

reasonable by the architect and the work carried out.

"If the job actually costs £12,500 (an excess of 25 per cent. over estimate) the fee will be reduced by 25 per cent., or will amount to only £750—a penalty of £250 on the builder for inaccuracy—making the actual total cost £13,250. Inversely, if the finished job cost only £9,000 (a saving of 10 per cent.) the contractor's fee is increased by 10 per cent. and he would therefore receive £1,000, making the actual total cost £10,100.

"This method also affords a means of securing competitive estimates by several builders. In this case the 'tender' is an estimate of actual cost and statement of the amount of the additional fee for which the tenderer is prepared to carry out the work under definite contract conditions. This feature of competition has not, however, the merit which at first sight appears.

"In this form of contract the personal equation of the ability and character of the builder is of much more importance than in a straight-out contract.

"An architect may know from experience that the builder—the aggregate of whose estimate and fee is the lowest—has not the ability or organisation to enable him to carry out the work without such an increase on his estimate as would ultimately bring the price higher than an initially higher estimate.

"Care requires to be taken in letting such a contract to a construction company doing a large volume of work to ascertain that the actual man to be in charge of the work is competent, as he is an employee only, with practically no monetary interest in the resultant cost.

"Indeed, a great advantage of this form of contract is that men of capital are not necessary as contractors. The terms of payment can be so arranged that all financing over and above the amount of the fee is done by the owner—in which case the field of selection is very much widened.

"The advantage of several separate estimates obtained would appear to be great, but in reality is not so, for the following reasons:—(1) Because of the danger of collusion to estimate high; (2) the tenders may all, without collusion, be so high that the chance of being exceeded hardly exists—in which case the contractor has a double source of profit; (3) in the end comparison with the architect's estimate is the determining factor, not comparison of tenders. It is instructive to examine the result of a wilfully high estimate undetected by the architect. For this purpose we will assume a contract let on an estimate of £12,000 with a fee of £1,200—total estimated cost £13,200—and the actual cost to be only £9,600, a saving, chiefly fictitious, of 20 per cent.

"The contractor will, therefore, receive the fee of £1,200 plus 20 per cent., or a total of £1,440, thus bringing the actual total cost out at £9,600 plus £1,440=£11,040, which is £2,160 less than the anticipated cost of £13,200 for which finances were

arranged—a position exactly the reverse of that created by dishonesty in any other form of building contract.

"In addition to the basic terms of contract (the amount of estimate and the fee) other conditions are necessary to protect the owner's interests and obviate any causes of friction between the parties. Such conditions should provide:—

- (1) That the work must be performed in accordance with the plans and specifications and under the supervision of and to the satisfaction of the architect, who shall have power to vary the contract in this respect.
- (2) That the fee payable to the contractor shall cover the wages of any superintendent where the contractor does not superintend personally.
- (3) That the contractor shall make good at his own expense any defects appearing within a stipulated period of maintenance.
- (4) That any temporary sheds and all tools and plant necessary (other than scaffolding and boxing) shall be provided by the contractor for the fee, but that he shall be allowed an amount, fixed by the architect, to cover depreciation, which shall be charged against the cost of the work. (NOTE.—Any office required for a clerk of works or overseer must be mentioned in the specification.)
- (5) "Cost" of material must be defined and a definite statement made of what discounts, if any, are to be chargeable to the owner in cost.
- (6) The owner must have power to discharge the contractor at any time on payment of all cost to date, and a proportion of the fee in ratio to the value of completed work to the estimated total cost.
- (7) The ultimate control of the purchase of material must be in the hands of the owner. The contractor must agree to buy in the best available market all material required for the work, subject to the quality and price being approved by the architect.

The owner to have power to supply any material where he can purchase at a price below the best quotation obtainable by the contractor. (NOTE.—Any saving effected operates to increase the contractor's chance of earning a bonus.)

- (8) The contractor shall be responsible for the engagement of all labour and payment of wages, and shall employ none but the most competent tradesmen available.

He shall not pay less than award rates of wages, but shall require the consent of the architect to any increases.