

quickly for anyway? I like the idea of more direct control being in the hands of the Main Contractor; I'm not a supporter of the Nominated Sub-Contractor buildings anyway! – (that's for another day!).

I cannot see any span restrictions, neither can I see necessary expensive window and door details. If anything, these elements in a load-bearing brick wall situation are more controllable.

I would, however, sound one warning bell. I feel that designers should be aware of the roof design. It could be very tempting to experiment with the roof structure, and still expect to be competitive with the traditional frame solution. This, I feel, is not so. One thing the traditional frame does is to encourage the use of the most economic roof design and material. I feel that this should be remembered when using the diaphragm wall construction.

Just a few other considerations that come to mind.

I think Institutions, Government and funding bodies generally would be happier with a brick-built industrial building. I believe repairs and maintenance could be reduced with a brick-built industrial building. I think vandalism can be reduced with a brick-built industrial building. Presumably the insurance world would be happier, and, consequently, insurance premiums may be reduced.

Conclusions

So, there is the cost evidence. Surprise, surprise, I would suggest that the differential is not very great. Yes, it would seem that the diaphragm wall construction is marginally more expensive. That is not to state that all Contractors would say that is the case, neither is it safe to say that it will always be more expensive. The more the Contractors try it as an alternative to the framed building solution, the more competitive it will become. The industry only needs a shortage of steel, as in 1973, and then we may see some very real advantages in the diaphragm wall design!

It is therefore my opinion that all those cost exercises do prove that this design is worthy of consideration. The Quantity Surveyor is often accused of being too unimaginative in his opinions. I think that this method is not only a fairly fresh approach but also provides the Quantity Surveyor with a better chance of providing flair, together with the opportunity of tight control on the elements of cost.

Note: further information on brick diaphragm walls may be obtained from The Brick Development Association, Woodside House, Winkfield, Windsor, Berks. SL4 2DX. Readers are particularly referred to the BDA publication "Brick Diaphragm Walls in Tall Single-Storey Buildings", by W. G. Curtin and G. Shaw (price £1.50).

Technical Queries

The following is a selection of questions submitted to the Members' Advisory Panel, together with the replies which were forwarded to the enquirers. We would be interested to receive the comments of readers who may be able to amplify any of the replies or who may have different views to offer in respect of them.

Members sending queries to the Panel are particularly requested to ensure that all relevant information is included, especially in regard to the precise edition of which form of contract, the method of measurement, specification clauses and bill preambles. When forwarding photostatic reproductions of documents it would be appreciated if ten copies could be sent for distribution to Panel members, as it is not always possible to make satisfactory photostat copies of photostats.

Question

Blue Form of Sub-Contract – responsibility for protection of works

I would ask if you could possibly clarify a difference of opinion which has recently occurred on a contract, with which I am dealing, regarding Clause 5(2)(b) of the blue form of Sub-Contract (Non-Nominated), a copy of which I enclose.

The root cause of the difference would appear to be the ambiguity of this clause and, as is often the case, the Contractor is interpreting the clause one way and the subcontractor, the other. The contractor interprets the clause concerning the materials or goods being fully, finally and properly incorporated into the Works as being when the work has been finally snagged, inspected and accepted by himself, however the subcontractor's interpretation is that it is deemed to be when the work is actually executed, i.e. in a work stage. You can no doubt imagine the problems. When an item, for example, such

as a kitchen unit is either stolen or damaged after being fixed, each is claiming the responsibility for replacement lies with the other. Coupled with this is the fact that the subcontractor has struck out the protection items in his Bill of Quantities, and when a polished door, for instance, is to be protected against damage from later finishing trades, his argument is that the contractor is responsible for protecting the door and the contractor's argument vice versa.

Answer

The point at which materials and goods are "fully, finally and properly incorporated into the works" is a difficult one to interpret in practice but the Panel feels that it is when the goods are incorporated, properly executed, and no further work needs to be done on them by the sub-contractor. Some members of the Panel go further and consider that it must also be included in an interim valuation.

Responsibility for the safety of the materials and goods prior to incorporation as defined above, is that of the sub-contractor unless caused by the negligence or default of the main contractor or his agents or the employer. [5(2)(a)]

Responsibility from incorporation until practical completion is that of the main contractor unless caused by the negligence or default of the sub-contractor. [5(2)(b)]

Responsibility for the properly completed and handed over work following practical completion is that of the main contractor unless damage is caused by the sub-contractor. [5(2)(c)]

The non-pricing of the protection item in the tender bills is not thought to have any bearing. Responsibility would still rest as laid down in the sub-contract.

Question

Storage of materials 'off-site'

We are considering storing second fix materials in a central warehouse for distribution to various sites. We feel that this method of storage is covered by Clause 30(2A)(c) of the JCT Conditions of Contract and therefore it would be reasonable to expect the Architect to include the value of these materials in Interim Certificates.

We would be grateful to receive your considered opinion of our interpretation of paragraph (c) of this sub-clause.

Answer

It is considered that the storage of second fix materials in a central warehouse would come within the scope of clause 30 (2A). However, it must be emphasised that all the provisions of the clause must be observed, not just (c). The purpose of these fairly stringent rules is to safeguard the ownership of goods which have been paid for, in the event of the insolvency of the supplier or the contractor.

It should also be noted that the inclusion of monies for materials off-site is at the discretion of the architect. He must ensure that the requirements of the clause are being satisfied, and continue to be satisfied. This means extra work which he may not be willing to incur and it is difficult to see what the contractor can do if the architect refuses his request.

Question

Liquidated Damages in Determined Contract

Under the current edition of the JCT Form of Contract (With Quantities) Local Authorities Edition, to what period in time can the Employer claim liquidated and ascertained damages from the Contractor if the Employer has determined under clause 25(i)(b); i.e. a) up to the time of determination, b) up to the time a second contractor commences work to finish the contract, c) up to the time a second contractor completes the contract?

This presupposes that the original contractor has no extension of time and had exceeded his contract completion date quite considerably when the Employer determined.

Answer

Liquidated and ascertained damages can only be applied to the original contractor from the date for completion (or any extended date granted by the architect) to the date of determination under 25(1)(b). After determination the contract is no longer in existence and so 22 cannot apply.

However, the provisions of clause 25(4) (LA Form) under which the contractor is liable for the employer's loss and expense caused by determination, do apply. These would cover the delay in completion and the additional costs of employing another contractor to complete the works. The sum fixed as liquidated and ascertained damages may not be appropriate and the sum claimed should fairly reflect the actual loss and expense suffered by the employer.

It is recommended that legal advice is sought in these circumstances.

Question

Measurement of sterilisation of pipework

I would be most grateful for advice relating to the measurement in a Bill of Quantities, of sterilisation of pipework. Could you please advise me as to whether this item should be specified in the Preliminaries and itemised along with 'Testing' in the measured work or whether it should be given as a provisional sum in the Preliminaries.

The particular problem I have come across is that a direct sub-contractor has omitted to include a price for sterilisation in his tender which was subsequently accepted. He now claims that this item is an extra to his account since no provision in the Bill was made for pricing. Our reply to him was that although no provision was made for pricing in the Bill, it is clear from the Preliminaries that sterilisation was required and thus the sub-contractor should have included this item in his pricing of linear metres of pipework.

An interesting situation however could arise here, since if sterilisation was included in the build up rates for pipework and a variation order was later issued omitting sterilisation, how would the saving be calculated?

Answer

It is the opinion of the Panel that an item for sterilisation of pipework should be provided in the Bills of Quantities and not be deemed to have been included in the preliminaries unless a specific item has been taken there. In the present case it seems that, though mention has been made of sterilisation, no opportunity has been provided to price for it.

A provisional sum may be entered for this work and in this case it is felt that a better place for the item is along with 'Testing' at the end of the appropriate work section.

Alternatively, and preferably, if a full specification of the sterilisation required is available, this would be included in the preamble to the work section and the cost would then be covered in the measured rate for the pipe.

As to valuing a possible omission of the sterilisation if it is included in the measured rate, this is an exercise in analysis of prices which is part of the regular life of a QS and one of the things for which he has been trained.