can call upon when carrying out routine quantity surveying tasks. Not only are bills of quantities from previous jobs usually readily available, but standard libraries of descriptions, trade catalogues, British Standard specifications and codes of practice, technical manuals and handbooks, etc. are all at hand in the majority of offices to ease the trainee's burden when faced with the daunting task of putting pen to taking-off paper. Moreover, students frequently prove to be surprisingly adaptable when introduced to the more sophisticated data processing and computing equipment increasingly used in present-day practices.

"I'M ALL IN FAVOUR FOR THOSE WHO WANT THEIR FUTURE BREAD WELL BUTTERED!"

Students seem to experience little difficulty when working on construction sites and quickly become adept at handling measuring rod and tape. They also appear to appreciate the opportunities afforded by site visits to study buildings under construction and to inspect and measure work at various stages of completion. Female students recognise too that site work is an essential part of their training, while building trade operatives apparently regard their presence as something in the nature of a non-pecuniary bonus!

Most of the "feedback" of information which comes my way indicates that the majority of students look upon their period of sandwich training as being essentially worthwhile. It is reassuring to know that this is the case. Nevertheless, if complacency is to be avoided, it is imperative that we strive at all times to maintain the right balance of academic education and practical training, so that the profession may continue to develop educationally along healthy and progressive lines.

[1] "so many men, so many opinions"

Design and Build —The QS Opportunity

The following article was compiled by the Committee of the East Midlands Branch from individual experience and notes taken at a Branch meeting on the subject.

Over the years there have been numerous attempts to find the alternative to what many consider to be the failure of the traditional building process and much has been publicised about the rise in popularity of the Design and Build or Package Deal system. This is not, of course, a new system but its use is certainly increasing as government departments and local authorities join private and commercial clients in looking for ways of cutting costs and speeding up the invariably lengthy design and tender periods of the traditional system. Added impetus has been given by pressure on the public bodies to reduce staff—refuse collectors are usually considered to be more essential than Architects in times of cut-back!—and the advent of SMM6 and JCT 80 have done nothing to simplify or shorten the pre-tender process.

So the package deal is in the ascendency and with it comes further opportunities and challenges to the Quantity Surveyor no matter what his sphere of operation.

The Background of Tradition

Before the evolution of the Quantity Surveyor, and indeed of most building "professions", the builder usually provided the package (although it was perhaps not appreciated as being a package). Historically, the builder was invariably also the architect, commissioned to erect a structure to fulfil a client's requirements. Even with independent architects the builder was still a dominant party, influencing construction and design decisions.

The gradual takeover of the design and tender process by the professions, and the consequential relegation of the builder to an uninvolved bystander, is often looked upon with regret, and not only by the builder. The complexities of modern building, and perhaps the failure of the historic system to cope with these complexities, led to the creation of the modern building professions. However, the science and infinite detail of modern pre-contract procedures can be almost self-perpetuating and has not necessarily been to the benefit of the industry nor indeed the client. The early involvement of the Contractor in building schemes nowadays is rare and in fact almost impossible in our now traditional tendering process, but it has been seen to be of great benefit when such early involvement has been possible. The revival of the package deal, a return to history almost, enables this early involvement to be revived. Of course, some areas of the building industry have not moved out of history and still work with the package. This applies particularly to agricultural buildings and to minor works of house extensions and alterations. Some would say this is due to the need for "practical" solutions to building requirements although a cynic would suggest that it is either a lack of education on the client's part or perhaps his desire to avoid the expense of professional fees! The increasing number of disputes and legal actions in this area of work perhaps speaks for itself and also highlights the biggest criticism of the package deal.

The Design and Build Concept

Today's package deal, or Design and Build as it is now more respectably known, still offers the historic advantages but with modern refinements. Today, several large contractors have "in house" design teams who are familiar with their company's methods of working and particular specialities. They can, therefore, design to the best and most economical forms of construction, a significant advantage over builders who employ outside consultants. Design and Build projects should provide the optimum in design, price, construction and time because:

1. The Contractor is normally involved from the start, thus being completely aware of the client's requirements and conditions and offering the benefit of specialised knowledge and methods.
2. By eliminating traditional tendering procedure the time from inception to completion is reduced to a minimum.
3. There is direct contact between contractor and client.
4. A functional building at (usually) reasonable cost should result.
5. Initial tendering and pre-tender design costs can be substantially reduced.
6. The cost of the work is known and agreed prior to commencement.
7. The Contractor has control of all trades, nominated sub-contractors being eliminated except in rare circumstances.
8. There can be no claim for delays due to lack of information as the Contractor has full responsibility for design.

However, it must be accepted that several disadvantages exist, particularly:

1. Because only a performance brief is normally given to the Contractor(s) alternative solutions to specific design problems may be lost. The Contractor's solutions are likely to be decided by cost rather than by client benefit.
2. The number of contractors able to offer "in house" design facilities and support considerably larger tender overheads are limited and the choice of Contractor(s) correspondingly reduced.
3. The environmental quality, both internally and externally, may well be sacrificed in favour of cheaper prices and simpler building. Architectural flair will inevitably suffer although it must be accepted that it suffers in the majority of projects anyway!

4. By designing and building to the minimum performance requirements the client's long term interest may be ignored.
5. The normal supervision and control of traditional building projects would only be available if the client employed his own representatives. If this did happen, these representatives would not have the normal powers of instruction or decision because this would be in direct opposition to the principles of Design and Build projects.
6. If the Contractor should go into liquidation the client loses the professional knowledge and expertise gained as well as encountering all the normal problems that liquidation would cause.
7. The Contractor is vulnerable to his expertise and advice being used as a basis for competitive tendering.
8. There is greater scope for corruption or personal favouritism in the choice of contractor or scheme.

The QS Rôle

The title of the article suggests that the Quantity Surveying profession, in all its spheres, is being presented with new opportunities. By outlining the advantages and disadvantages above, these opportunities have become more apparent. They can now be examined as applicable to the three major areas of QS employment.

1. Private Practice

The QS background of experience in contract forms, building law, tender comparison, post-contract accounting and so on provides a unique and indispensable service to the package deal building client. By appointing his own Quantity Surveyor he ensures that:

1.1 the initial brief and tender documents are adequate, the requirements clear and the basis of tender known;
1.2 the offer includes all the client's requirements and expectations. So often the omissions from a package prove to be an unexpected and unbudgeted expense at the end of a contract;
1.3 competitive package offers will be compared fairly and on an equal basis;
1.4 the full implications of design and specification alternatives offered are known. The client will be advised independently on the cost and economics of alternative schemes or details, and not least of all on the running costs and maintenance implications after the building works are completed;
1.5 a satisfactory contract is used that is not biased to one particular party. The publication of a standard JCT form should be an acceptable replacement to the NFBTE or contractor's own form;
1.6 economies in construction do not work to the client's disadvantage. Savings due to the contractor's expertise are usually fair game in the package deal but do not necessarily always work to the client's benefit as well;
1.7 variations, when they arise, will be valued and agreed fairly, thus removing the vulnerability of an inexperienced client to agree to costs under the pressure of urgent completion;
1.8 defects may be recognized, diagnosed and remedied whilst the contractor is still involved.

2. Contracting

There are three big advantages for the Contractor's QS in package deals:

2.1 early involvement enables complete internal cost control of design and variations, resulting in the contractor's expertise and economies being used to maximum benefit;
2.2 because tender quantities and the like are done internally, the QS is completely aware of the measurement and details of the tender offer;
2.3 the relationship with the client (and his QS!) is much more likely to be one of co-operation because of close working from the onset.

3. Public Bodies

There is increasing scope for the use of package deals by public authorities, particularly as cash restraints make self-financing deals more attractive. These tend to be limited to the spheres of shopping centres, housing and industry and indeed complete packages including the eventual sale or letting of units with the authority retaining only the land freehold are already being offered. The Authority QS would, therefore, have the same opportunities as for those in private practice, whilst at the same time controlling more projects, providing greater departmental efficiency and removing the pressure of prolonged final accounts. This may, of course, meet with union opposition due to the erosion of workload and likely increase in redundancy but "natural wastage" invariably causes its own pressures to find quicker and more efficient forms of completing work and meeting targets.

The Selling of the Profession

How then may we realise this opportunity? It is primarily a matter of education because the QS is undoubtedly the most suited to this rôle of client advisor and protector. This education may stem from several sources, for example:

1. The Institute of Quantity Surveyors. A simple brochure outlining the benefits of using a member and the considerable advantages that this will provide (not least of all the high standards of a "learned society"). In addition the journal could exploit this and many other key rôles in modern building that the QS may, and does, fulfil.
2. Own Publicity. The Institute rules now permit publicity of firms and individuals to be issued to clients, though not for use in touting for work. There is nothing, therefore, to prevent brochures being produced to publicise such special skills.
3. Contractor's recommendation. The employment of contractors' own qualified QS and the recommendation of outside private practices to advise the client could only help to remove the prejudice that package deals are biased in the contractor's favour; it would establish the credibility of Design and Build contractors.
4. Publicity of projects through the technical press. It is in all parties' interest to ensure that interesting, detailed and current information of such projects is provided, particularly at the completion of a project.

Implementation of the above will help to ensure that the rise in popularity of package deals will lead to a corresponding rise in the need and use of qualified Quantity Surveyors.

ASSESSMENT OF ENERGY RESOURCES

The conventional energy fuels of coal, oil, natural gas and uranium will continue to provide the industrialised nations with energy well into the next century for, in spite of voiced optimism based on little fact, no significant energy alternatives exist or can be expected in the next few decades. Secure in the knowledge that within the sovereign limits of the United Kingdom there lie major quantities of coal, oil and natural gas, the great majority of the British people are not deeply concerned about the limits on future supplies of energy. It is only through the steadily rising price of energy that an impact is made and a response evoked.

Just how many of these conventional fuels exist and how much will be available to Britain? How are the quantities assessed and how reliable are the figures? These are fundamental questions and to seek the answers The Watt Committee on Energy brought a group of experts before an audience of persons concerned with many facets of energy consumption. The papers presented at that meeting and the contributions made by members of the audience are now available as the NINTH Report of The Watt Committee on Energy. Titled ASSESSMENT OF ENERGY RESOURCES the report deals with each of the geological constraints on the conventional energy resources and subsequent papers deal with the methods of assessment of coal, oil, natural gas and uranium resources on a global and national scale. It is clear that those concerned with each fuel use distinctly different methods of assessment. However, no assessment is final for, as circumstances change, new appraisals become possible. Notwithstanding this there are limits to how much exists for each of the conventional fuels and, more significantly, there are severe limitations to how much can be extracted. These limits are discussed in the report using the best facts and opinions available.

The report will appeal to a wide readership for throughout the papers the interplay between political, geological and financial aspects cannot be avoided.

Without exception, everyone should seek to be better informed about the future supplies of energy. This is particularly true in the industrialised countries. The report sets out some of the answers, but in so doing poses new questions.

The report is available price £18.80 including postage within the British Isles, from THE WATT COMMITTEE ON ENERGY LTD., 75 Knightsbridge, London SW1 7RB. Overseas surface mail is an additional 70p, or airmail to Europe £1.50 and airmail to Rest of the World £3.50. Remittance in Sterling on a London Bank.

If you need further information, please contact Mrs Gina Banyard, Company Secretary, THE WATT COMMITTEE ON ENERGY, telephone: 01-245-9238.