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## **Selection of Consultants**

Choix des bureaux d'étude

Auswahl von Planungsbüros

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## **SUMMARY**

This paper examines how lack of technical „know-how“ and/or finances for funding constructing projects in developing countries may affect the selection of Consultants, their duties and conditions of agreement between them and their clients. Arguments are presented for differences in approach from that in developed countries. Some related matters of Project Management are also discussed.

## **RESUME**

Le manque de connaissances techniques et/ou financières pour lancer des projets de construction dans les pays en voie de développement peut influencer le choix des ingénieurs, leurs devoirs et leurs accords entre eux et leurs clients. Des arguments pour une approche différente de celles des pays développés sont présentés. Quelques aspects de gestion des projets sont également discutés.

## **ZUSAMMENFASSUNG**

In diesem Beitrag wird untersucht, wie das Fehlen von technischem Know-how und/oder das Fehlen von Mitteln zur Finanzierung von Bauprojekten in Entwicklungsländern die Wahl der Dienstleistungsfirmen und die Aufgaben und Vertragsbedingungen zwischen diesen Firmen und den Bauherren beeinflusst. Argumente für ein Angehen der Probleme, das sich von demjenigen in den industrialisierten Ländern unterscheidet, werden vorgelegt. Einige damit zusammenhängende Fragen des Projekt-Managements werden diskutiert.



## 1. INTRODUCTION

This Symposium deals with problems of design and construction in developing countries which in this context are assumed to be those that are short of the necessary "know-how" in planning, design and execution of construction projects and/or do not have the necessary resources to finance these projects. Coupled with this, there is the desire to acquire the "know-how" in order to be self-sufficient in this aspect and also the pressure from the local society for large scale infrastructure to be built up very quickly. An attempt is made in this paper to examine how these four aspects affect in any way the method of selection of consultants, the duties of consultants and conditions of agreement between them and the clients.

## 2. METHOD OF SELECTION

In some of the developed countries, particularly in Europe, tenders are invited for the design and construction of projects, based on an outline design. In these countries the contractors have the necessary expertise and resources to carry out the design. The client would then employ a prüf engineer (or equivalent) to check the design for compliance with specified criteria, and probably use his own staff to supervise the construction. A developing country may not have the necessary in house expertise to supervise the construction and is unlikely to have a code of practice which is essential as a common basis to judge competitive designs. It would therefore be necessary to employ a consulting engineer to advise on these aspects anyway. If the country in question also did not have the necessary finance and had to borrow the money from the World Bank or similar organisation, the lenders would stipulate certain conditions. It would appear that some of these organisations do not favour the "turnkey project" system. It would therefore seem that in developing countries the system of appointing the consulting engineer to carry out the design etc. is to be preferred to the turnkey system.

In developed countries, public clients generally have in house expertise to handle most of their work. They will need to appoint consultants for some special project or more generally to deal with peaks in their programme when the resources available are not sufficient to meet the workload. In such situations, they usually appoint consultants from within their own countries. Public clients do know of the expertise and resources available within firms and therefore make appointments based on this knowledge. The situation will be different in a developing country. Due to recent economic conditions, there has been a reduction in construction in Europe coupled with a boom in Middle Eastern and certain African countries. As a consequence, a large number of consulting engineers from Europe and other places are looking for work in these countries and the job of selection of consulting engineers cannot be easy. If a country has employed certain consultants previously and found them to be satisfactory, it is likely that they would make appointments based on previous knowledge - and obviously this goes on. In most cases, however, the client would have the names of a large number of consulting organisations from which to select one. In these circumstances "selection based on submission" seems to be the best method.

In this method it is necessary to make a selected list and this can be done only from first hand knowledge of the firms involved or by referring to other clients who have previously used the services of the consulting engineers. In inviting consulting engineers to submit proposals it is necessary that the client prepares a full and clear brief of the work to be carried out by the consulting engineer.

There is then the vexed question of whether the submission should include a statement of fees involved. Some funding organisations do not want a statement of fees to be included and if it is, for it to be kept separate from the main submission which forms the only basis for selection. It does seem, however, that in the case where the client is financing the work himself, it is only right that the client should want to have some idea at the outset of what he would have to pay for consulting services - especially if public funds are involved. It must be emphasized, however, that statement of fees can be meaningful only if all those on the selected list are pricing on the same basis and hence the need for a comprehensive brief. In the United Kingdom, consultant appointments are generally made without the need for any form of submission. There are instances, especially on development work, where an outline brief is provided and the consulting engineer is then asked to prepare the brief for the detailed work. The consulting engineer is paid for this work. The preparation of a submission is somewhat analogous to this and as the consulting engineers are involved in some expense in preparing the submission, it seems reasonable to make some sort of payment to defray these expenses.

### 3. DUTIES

Consulting engineers are normally employed on one or more of the following:

- a) Feasibility study.
- b) Detailed design.
- c) Supervision of construction.

These aspects are common to any project whether it be in a developing country or elsewhere. In many of the developed countries, large amounts of construction have gone on for decades before the public at large began to sit up and take notice of the impact of these works on the environment. In developing countries, a large amount of construction is being telescoped into a short time and a conscious decision needs to be taken of the acceptable environmental standards to be adopted. This should be considered at the feasibility study stage.

Consideration should be given in design to method of construction, materials available in the client's country and to subsequent maintenance by local personnel. On smaller schemes, it may be the policy to use local contractors or even direct labour organisations and the design may have to be oriented to construction without the use of mechanized plant.

Mention has been made in the Introductory Report on the requirement to check structural adequacy of major works. This applies in the UK to all bridges where the designers' proposals for the basic design form, design criteria and methods to be applied are agreed by the Department's in house staff who acts as the Technical Approval Authority (TAA). Any departures from published standards found to be necessary for the design must be agreed with the TAA. The completed design is then independently checked for compliance with the agreed criteria and methods. The designer and independent checker supply certificates to the client. The independent checker is responsible to the designer only. This formalized procedure ensures that acceptable methods are used in the design process and assurance on safety is obtained by the checking process. Innovations are not hindered and responsibilities are clearly defined.



A developing country could adopt this system wholesale provided it had staff with the necessary experience to perform the functions of the TAA. Where in house expertise is not available, another CE would have to be appointed to perform this function. Any disagreement would have to be referred to the client for a decision.

Generally, the same CE is appointed to supervise the construction of the works he has designed. The arguments in favour of this arrangement apply equally to works in developing countries. The maintenance of the works is, however, carried out by the client as the owner and it is desirable that in developing countries also the client takes over this responsibility. It will be necessary for the CE to prepare maintenance schedules setting out the frequency of the inspections and the experience of the personnel required to carry out these inspections. It may be necessary for the CE's staff to stay behind and train the local personnel before the utility is completely handed over.

#### 4. TERMS OF AGREEMENT

In developing countries, Associations of CE's would generally have standard fee scales. A public client who has a continuous workload may have negotiated a special fee scale with the Association. However, no such fee scale exists for international work. FIDIC has not gone into the question of fees in any detail. Therefore, fees have to be settled by negotiation and all the more reason therefore for submission to include a fee structure. It was suggested earlier that CE's be paid for making submissions, and for this and similar tasks a lump sum payment would seem to be appropriate. In UK, time related fees are paid for feasibility study and a scale fee for the design and construction aspects. It may be difficult to adopt a scale fee based on Construction Costs where relevant experience is not available. However, it is worthwhile saying that anyone who has done a piece of work needs to be paid promptly for his services - and this applies in both the developed and developing countries. Early payment of accounts will, apart from easing cash flow problems, cement good relationships which are essential for the success of a project.

Mention was made of the need for developing countries to become self-sufficient and be able to undertake the projects themselves. The current trend appears to be for developing countries to make it a requirement for foreign CEs to participate only in association with local firms. Public clients need to have a professional capability within their ranks and should undertake some works themselves to gain the necessary expertise. This would also enable them to judge the standard of work of the CEs. Engineers working in the public service in developing countries could be trained by secondment to CEs engaged on their projects.

#### 5. PROJECT MANAGEMENT

In any project there needs to be a Project Manager who co-ordinates the work of all the parties involved. In UK, his duties would begin at scheme inception and would consist inter-alia of the following:

- a) Preparing the brief for the CE and making the necessary arrangements for his appointment.
- b) Progressing the scheme through the various stages of preparation to final works commitment - and ensuring that the necessary funds are made available.



- c) Taking the lead in ensuring that all statutory requirements are met.
- d) Clearing CEs accounts for payment.
- e) Supervising the work of the CE.
- f) Financial control during construction.

Some of these duties can be carried out by the CE; they are, however, mostly procedural matters devised by the client organisation to ensure efficient working and therefore it is customary for the project manager to be from the staff of the client organisation. Experience in the Department of Transport shows that a person who is detached from the detail and takes a broad overall view of the project is able to foresee difficulties that could arise and take necessary action.

In developing countries, the procedures of the client organisation would be completely new to outsiders, including foreign consultants. It is desirable therefore that the project manager is attached to the staff of the client organisation. It is not absolutely essential that the project manager should be the same person from scheme inception to completion. In the Department of Transport, for example, one person looks after the project until all contract documents are prepared and another one takes over from invitation of tenders to completion. Experience has shown this to be desirable, arising from the need for the project manager (who may be looking after more than one scheme) to be able to devote his time fully to construction matters without being tied down on time consuming aspects of the preparation of another scheme. Each country will have its own particular needs, but if project managership is to be divided, the start of the construction stage would appear to be the most suitable point of change.

It may appear from some of the duties that are listed that they could be performed by a non-professional, but this is not the case. The project manager is invariably drawn into technical discussions and a great part of his duties will be involved with the CE. It is therefore essential that he be a professional person, and it is all the more reason for developing countries to build up some expertise in order to have this capability in the client organisations.

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