THE QUANTITY SURVEYOR AND HIS INFLUENCE ON EUROPE

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One of the most controversial issues in European building today is whether the UK should expand the services of its Quantity Surveyors into Europe. Many Quantity Surveyors agree with this expansion but so far little success has been achieved by the profession in establishing practices or in working with contractors and "tradesmen" on the continent.

This paper discusses the problems involved in European technical accounting for building works and the role it is possible for the Quantity Surveyor to undertake. The greatest impact on improving the standards of building techno-economics in the European construction market is seen by sharing skills rather than attempting to practice them.

Introduction

The control of financial resources in the European Construction Industry has been demonstrated by the author to have similar principles although the depth of detail, nature of practice used and the disciplines undertaking them vary considerably within countries in the building market.[1]

Two principal methods of technical accounting are to be found. One using an independent consultant, a descendant of the "measurer" who has developed further skills to give a service covering control of prices (or client's costs), from inception to completion; this service is practised principally in the UK and Eire. The other system involves a technician/measurer working usually for the builder but in some areas also for the designer, and gives a service limited solely to providing data for tendering and accounting for the post tender changes in the original bid, i.e. settling the variations. The former uses disciplines organised into learned societies having high standards of training. The people who practice the latter system are mainly technicians and with the exception of France, have little national contact with others who follow the same calling and few opportunities exist for post graduate development of their careers.

With the economic union of the leading countries, and growing trade between the others, this division of technical accounting methodology in Europe can be questioned under two headings:

(i) Is it acceptable and does it prevent the implementation of EEC directives and international trade?

The principal effect of this division of accountancy is that one part of the EEC regularly uses independently produced bills of quantities whilst the other part does not. This point while not lending itself to unilateral tendering, as is the aim of the EEC Directive, does not in itself prevent it, although it certainly impedes its implementation. Obviously problems exist because of different national languages and customs, depending on which part of the market the contractor normally works and the area the firm covers for tenders. This forms a major constraint to the developing of the objectives of the EEC for the construction industry. More study is needed on this problem of interpreting prices and cost internationally[2] but even when the problem is solved the division of technical accounting practices between the two disciplines in the EEC would still remain as an obstacle in the path towards unilateral tendering.

(ii) Should any moves be made to generate changes towards a unified form of technical accounting using quantity surveying practices as the basis?

(This basis is chosen because of the greater advantages it has, firstly, in aiming to improve efficiency in the accounting for works for the construction industry and secondly in giving better value for the money spent on building). This remains very much an open question requiring critical analysis. The unilateral adoption of quantity surveying in Europe, even though the principles of technical accounting are already similar, must not necessarily be accepted as the immediate solution and an essential or even advantageous part of the new strategy of economic co-operation to improve efficiency. Two major points must be raised and settled.

Firstly, although technical accounting systems are similar can the same be said of the problems and conditions that exist? Throughout the housing market there is a major requirement which the present building industry, in the majority of countries, cannot master. Whilst the demand to provide additional houses to meet the increasing and changing population trends is not met, a considerable old housing stock remains which needs renewing and at the worst refurbishing.[3] This occurs in other sectors of the market too such as education, industrial and hospital sectors where old buildings cannot always be renewed because of inadequate financial resources. More efficient and cheaper building would make this work feasible in many cases.

In those areas of Europe and the world which foster the Quantity Surveying service, two other points predominate; general contractors and competitive tendering, both good reasons for requiring bills of quantities. In the majority of the European mainland areas these two matters are reversed – few general contractors exist (although the trend is growing) and competitive tendering does not have such a predominant place in the market. Usually it is generally assumed that competitive tendering is the "best buy" but no recent research work is known to be in progress to demonstrate this point.

Secondly, no evidence exists that at the simple level of preparing tenders and accounting after the building works at the post tender stage that any system is not managing to work tolerably well. The major difference appears when the type of service given is examined. Clearly the Quantity Surveyor, even if many of the profession do not as yet fully practice it[5] can in theory advise on all facets of building economics and account for works (and the land on which the building stands) from the inception of a project right through the envisaged life cycle of that building. In Europe this complete embracement of all the facets into the tere-technology of a building is rarely considered. How does this difference arise?

One immediate answer is that the need for the service has rapidly grown due to the investors of the post-war period becoming more sensitive about their costs and seeking "value for money" due to the pressures of their inflationary society. Although these pressures are common throughout Europe, only in these areas where Quantity Surveyors practice does the organised profession exist to adapt to and meet this need. For about the first 140 years of its existence the Quantity Surveying profession, like its European counterparts, was insensitive to this wider problem. For this Quantity Surveying service the client is charged, roughly about 5% of a tender, but does the client get full value for his money?

Hence when considering any potential service of the Quantity Surveyor it has to be examined in its widest context. The commonability of practices must be examined for all facets of technical accounting and questioned if the present services, what ever the area in which they are practiced, meet all the present requirements of tendering and accounting for building works. Moreover, it should be noted that the early attempts to extend practices into Europe have been principally limited to giving UK property investors a limited design cost service and fulfilling the need to aid the investors. Very few of these practices that have extended into Europe have been noted to produce conventional bills of quantities for competitive tendering.

The Similarities and Differences in Organising financial resources in the European building market

Three points are recorded about the similarities of technical accountancy in the building market:

(i) All measuring, pricing and related accounting procedures are based on the same principles in terms of the investor's or design cost.

(ii) No pricing, measuring, or related procedures are reflected or related to the producer's output (costs).

(iii) The sector (and market) has no knowledge about production costs and only about design costs in the UK.

Two questions must now be examined. If the principles are so similar: first, why are some of the conventions for organising the accounting of the financial resources so different, and second, do these differences concerning practice contribute to the building industry's failure in any way to promote the housing (and other constructions of modern society) with a waste, by poor accounting, in resources to the nations concerned?

This paper is solely involved in European technical accounting and the role it is possible for quantity surveyors to undertake which would have the greatest impact on improving standards of building economics in the European Building market, but the case applies to nearly the whole world.

In one area, the UK, there is universal use of independently produced bills of quantities for competitive and other forms of tendering. Here has developed since about circa 1830, the profession of quantity surveying independent of the design and production processes. This service enables impartially presented data to be available for use by all those tendering for a contract and to undertake subsequent technical accounting when it is awarded. Quantity surveyors also work for contractors and this service originates from the need for a service to investigate more fully the interpretation of measurements and contractual matters to the builder's own advantage. Further the development of a separate technical accounting profession stimulates an interest in furthering the knowledge of building economics, although much of this work is due to Parkinsons Law in preference to critical thinking.

In recent years the quantity surveyor has considerably helped the investor's control of demand by instigating design cost planning – one of the few, but very creditable, innovations which can be credited to the profession.

In other areas of Europe independently produced bills of quantities are not used, except to a limited extent, principally in France (Lille and Lyon) and parts of Germany, with consequently the repetitive measuring of work during the building process. This system has evolved in the absence of any organised profession for technical accounting with the subsequent lack of practice (and development) of building economics. This is particularly noted when a general lack of thinking into wider issues of techno-economic problems is observed to have persisted until recent months, when international travel has enabled a limited number of forward thinking people to share the current thinking of the quantity surveyor, particularly on the subject of design cost planning.

However, the influence of national practice has little relevance to the major issues concerning the principles of measurement and pricing because of their similarities throughout Europe. The personnel undertaking contracting are basically the same; although in the UK the more widely established general contracting system, offers advantages for tradesmen to be promoted to management much more easily. While the differences in Europe too may be seen as solely trade versus general contractors, the use of equipment varies considerably.

Only in the UK is building economics considered as a subject area which is taught in depth and its development pursued – at the present principally by the only learned societies in Europe who exist for "measurers" of building work.

Are the present systems adequate for their purpose?

Since the 1939/45 war, demand has been consistently high and relatively stable, but resources have been steadily getting more expensive and in limited availability.

Initially the technical accounting systems appear to be working tolerably well, but they cannot be described as "adequate" if they inhibit the optimum control of financial resources at all its stages of the building process.

A need exists for an improved service which enables more building economics advice to be given. First to control the investor's or design costs relating to them, and eventually to realistically "cost" the usage of resources in building production; second, to help "builders" become more sensitive to their costings. Design solutions can then become efficient by discontinuing inefficient and costly methods and identifying cheap and perhaps previously rejected materials or production techniques.

But there are other problems too:

(i) The present systems in use are principally limited to obtaining tenders and post tender accounting. Any accounting procedure must be flexible enough to deal with the different situations required by the

varying demands of the resources available to fulfil it. Insensitivity to this matter is due to the resources being used by the investor having the "finished work" concept.

(ii) Moreover, while it is solely in the investors cost field that any developments have been made, only in the UK does a bank of price data exist.

(iii) Although, in the past, accounting has been adequate in the changing conditions, the present systems have several weaknesses. Today the investor, due to the inflationary trends and limits of finance (or cost of borrowing), seeks to know clearly not only all liabilities at the pre design stage but also during the life cycle of the building too.

The need for better control to ensure value for money at the design stage, can be noted by the interest and work commenced during the past decade, notably in Swedish, Swiss and West German Universities.

If a common methodology could be developed from which to use existing principles related to investor's costs, it would also facilitate the development of international collaboration to acquire knowledge and improve markets.

At the present time only the investor's resources are controlled – and these are only done so within a relatively small section of the market and then only in part. However, it is the failure to develop control of production resources and to relate the investor's design resources to them which emerge as the crux of the problem because:

(i) The present systems are generally insensitive to the interactions of building operations and the operations cannot be identified at any practical level of financial resource control. Thus efficient solutions are indistinguishable from the inefficient ones at a level of detail. Hence during both the design and production stages no feedback is feasible to aid those responsible for seeking cheaper solutions.

(ii) When attempts are made by designers to consider any effect their work will have on the building processes, the relevant data cannot be communicated by the present methods in use for calculating bids, to those who could in consequence use different pricing strategy to reflect any savings in resources identified.[6]

If the major production problems could be considered at the design stage, it would ultimately be of benefit to the client from the cheaper prices to be expected resulting from this rationalisation. It can be argued, that if the present European market cannot develop a design cost service in existing practice, how can it, within the fragmented industry, develop a new line of philosophy?

Equally it can be postulated, how can new techniques (like erecting factory built components) or materials gain growth in the market if their merits, which may lie in greater control and the saving of labour and plant resources, cannot be shown as cost saving by the constraints of the present system.

Why has change not been made before?

The problems concerning the need to control resources, and the provision of a data bank to provide European investor's with a design cost planning service have been known in the market for some years, the former being stressed in early reports of the EEC Housing Commission.[7]

The answer to the lack of attention lies in the fragmented building industry and the only organised groups of building economists existing in one area. Communications between technical accounts in Europe are virtually non existent and their common principles which have been highlighted are not generally appreciated.

It can also be asked why have the countries, whose building costs are expensive, not copied techniques from those with cheaper solutions? This has not been done because international comparison is not feasible at this level.[8 9] Facts in this area are only broadly known and to date international price/cost comparison has been a failure.

What can be done in the present situation to particularly aid the European housing market?

The two paramount needs to improve resource control for the whole of Europe are:

(i) To develop a service, possibly using existing conventions, to guide the investor into the control of his resources on a much wider scale.

(ii) To pursue new ideas and develop techno-economics to cope with the central problem – the existing divorce of design from production. This needs a change in accounting procedures which can enable feedback to be obtained to give realistic data concerning labour, plant and usage of material outputs on site. In some countries, notably the Netherlands and Sweden, some effort is being made to correct these conditions, by research work.

To achieve these aims in a fragmented industry could be very difficult. Moreover, serious moves are not yet feasible due to the constraints of national practice. When the facts are considered and compared, the essential principles of building practice in Europe can be seen as having a common philosophy, but not at present a common terminology.

Co-operation is only possible between people speaking in the same technical language. Terminology has been highlighted as a major problem.[11] Although the meaning of many words is fairly obvious to most English speakers, e.g. Kostenplanning, simple technical phrases, however, differ, e.g. "Concrete" translated from English into French means "Screed". This could be solved by international agreement but until it is many common facts will remain obscured.

Other advantages if unified accounting was adopted

The new European Union (and the nations outside it) could adopt a common form of technical accounting for building work; it would also have many immediate advantages too:

(i) International exchange of ideas and data would become easier. The transfer of technical "know how" has been one of the most important features of the world economy since the second World War and is an extremely important part of world economic change.

(ii) (a) *For EEC only*
Easier trading in the public works sector as required under the applicable Directive would be facilitated.

(b) *For all of Europe*
Easier international trading in the building market would be stimulating to international competition.

(iii) It could lead to the expansion of the expertise of the English Quantity Surveyor who would be available on a wider front in Europe, (if shown to be the best form of practice). This would increase an "invisible export" and moreover enable UK architects and engineers who could also practice in Europe, to work more closely with firms they are associated with at home and give a better service. But, it has been questioned whether the building industry can cope with future European demand.[12] This problem demonstrates the opportunities for the country or trader which can develop techniques to overcome resource problems and achieve better value for money.

In his paper at the 1971 CIB Congress, Mr. Karlin said "The building industry grows to an international industry when its industrialisation continues".[13]

The Direction of Change and Possible Solutions

The solution to the problems created by the limited building economics service existing in Europe outside the UK could enable the demand of the building market to be met, particularly in housing. This is a common problem in most European countries. To postulate dramatic change or incorporation of a new form of practice like independent quantity surveyors is unlikely to succeed. Such a move would be fraught with difficulties concerning local customs, law, language etc., and would be found to be not desirable or feasible. Not desirable because the present system works and enables equitable tenders to be obtained and post tender accounting to be agreed, even if these are not highly sensitive to the dictates of design and production. Not feasible because by its historic record the construction industry is slow to make radical changes and frequently oppose reform. Some form of transitional development to strengthen the existing technical accounting service stands a better chance of success.

The basic knowledge and development to be considered is to be found in the present principles used in Europe which have been demonstrated as being fundamentally common. The fund of data which is available in various forms exists in contractors records throughout the market and could be used as feedback to provide a sensitive data base if it was made available and could be organised by skilled accountants who do not at the moment exist there. However, an abundance of keen quantity surveyors exist in one area of Europe and many of whom are now fast becoming experienced academics. The situation is, however, exacerbated because the "traders" system which means measuring the data for each project is not collated into one set of papers. More research on the international price/cost problems to allow international trading and development of using the existing data base which is largely inaccessible in the offices of European builders is highly desirable.

Undoubtedly, the absence of independently produced bills of quantities is the principal reason for the recent slow development of design cost planning in Europe (apart from Great Britain) because their absence inhibits the easy development of a data bank. However, the basic information does exist. Possibly an enterprising agency could collect and form a bank if builders could be persuaded to release the data. In any case due to lack of uniformity much collation would be necessary. Moreover, due to its potential use having no benefit to the supplier it may have to be purchased too. This idea at least warrants examination.

Improve accounting procedures by reorientating the services of personnel associated with it

Improving the accounting procedures using existing conventions to ensure that better use is made of resources should be seen as three sectors for development:

(a) The need for more effective pre tender technical control of the investor's resources at the design stage.

(b) A common basis for tendering to ensure fair and realistic bids and save abortive measuring work by unsuccessful tradesmen or entrepreneurs.

(c) The extension of building economics to cover the wider implication of cost and use of capital costs.

These needs are recognised throughout Europe. Having an independent accounting profession makes one significant difference. It stimulates more thinking into technical accounting problems and stimulates learning. In Europe this can be seen from examination of the areas where quantity surveyors practice. The service of design cost control has become widespread, although the need for the change came from other causes. Where there is no profession looking solely at this sector the study of building economics has been negligible. Moreover, the role of technical accountancy too remains solely at technician level, e.g. the Metreur/verificateur.

Unifying procedures would have many advantages and considerably assist development of sounder technical accounting, make EEC directives regarding tendering feasible and the possibility of extending them beyond the Common Market to the wider market of Europe. This would also enable much more international exchange of data to help each national market in resource allocation and technical problems of the housing market.

The open question is whether any unification of practice is necessary and if so should it come from a quantity surveying professional "takeover", in Europe or a quantity surveying submission to incorporate the profession in the wider European practice, i.e. becoming aligned to the Architects' profession. Two alternatives are discussed:

(a) Adapt the UK method of technical accounting practice and develop the quantity surveyor in Europe, (using both independent practice and QS's joining the "producers" to serve their varied organisations too).

(b) Unify existing European technical accounting procedures and if any changes in practice and procedure are necessary – make them in the UK.

While any moves to help fellow Europeans can be examined using the data base "quantities", the use of quantity surveyors is an open question. Third solution should be considered too gradually, change by nature of practice by improving the standards.

(i) *Adopt the UK method of technical accounting and develop quantity surveying practice in Europe (both independent and contractors surveyors).*

Apart from the British Isles except for military works in Western Germany, and limited building in Gibraltar, only a few members of the profession practise in Europe giving the full quantity surveying service, i.e. producing bills of quantities in addition to building economics consultancy. Hence the QS work and status is strange to Europeans because in the absence of learned societies, the building economist or accountant is a technician and has little status. But if the QS is absent, it has already been shown all the principles upon which the QS practice is based are used. Thus has the quantity surveyor any role to play in Europe and is the introduction of this independent service as an aid to investors and the producer the solution to the problem?

Quantity surveying is about economic efficiency: far wider than the limited technical accounting services undertaken at the present time in Europe. It concerns value for money plus a role in public accountability in building and is not solely about some particular manifestation of building documentation.

This is much wider than the Metreur/verificateur or the Calculator Service which is now still restricted to "quantities". It is very slowly, particularly in Germany, adapting itself to a form of design cost planning and could be extended to give a management service too, as project co-ordinator.

Moreover, quantity surveyors in independent practice produce one document which saves all builders measuring.

Many discussions have been held which have indicated a desire to extend European technical accounting to wider and better services, particularly in building economics at the design stage, the use of production data and even bills of quantities. The only question to be examined is, can these changes be made in the existing system of European financial control, or should the quantity surveyor be introduced into the area to undertake them?

A better service of technical accounting is needed now, particularly controlling investors' financial resources. The open question is, should the European technical accounting system, now largely tender orientated, develop within its present framework and trend, which is a service by the designer, or be orientated as a separate independent functional profession like the quantity surveyor?

It can be argued that the quantity surveyor has contributed much to UK practice from his own skills, e.g. the creation of the BCIS, a fund of data. But much development like the innovation of standard phraseology, use of computers surely is only basically concerned with the mechanics of producing tendering documentation based on age old principles.

Some Europeans seek the standard phraseology with standardisation of methods of measurement, which could be repeated and have great benefit in Europe. They work tolerably well too. The study of documents to give a standard approach to presentation which would benefit the building industry in any area has been recommended by a University Lecturer in Building Economics although he practises in the Far East.[14] The QS could lead in introducing design cost planning but this represents a vague philosophy using data which can only be obtained if available. In Europe outside the UK – most bills of quantities are produced by the builders who although they use the same principles, the format differs and the data and bills are only available to those who draft them. Hence establishing a data bank without quantity surveyors would be very difficult.

But in the UK the profession tends to work in isolation as independent practices and this data is available, although the advantages of independence cannot be proven for the quantity surveyor. However, they appear to be considerable as postulated by the RICS, and IQS. A strong case exists for the production of independent documentation which fairly interprets contractual conditions and holding data regarded as confidential by builders and also provides a fund of design cost data. But the use of this data later for design *cost* planning is not sufficient ground for independence from the architectural profession because an agency run by contractors could collect the same data if contractors would provide it. This is being undertaken by a contractors organisation in Holland, although at this stage the data has little value for designers.

Moreover, while the profession is strong in the UK, its strength can have little value in Europe. The quantity surveyors from the UK, could not go alone and start a new profession in a foreign country. It would create more problems rather than solve the main one. Language problems cannot be overstressed. A survey has shown on average the younger generation of quantity surveyors have 5% less linguistic ability than the average for Europeans.[12] It will be noted only 15% of Europeans at the maximum can communicate in English effectively.

To import a quantity surveying service raises other issues too; the reluctance of local practitioners to change their forms of practice and integrate them, and the problem of the British QS gaining mastery of local conditions and practice, e.g. building law.

Against this the quantity surveyor has three basic attributes to offer:

(a) A full time building economist advising an investor can help considerably in obtaining the best value for his resources available.

(b) Providing a service with integrity, offering the builder viable and comprehensive information on which to base his bids. While this may be attractive to Europe where unbiased interpretation of contracts is needed; the contracts (i.e. the JCT Form) used by the QS in the UK is not perfect and has been much criticised by the Judges in recent cases, few facts can be found about corruption in Europe. Many people say it exists but no facts can be substantiated. No survey or report can be found which gives any facts to prove or disprove this statement. The fact that the matter is frequently raised must, however, indicate it exists to some degree.

(c) Improving and extending the techno/economic accounting practice.

The Quantity Surveyor can do much to help this problem, although not enough according to postulations from the author's research work.[15] Is an extended Quantity Surveying practice a good thing? To Quantity Surveyors, obviously – yes, but its value is questionable. The Tudor Walters

Report[16] in 1918 said bills of quantities added the *cost* to tenders on housing.

Taking a patriotic viewpoint quantity surveyors could be a good potential invisible export and also aid other invisible exports because of the services to property dealers and their consultants, but these are not the principal issues.

It can be argued, that special skills are of great value and quantity surveyors can lead and eventually achieve these needed developments by training the Europeans. This has been undertaken before, particularly when it is the execution of techniques of an unpleasant nature, e.g. training local soldiers to fight wars for political blocks.

The control of resources through better technical accounting has long been the perogative of the profession. Recent developments in the profession stemming from the need for a much wider building techno economics showed the appreciation of this problem. The changes in recent years of the examination syllabus demonstrate this point. There is a trend in quantity surveying towards wider facets of valuation and cost in use, and also to become the industry's manager (and for more quantity surveyors to be full time research workers).

A South African Quantity Surveyor on research has said there is a sufficient supply of quantity surveyors to do the measuring and orthodox professional work and feels the quantity surveyor must find a role in decision making or become a part of management.[17]

The need for the contractor's quantity surveyor is seen as parallel to that for the independent quantity surveyor serving the investor. Those who at present serve the builders in the market are limited to technical status and lack the breath of building economics knowledge which is needed to aid negotiation of *costs* and develop feedback of data. Moreover, poor accounting results in weak communications which all pass through the technical accounting stages in construction.

While moves towards a unified system appear feasible due to the common basic principles used, exporting the quantity surveyor service to Europe involves changes in attitude of the personnel, training and acceptance by the countries concerned of a new independent and contractors discipline. Moreover, it must be asked is it advantageous to make a change which offers little more in philosophy and will continue to keep the designer divorced from the producer?

(ii) *Unifying European Methods by standardising terminology, practice etc., and making the change in the United Kingdom to align with European practice.*

This means the independent quantity surveyor must work in closer practice with the architectural profession but the commercial QS can easily form part of the producer's accounting organisation. This is technically feasible and sound. Many practices in the private, and nearly all the public, sector in the UK, are in very close relationship, or even partnership with architects, often forming part of the same office. A generally efficient service is given with little difference to independent practice.

This is the most practical situation to implement. The main issue would be international co-ordination of training, qualification and practice and some form of confederation between the Quantity Surveyor and Architects' professions.

In the building economics field in Europe, the professionals are poorly trained in the technical accounting service, usually spending little time on these studies (and later duties). The work is always undertaken at a lower level by technicians. Few architects in Europe have been noted as solely specialising in technical accounting. The issue could more clearly be seen as one of whether architects and engineers in Europe should drop their accounting roles. But it can be questioned whether they are at present undertaking their building economics role in any case at the necessary depth of detail to meet the requirements of todays market. The quantity surveyor as a building economist is a specialist and is solely trained in it and gives his full time to the subject.

It may be feasible for the QS to work in Europe as a separate profession within the present European system, i.e. in existing design practices in preference to becoming an independent practice, but with what status? At the moment this is solely as a technician who does not share in practice as a partner.

One person[18] has said the Continental industry manages very well without the practice of independent quantity surveyors, a philosophy based on:

(i) The reduced ability of the independent QS to predict prices.
(ii) The UK trend is not related to "design and production".
(iii) The role of consultancy on the Continent.
(iv) The closeness of QS to client, but, he ignored the benefits of independent documentation.

The problem in adopting the European practice in the market can only be seen and possibly argued in the case of the present, when every profession has individualistic traits. The "building team" facet is a facade and professional identity is very strong for all members in it. The quantity surveying practice although perhaps an archaic profession which must face change whatever happens in Europe, is itself "established" to such a degree of independence that it has a natural self-preservation element. This would stimulate unity in the UK of all quantity surveyors and make this solution virtually impracticable there.

(iii) *The technical accountancy profession to master new accounting problems based on the operational approach.*

Even if the other solutions were acceptable they have not solved the crux of any problem raised by the need to reorientate communications towards production philosophy and operational type documentation.

By assuming "quantities" are suitable for Europe either by translating the quantity surveyor or increasing the building economics service in Europe, it is necessary to briefly examine "Are quantities the correct procedure to adopt?"

While it has been demonstrated that the existing financial control principles are in use throughout Europe and have the same philosophy, their basis has been much criticised, initially arising from the author's work.

The practice of quantities has also been queried by several people, including architects who have given their views too. One has called quantity surveyors "out-

dated".[19] A distinguished quantity surveyor in his address as Chairman of the RICS, Quantity Division in 1971, urged quantity surveyors to consider prices and costs on a much larger scale.[20] This advice has been largely ignored.

Before presenting quantities to Europe as the master solution it must be confirmed that they are valid. R. C. Sansom (the first person to undertake a comprehensive study in Europe) said "If the QS, ever went into Europe he would have to use operational principles".[21]

Organisation of work on site is one of the three crucial factors for higher productivity. The other two are quality of supervision and incentives. At a tactical level of a design the decision making ideally should be concerned with the simplification of site operations. These fall into well-defined tasks which can be tackled by a man or gang without interruption or attendance by other men or gangs.

When production is to be controlled with a view to increasing productivity it is important that the manager has a comprehensive knowledge of the production process entailed so that the planning is realistic, to use resources to the optimum value. This ideally should be seen in the tender documents.

The data collected must be in a form which is adaptable for use in tendering systems in order that it can be related to the planning process too.

Concluding Discussion

The extension of quantity surveying services to Europe will not be an easy move and unlikely in the light of present knowledge and experience to be successful. Language, local law and building custom raise many problems. Moreover, although the whole of the Continent uses the same data base for financial resource control it must be queried is a new profession necessary there to perform tasks now undertaken by technicians. This point can best be answered by noting that the present technical accounting service does not cover the full extent of knowledge embraced in the QS practice. Hence with this dearth of building economics practice and data the need for the quantity surveyor seems to exist if only to provide the badly needed design cost planning pre tender service. Moreover, why has the service not developed before and what constraints prevent it doing so now?

The absence of independently produced bills of quantities in most of Europe not only creates much duplication of measuring and the interpretation of design data when bids are prepared but prevents the immediate need to strengthen advice to the investor because no design cost data base exists. If this data base existed, a point which can be achieved now much could be achieved to increase the quality of technical accounting and aid value for money being more realistically given.

The crux of the problem is, therefore, the limited practice of building economics due to technician role of "measurers" and this needs an upgrading. This can be achieved either by a better training on the subject for the existing personnel or having quantity surveyors to fill this need. Attention must also be given beyond capital costs to life cycle – tere technology costings – because there is a great need for more "pure" building economics, i.e. ascertaining that the input of an industry balances its output.

Moreover it is essential that the overall economic structure of the industry is right. Input must not exceed output and the prediction of growth must reflect need – "The industry (UK) needs factual economic data, plus economic expertise to present them", a point Mr. Peter Trench made forceably in a recent lecture.[3] The ultimate solution lies in the development of a profession specialising in building economics throughout Europe. On this quest the quantity surveyor can do much by sharing his skills and knowledge with Europeans. This is likely to be more successful than quantity surveyors themselves trying to apply these skills as expatriots from their own homeland.

Hence, the best help the quantity surveyor as a profession can give to Europe can be seen under two headings:

First, helping with better training in the building economics field. It is here that the QS has a major part and the interchange of University teachers with visits by guest lecturers will do much to help this problem now, including strengthening the architects knowledge of the subject too.

Second, the setting up of data banks of design cost information is highly desirable. But this requires research and development. But in the UK the quantity surveyor is a specialist and much can be done as "an expert" to help throughout the Continent of Europe to help now on this matter.

Regarding developing private practice at least until Europeans have more highly developed knowledge and skills it is more likely to be achieved by integration of practice with European architects that the QS can help. This should be seen as a reinforcement rather than an independent practioner practicing in his own right because when the skills and experience have been gained it will be much easier for the Europeans to manage their own building economics. Hence, with the local problems for the QS a design cost data bank provided by the existing technicians but under the influence of the QS may be a better idea.

It has been demonstrated that while common principles exist these are solely related to investors costs – this itself could open the way to the extension of design cost planning unilaterally if the international price/cost problem was solved, and the data was available. However, a further common point noted in Europe is lack of control for the contractors resources and their relationship to realistic tendering is not existent. This itself largely contributes to the continued divorce of design from production there (as in the UK) and to date the quantity surveyor has shown no inclination to master this field. Any move to improve European technical accounting must consider this weakness.

The philosophy has existed since circa 1960 and although a variety of formats[22] and the methodology exists in the United Kingdom which could equally be applied on the Continent of Europe, much more development and experience with documentation is necessary. Extending quantity surveying practice with separate UK services to Europe is likely to be fraught with problems – however a similar service appears to be needed there now at the technician level. The absence of bills of quantities not only creates much duplication of measuring and interpretation of design data when competitive bids are prepared but prevents the immediate need to strengthen advice to the investor which can be achieved

now if the data bank based on priced bills of quantities existed.

The crux of the problem is, therefore, the low standards of building economics due to the lowly technician role of "measurers" play. This stems from inadequate training on the subject and needs upgrading. A quantity surveyor could fill this need – and each country could do it better if the service of building economics was strengthened.

Hence, first it is the strengthening and extending of the design cost data base which can be achieved while using the present systems which is likely to have the most effect and help the building market. To achieve this the crux of the problem is first to improve the service and training Europeans in building economics.

Developments take a long time and independent bills of quantities in an improved form – perhaps in the light of changing experience in the UK may come. Moreover, it is likely to be the use of transitional production orientated tendering biased bills which will be the most practical answer. But when they do it is likely to be a fellow European, who will then be more highly trained in building economics than today who performs the service – in preference to the UK quantity surveyor.

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Education and Research

CITY OF BIRMINGHAM POLYTECHNIC

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The quality of surveying education at Birmingham Polytechnic is the product of the vitality and enthusiasm of its staff. The lively and stimulating atmosphere generated among students is directed toward encouraging each student to reach their own potential.

The collection of reports below are an indication of the awareness within the Department of Construction and Surveying toward the requirements of education and the profession.

Development of Surveying Courses - P. J. Findlay

When the City of Birmingham Polytechnic came into existence some eight years ago, the Department of Construction and Surveying (then the Department of Construction Technology) was mainly concerned with part-time education in civil engineering, building, quantity surveying, estate management and building surveying.

These part-time surveying courses prepared students for the professional examinations set by the Institute of Quantity Surveyors and the General Practice, Building Surveying and Quantity Surveying Divisions of the Royal Institution of Chartered Surveyors.

In 1975 the Polytechnic was designated by The Royal Institution as a "centre of excellence" which gave approval for the department to run fully exempting courses in surveying. In the summer of 1975 two diploma courses one in quantity surveying and the other in estate management, were validated and enrolled their first students in September of that year.