time of economic recession the dangers arising from taking risks tend to reinforce a safety-first attitude towards design. The penalty for producing a new house design or estate layout that received an unfavourable response from the potential purchasers could be the financial ruin of a small firm and would cause embarrassment to a larger firm. Therefore the house-builders stick to tried and tested designs, tried and tested only in the sense that they have been built previously and sold at a satisfactory rate. The survey found no evidence that house-builders have any arrangements for feedback from the purchasers with regard to their opinion of the house on a long-term basis.

An undesirable situation may result if the predictions of the house-builders are correct in terms of smaller building plots. Already there is a wide divergence between the house-builder and the purchaser regarding estate design and the aspirations of the purchasers are fixed towards a more spacious layout. This represents a potential demand and the housing market should be able to meet the demands of those buyers who wish to tradeup to higher standards.

In general the house-buyer is confronted with an extremely limited choice of house designs and a still more restricted choice of estate layouts. A similar view was expressed by Jepson in the comment that "the choice of house by a buyer often represents a compromise, reflecting what is available rather than what is desired" (6). Whilst not insensitive to the market demands it does appear that since competition between housebuilders is necessarily limited in a particular district, they do in fact dictate the design solutions to the purchaser.

A logical suggestion would be to divide estates into areas with alternative layouts of varying densities, and prices that reflect this factor, in order to test whether there is an actual demand for improved estate designs. Whilst not questioning the sincerity of the authors of design guides, a test of what the buyers choose would allow the consumer to express his point of view. Otherwise the proliferation of design guides may result in the imposition of yet another system of controls on housing without reference to the wishes of the consumer.

In spite of the criticisms made by the buyers the general impression given was that they were reasonably satisfied on a value-for-money with the house they had purchased. Therefore the often maligned house-builders emerge from this most stringent test receiving considerable credit from the purchasers.

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Avoiding a Dispute

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It is unusual to find a completed building project which has not at some stage been subject to delay, dispute or claim. This is in itself a sad reflection on the building industry, but what is worse the customer finds that he often has to suffer a delay or meet additional costs for which he is not fully compensated.

Whatever the cause of these problems the reputation of all concerned in the industry suffers, and there seems little evidence of positive steps being taken towards improving the situation. Many building managers, surveyors and architects are striving to secure and improve the skills required to deal with existing disputes and claims. A better approach would be to examine the main causes of building delays and disputes, many of which are often repeated, and to take action wherever possible to prevent them rather than to seek a cure.

This is not easy because of the wide range of activities involved, but if a study is made of the primary precontract and post-contract processes in which both parties to the building contract are involved, some of the possible causes of difficulties become evident.

Pre-contract activities

The Contractor's pre-contract activity consists of preparing and submitting a tender. This is based on information supplied by the client or his professional team, usually in the form of bills of quantities, drawings and conditions of contract, and depends on the efficiency of the skills of the contractor in estimating his future costs.

The information supplied must be sufficiently comprehensive to enable an accurate assessment of the nature and extent of the works to be made. Any assessment made must convince the contractor of his ability to meet both cost and time restrictions while at the same time maintaining satisfactory quality. In such deliberations the contractor must take account of:

- 1. The cost of his own work.
- 2. His available resources.
- "Contractor's risks" including the weather, labour and material availability and ground conditions.
- 4. The cost of managing and supervising effectively subcontractors and suppliers.

Any inadequacy in the supplied information will compound the level of difficulty in making these necessary judgements and it is possible that the current approach to supplying the information may, in certain areas, be inadequate. Prime cost and provisional sums often comprise a high proportion of the total tender sum, and thus may represent an area where by their very definition the information supplied to the Contractor is incomplete, or indefinite. The contractor must prepare construction programmes to be assured that he can complete within the contract period, but this can be made very difficult where large volumes of prime or provisional sums occur which are not accompanied by sufficiently detailed descriptions of the nature or complexity of the specialist works on which they will be expended. One result of an incorrect estimate of the contract time taken by these specialist works may be that the contractor is involved at a later stage in the contract works being delayed, and thus also in liquidated and ascertained and other damages or costs which he may find difficult to recover through the normal processes of the contract.

To meet this, certain protection is provided in the Standard Form of Building Contract, as this document contains a right for the contractor to make reasonable objection to the nomination of a sub-contractor. The problem always remains as to what is reasonable.

Clearly the information supplied to the contractor can itself be the cause of dispute, as illustrated above, but even here steps can be taken to describe more fully work covered by prime cost sums or, better still, to measure such works wherever this is possible. There has been a tendency in recent years for the type of work covered by prime cost sums to be widened at the expense of measured work.

The measured work in the bill of quantities can mislead the contractor as to the extent of the works, or the extent of future variations, by on occasions purporting to be firm quantities, when it may have been produced from incomplete design drawings. This practice is to be deprecated and such quantities should be described as "approximate" or "provisional" where appropriate.

Even when given sufficiently accurate and tully descriptive information the pre-contract processes of the contractor can still meet circumstances where commercial pressure generates a claim for additional payment. In particular where the contractor's inefficiency in estimating his future on-site costs result in a loss making situation, he may feel that he must somehow take steps to attempt recovery.

Such a situation might be brought about by a lack of effective feedback from site, or inadequate communication between construction and estimating functions. Whatever the cause the level of profit margin in tenders will not allow for errors in estimated costs. The sort of dispute or claim resulting from this type of situation can be prevented by the contractor's management team improving its system of estimating, and by avoiding mischievous claims, whatever the cause. Such claims, often based on little more than hypothesis, are usually

destined to fail, but they do form a high proportion of the irritating disputes with which the industry is involved.

Post-Contract Activities

The parties to the contract have certain rights and obligations which are clearly set out in the contract documents or are implied by common law and statute. Although this is the case, many of the disputes or delays which arise after building work has commenced stem from the failure on the part of one party or another to comply with these duties or rights.

Often it is the contractor who fails to meet the required level of managerial skill required to efficiently undertake the project in hand. The causes of such management failure can be dissected into a number of principal areas.

(a) Conditions precedent to rights under the contract
The Standard Form of Building Contract sets down
a number of conditions with which the contractor

a number of conditions with which the contractor must comply to ensure his rights under the contract. Such conditions include the need for written instructions from the architect before variations are commenced, the need to give notice to the architect for claims for delay and extension of time, and the requirement to keep accurate records of dayworks carried out. The failure to comply in this way is one of the significant causes for unnecessary dispute, and results in litigation and ill feeling. Frequently the contractor fails to recover what would otherwise be his contractual right and as a result of this he attempts to recover his costs in a less creditable manner.

(b) Records of costs and expenditure

Again under contract the contractor is required to keep records of certain costs in the form of labour and plant time, and material costs. This requirement is either specifically required by the contract, or may be inferred from the document. Such records include daywork expenditure, costs related to claim situations, and details of varied work. The failure to keep accurate records of this type results in unnecessary argument as to the costs actually involved.

(c) Maintenance of effective cost control

There is a real need for the contractor to maintain a regular record of true cost, which can be compared with the recoverable value to enable his management team to assess the potential or actual loss. The method of monitoring recovery (i.e. profit and overheads) must be such that the information is provided in a timely manner, thereby management action can be effective before any loss situation escalates and becomes unrecoverable. The occurrence of a serious uncorrected loss situation can result in the contractor meeting real commercial pressure to make claims of doubtful value.

(d) Effective and flexible contract planning

A continuously updated construction programme will allow the contractor to overcome many of the short term disruptions to his original pre-set plan. In this way apparent causes of disruption and delay can be overcome, and the short-comings of subcontractors and delays caused by variations can be minimised in their effect. Additionally where the

contractor makes valid claim for extension of time, for whatever allowable cause, these claims will be reduced, and their true effect established by reference to the updated programme and without resorting to approximate or speculative assessment.

(e) Control of nominated and domestic sub-contractors Many building contractors manage the major subcontract content of building projects in a very casual manner. Sub-contract documents are in many instances not exchanged and where such a situation obtains it may prove very difficult to avoid delays or to recoup resultant costs. The exchange of correctly prepared documents showing clearly the rights and duties of the parties to the sub-contract is an essential pre-requisite to either the complete avoidance or the satisfactory resolution of claims and disputes, without the need to resort to expensive and timeconsuming litigation.

By effective management in these areas the contractor will avoid a dispute or avoid the need to enter into a delay or claim situation, but should he need to make such representation his documentation will be adequate and will minimise argument based on opinion or speculation.

Other persons involved in the building contract also have their rights or duties and have equal responsibility to comply with them. In particular the architect, in his accepted role, must ensure that his actions and decisions are such that their possible effect is not detrimental to the efficient completion of the project. The areas of his activities most likely to cause concern are:

(a) The issue of more detailed drawings and architect's instructions

The Standard Form of Building Contract ensures the contractor's right to receive details and instructions at an appropriate time with due regard to the contract completion date. Such information or instruction will have to be acted upon by the contractor's management team before it is put into effect on site, and it is prudent for the architect to ensure adequate time for planning and ordering to take place. Failure with regard to this requirement may result in disruption on site and possibly a claim for direct loss or expense.

(b) The issue of variations to the contract works

By the inclusion of a clause allowing variations, the contractor will expect variations to occur and will be prepared for them. He will not expect, however, so many variations that he is continuously involved in reprogramming the works. This practice, possibly caused by inadequate initial design before the bill of quantities is prepared, will result in considerable additional time involvement by the contractor's management team. The result may be a request for extension of time or for loss or expense for disruption, or both. The contractor will also expect to be properly recompensed for the effect of variations in accordance with the contract. This may mean an adjustment, in accordance with the contract, of tender rates, and in certain circumstances an allowance for direct loss and expense. The architect must be prepared to meet these requirements where they

are appropriate, rather than expect all variations to be carried out at bill rates. In this respect he will be well advised to consult the quantity surveyor before the variation is issued, and advise the client as appropriate. Having been so advised the client will not be taken by surprise if a claim results from the variation, and the architect will be better placed to treat any such claim impartially, thus avoiding unnecessary confrontation.

(c) Nomination of sub-contractors and suppliers

The responsibility of the architect under the Standard Form of Contract to nominate is clear, but he should take care to nominate as early as possible to ensure adequate time for the formalities of subcontract and reprogramming to occur. The choice of the sub-contractor or supplier should be made wisely to avoid problems caused by subcontractors with excessively long contract period requirements, or suppliers with long delivery delays. Both are likely to cause dispute or delay, either by objection to nomination or request for extension of time with costs.

(d) Use of consultants

Only the architect may issue instructions. It is imperative, where consultants have been involved with the design, that in the post-contract period their position is made quite clear both to them and the contractor. Any instructions or variations they wish to make must come through the architect. Failure to do this can result in the contractor carrying out work which is not authorised and of which the architect is unaware. The procedure involved here is somewhat cumbersome, but none the less necessary under the Building Contract to ensure the contractor's obligation to comply, and his rights to payment.

(e) Impartiality in control

In certain circumstances it is the architect's duty to act in a quasi-judicial capacity. When these circumstances arise he must be seen to be impartial. Where the contractor feels that the architect has not fairly considered his case he may wish to refer matters in those areas to arbitration or the courts. This is detrimental both to working relationships and to the satisfactory completion of the project. A contractor who has respect for the fair approach of the architect is more likely to accept the outcome on matters under consideration and proceed without further representation.

Both the architect and the quantity surveyor by their actions can therefore minimise the possibility of dispute or delay, while at the same time maintaining effective control.

Conclusion

Most disputes, delays or claims can be prevented by the employer, his agent – the architect, or the builder. By reducing the number of problems it is likely that the contract can be completed on time without unnecessary additional cost to the client, or unrecoverable cost to the contractor. This must benefit the industry as a whole, financially, satisfaction-wise and by reputation.