be measured". The rules for measuring working space are set out in D6 (g) and do not depend on what is actually done.

#### Question 11/16

##### Measurement: Reinforcement: Chairs

I have a difference of opinion on the measurement of reinforcing chairs in a reinforced concrete frame building and I would appreciate the Institute's guidance. The reinforcement measured in the B of Q does not include reinforcement chairs which were needed in the concrete bed. Accordingly I requested same under Clause F17g of the S.M.M. but the quantity surveyor has dismissed this by saying spacers should have been included in our rates.

### Answer

This query rests on the nature of the "chairs"—whether they are "ordinary" spacers as F17(b) or "special" spacers as F17(g). If the former, they should be included in the description of reinforcement—if this has not been done, the contractor should be paid for them. If the latter, they are separately measurable. The SJC issued a clarification note of this item which may be helpful in deciding which clause is applicable:—

"Ordinary spacers include any spacers inserted at the contractor's choice. Ordinary spacers should be given in the description of bar reinforcement and no allowance in calculating the weight of reinforcement should be made for ordinary spacers.

Special spacers and the like also include any designed spacers not at the contractor's choice. Special spacers and the like are given in kilogrammes stating the size."

The above opinion is given on the basis of the SMM being applicable. It may be that the PSA specification includes a clause indicating a departure from the SMM in this instance and the document should be examined to check this.

### Question 11/17

#### JCT Contract: Date for completion: Error in Agreement

Could you please comment on the following contractual problem and inform us if there is case law in clarification. An enquiry for tender is received stating a Contract Period of 18 months. It is obvious that the project can be completed well within this period and the contractor qualifies his tender based on a period of 14 months. The Housing Corporation authorised the Client to accept the

tender based on 14 months and the Architect wrote to the Builder accepting the tender on this basis stating dates for possession and completion, again on a 14 month period. The Contract Documents were prepared and signed, in error, on the original 18 month period. Delays occurred on the project due to late receipt of Architect's Instructions, and major variations in substructures due to bad ground conditions. The Architect refused to allow claims for extension of time, stating that there was a 4-month gap between the builder's programme and the contract completion date, and that although the original intent, by all parties, was to complete in 14 months, all parties to the Contract had signed, albeit in error, on the 18 month period.

### Answer

Although the contract has been signed for an 18-month period and this would normally be legally binding, it is thought that it may be possible to have the contract amended by illustrating that the intention of *both* parties was for a 14-month period. It is recommended that counsel's opinion is obtained on this possibility.

However, even if it is not possible to alter the contract, the contractor should be able to claim for loss and expense caused by disruption to the progress of the works as a result of the late receipt of architect's instructions and major variations. These should be claimed under clauses 11(6) and 24 and it is not a condition precedent that an extension of time shall have been granted. The contractor should, however, have given the appropriate notices of disruption etc. as required under the clauses and be prepared to set out in detail his points of claim.

Reference to correction of errors is made in Hudson (10th Edition, page 32) citing the cases of:—

- (1) Shipley UDC v Bradford Corpn (1936)
- (2) Crane v Hegeman-Harris Inc (1939)
- (3) Carlton Contractors v Bexley Corpn (1960)
- (4) Earl v Hector Whaling (1961)
- (5) Jocelyne v Nissen (1970).

# Institute diary

## THE INSTITUTE

**3rd November** – Annual Dinner and Dance, Grosvenor House, London W1 at 6 for 6.45 p.m.

## BERKS, BUCKS AND OXON BRANCH

**18th October** – Lecture on the Engineer's Powers and Responsibility relating to Measurement and Finance under the ICE Form of Contract 5th Edition. Mr. Max W. Abrahamson, BA, LLB, a solicitor, has kindly agreed to lecture on the above at Reading University, Whiteknights, Reading, Berks. Mr. Abrahamson is a well known author on engineering law and arbitration and the Committee looks to members for the resounding support such an occasion merits. Details will be circulated to all Branch Members in due course.

## EAST MIDLANDS BRANCH

**19th September** – "Insolvency in the Building Industry" by Brian Green, FRICS, FIQS, FI Arb. The Talbot Hotel, Oundle at 7.30 p.m.

## LONDON BRANCH

### NORTH HERTS AND SOUTH BEDS DISTRICT

**5th October** – "Suffering the Undertaker" a talk by J. R. Humber. St. Michaels Manor Hotel, Fishpool Street, St. Albans at 8 p.m.

## SUSSEX BRANCH

**20th September** – Talk by W. A. Kingston, FRICS of the National Trust on "Conservation and Restoration". Langfords Hotel, 12 Third Avenue, Hove at 7.30 p.m.

**11th October** – Talk by Meteorological Office, Langfords Hotel, 12 Third Avenue, Hove at 7.30 p.m.

## WEST OF ENGLAND BRANCH

**21st September** – "Negligence and Indemnity in the Construction Industry" by S. K. MacMillan, MA, FI Arb, Barrister-at-law. The Royal Hotel, College Green, Bristol at 7.00 p.m.