

CONSTRUCTION MANAGEMENT PROGRAMME

SMALL-SCALE CONSTRUCTION ENTERPRISES

IN GHANA:

PRACTICES, PROBLEMS AND NEEDS

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Construction Information Paper

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Derek Miles and John Ward

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FOREWORD

This paper analyses the practices, problems and needs of small-scale construction enterprises in Ghana. It arose as a result of research undertaken in connection with the preparation of a policy document for the "Improve Your Construction Business" (IYCB) project, supported by the Government of the Netherlands and based at the Management Development and Productivity Institute (MDPI).

Why focus on small-scale construction enterprises? An earlier ILO book (*Guidelines for the development of small-scale construction enterprises*, Geneva, ILO, 1987) answered this question as follows:

1. They are powerful generators of income and employment — often with less capital investment per job created than larger enterprises. But the difficulties faced by small enterprises, whether they are beginning in business or have already been trading for some time, are usually quite different from those of bigger firms. This is particularly the case with small-scale contractors, whose problems deserve separate consideration and action.
2. They are often the only type of enterprise willing and able to take on small construction projects. At least they can potentially offer the best value for money to clients on small, disparate and often geographically dispersed schemes. Schools; rural health centres; village water supplies; low-cost roads; and similar projects can often have a major impact on the quality of human life — and are thus key components in many national development programmes. Without a network of efficient small contractors and materials manufacturers these facilities are often difficult or expensive to provide.
3. There will be some — even if only relatively few — small-scale contractors whose businesses will grow through the construction market, undertaking successively larger projects. At present there are many countries in which large modern projects can only be undertaken by

firms with expatriate origins or foreign expertise and backing. The more soundly based the small-scale sector can be made, the better will be the prospects for the development of medium and large-scale national firms.

Despite their importance, comparatively little is known about the specific problems that they face, particularly in Africa. Since it is likely that the problems faced by these Ghanaian enterprises are comparable to those faced by similar small firms elsewhere, it seemed worthwhile to bring the fruits of the research undertaken by the IYCB team to the attention of a wider audience.

This paper was prepared in the ILO Management Development Branch by Derek Miles, Project Co-ordinator of the Construction Management Programme, and John Ward, Chief Technical Adviser to the IYCB project. They would like to record their gratitude to the MDPI Project Team who undertook the basic research.

The Project Team in turn were grateful for the help and co-operation they received from all who assisted them during their interview and discussions, particularly the National and Regional Chairperson and Committees of the Civil Engineering and Building Contractors Association of Ghana (CEBCAG).

The "Improve Your Construction Business" project in Ghana is executed by the ILO under its multilateral programme of technical co-operation supported by the Government of the Netherlands. It is a 2-year project which aims to assist small-scale contractors and building materials manufacturers, with the target group being the many small enterprises run by owner/managers, and each employing some 5-15 people.

Due to poor management and a lack of medium- and long-term planning, the mortality rate is high among such enterprises, and few are in a position to offer stable employment opportunities. Most of these enterprises struggle to survive on a job-to-job basis by competing for small orders from individuals rather than benefiting from larger infrastructural projects. This is doubly unfortunate, since clients are unable to benefit from the low overheads and labour-intensive technologies which characterise well-managed small construction enterprises, but it also means that worthwhile potential employment opportunities are lost.

The building sub-sector contains in principle two categories of small enterprises. Jobbing builders are "mobile" businesses competing for public or private sector contracts. In between projects labour and equipment are frequently idle while the managers concentrate on preparing new tenders. The second group of enterprises are the manufacturers of building materials. They are characterised by a more steady workplan, producing relatively standardised products. Although the two groups have many common concerns, there are also important differences which should influence the design of a management training programme. It was therefore clear that an appropriate training strategy for the two groups would have to take both the common features and the specific characteristics into account.

Although the ILO has developed the Inter-active Contractor Training (ICT) methodology to assist small- and medium-scale construction enterprises, this material appeared somewhat too sophisticated for the target group. Accordingly, it was decided to draw upon another ILO methodology, the Improve Your Business (IYB) training and counselling programme.

IYB aims at managers of small enterprises. It provides a number of very specific ideas on how best to carry out management training and business counselling for small businesses. The IYB Handbook and Workbook for entrepreneurs may be used by trainers or consultants providing a service to small businesses or as self-study training material by the entrepreneurs themselves. The IYB programme is based on the assumption that the entrepreneurs are already in business and that they wish to improve their performance as managers. IYB is relevant to all types of business operators such as retailers, wholesalers and producers of goods and services.

The IYB programme was created on the assumption that a maximum increase of productivity in small-scale enterprises is achieved when entrepreneurs are made aware of the potential for improvements of the management of their enterprises. Only then will they be fully motivated to participate in the training. The programme covers essential aspects of management such as buying and selling, manufacturing and operating, book-keeping, costing and pricing, marketing, manufacturing accounting, office work and planning.

Based on ideas originally conceived in Sweden by the Swedish Employers' Confederation, the IYB programme was developed by ILO for use in developing countries. The ILO is at present implementing IYB programmes in some 20 countries in Africa, Asia and the Caribbean. A regional IYB-project office was set up in Nairobi, Kenya, in 1983, and it was later transferred to Harare, Zimbabwe, with the task of further developing training approaches and materials in a practical field setting. The model IYB materials are designed to be adapted to local business conditions and several translations have been published.

In order to enhance the impact of IYB-training a series of sectoral applications of the basic materials for entrepreneurs is being developed, tailored for conditions in particular lines of business such as construction enterprises.

Ghana was selected as a suitable country within which the first Improve Your Construction Business (IYCB) project could be undertaken. Many secondary towns in Ghana are characterised by a lack of suitable small-scale enterprises in the construction sector, capable of implementing infrastructural improvement projects and of developing local sectorial expertise. The

availability of a well-established indigenous management training institution in the Management Development and Productivity Institute (MDPI) was a further positive factor.

The main activities being carried out by the IYCB project are as follows:

1. assessing the needs of small-scale construction enterprises, with emphasis on their management training needs;
2. identification of institutions qualified to participate in the IYCB-programme;
3. preparation of a prototype IYCB Handbook, Workbook and Manuals;
4. identification and selection of core local trainers/counsellors;
5. preparation of core local trainers/counsellors through trainers' seminars of 2-3 weeks duration;
6. 8-10 workshops of 1-2 weeks duration for small-scale construction enterprises and follow-up activities;
7. publishing and distributing a final version of IYCB Handbook, Workbooks and Manuals;
8. review of project achievements.

The present paper is the outcome of the first of these activities, and its publication should assist other countries to compare the practices, problems and needs of their small enterprises with those in Ghana, with a view to examining the scope for setting up their own local IYCB programmes.

PRACTICES AND PROBLEMS

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In this chapter the owners and managers of small-scale construction enterprises speak for themselves. They raise a shopping list of 44 problems, which also tell us a good deal about their typical commercial practices. Some of these problems are of their own making, and some are questions of attitude (contractors, like farmers, are great grumblers!), but many are real and are also susceptible to solution. The sessions at which these problems arose were effectively "small-scale construction enterprise clinics", and the Project Team collected groups of compatible "problem" together, and offered their explanation and possible solutions.

We have accordingly followed the format of the clinics, with the problem allocated into ten broad categories. Some of the solutions are outside the scope of the IYCB project, which is essentially concerned with the development of entrepreneurial and basic construction management skills. However, the reader will note that inadequate training and skills development underlies many of the entrepreneurs' problems, and this is reflected in the results of the training needs analysis in Chapter 3.

CONTRACTUAL PROCEDURES

Contractual procedures give rise to a subset of seven problem clusters. The convoluted and inappropriate contractual framework in Ghana was the subject of a chapter in the ILO book *Foundations for Change** in 1984. According to the entrepreneurs, it is still a serious constraining factor which limits their scope for development in a variety of ways.

* G.A. Edmonds and D.W.J. Miles: *Foundations for Change* (London, Intermediate Technology Publications, 1984).

Outdated documents

Problem 1

The Contractors have to work to with outdated Contract Documents such as the standard method of measurement and conditions of contract. It is about time that contract documents were developed to suit the Construction Industry in Ghana.

Explanation and possible solutions

The documents presently being used are a "hangover" from the British Colonial Era and are inappropriate for use today. To quote from *Foundations for change*:

"One of the features of the traditional British system is that the contractor is treated as a lackey rather than as a partner in the construction process, and it is only in the last few decades that British contractors have gained emancipation from this subordinate position and begun to bring their expertise to bear in the construction process. Ghanaian contractors have been less fortunate, and there is evidence that unmodified imported institutional framework has been a key factor in holding them back.

A particular problem is the wide powers granted to the architect or engineer under the British system, which is seen as safeguarding the client's interest without adequate regard to the needs of the contractor.

British versions are based on a socio-economic environment that simply does not exist in Ghana.

It may be that a move to a more flexible form of performance specification would be more appropriate for conditions in a country such as Ghana.

No-one gains from inappropriate specifications and their attendant, if unqualified, costs."

This problem is now, albeit belatedly, being addressed. The headlines in the **Peoples Daily Graphic** of Friday, 3 August

1990 read — "Conditions of contracts for all civil works under review" and stated:

"The Ministry of Road and Highways is reviewing the conditions of contracts for civil works for both international and local competitive biddings for adoption as the standard conditions of contracts for the whole construction industry in the country. The move is to make contract administration in the country easier for the benefit of all."

This is of course good news, but it would be ever better if the review is extended to cover all sections of the construction industry.

Conflicts of interest

Problem 2

Possible conflicts of interest may occur at the tender stage if a consultant who calculated the bill of quantities for a contractor also has a say in adjudicating the tender and awarding the contract.

Explanation and possible solutions

"Conflict of interest" situations should never be allowed to happen. If a consultant has been employed by a contractor to work out a tender then that consultant should be excused from sitting on any tender board or adjudication committee where that submission is to be discussed. Even in the best of circumstances the consultant may be held open to an accusation of "conflict of interest". It is possible that the new management of the Architectural and Engineering Services Corporation (AESC)* has this problem on its agenda, but the CEBCAG may be able to assist in reaching a solution by nominating one of their members to sit on a tender board or adjudication committee, providing there is no conflict of interest situation involved.

* The AESC is a statutory corporation, established to undertake all public sector architectural and engineering consultancy work. It therefore has a dominant role in determining conditions of contract.

Lack of stability and status

This area consists of a batch of ten linked areas of complaint. The common factor is that contractors see themselves as lacking the power and status that they would need to be masters of their own fate. They feel threatened at every turn, almost to the point of paranoia.

Problem 3

Unregistered teams of artisans are taking a lot of work from contractors who are registered and are members of CEBCAG.

Problem 4

Contractors are afraid to stand up and claim their contractual rights in case they may be unofficially "blacklisted".

Problem 5

Consultants have too much authority over contractors.

Problem 6

Contractors are not given any information about the awarding of a contract. They feel they are entitled to be advised of the results of a tender adjudication, particularly when contracts that could be done by class 3 and 4 contractors are awarded to class 1 and 2 contractors.

Problem 7

Building contractors are not paid the 10 per cent monthly interest due to them in cases of late certificate payment.

Problem 8

Contractors are awarded contracts outside the regions in which they are registered.

Problem 9

High grade contractors are awarded contracts that should be done by lower grade contractors.

Problem 10

Work should be equally shared (not unanimously agreed).

Problem 11

Contractors who make legitimate claims (as they believe) to consultants, quoting variation orders, site instruction, etc. often get a bad reaction from consultants who feel that these amount to personal litigation against them.

Problem 12

Contracts tend to be awarded to companies who bid far too low.

Explanation and possible solutions

It is obvious that the entrepreneurs feel that they are not getting value for their membership of CEBCAG. It is therefore up to the CEBCAG committees, both national and regional to win the confidence of their members by tackling their problems in a positive way. Some examples of possible solutions might be as follows:

1. CEBCAG could offer clients in the private sector guarantees on the standard of the work done by their members. They may lead to a householder obtaining cheaper household insurance. The private householders should be encouraged to believe that quality is preferable to cheap, unguaranteed work.
2. CEBCAG should be standing up and arguing the contractor's case. The individual should be moved out of the direct "firing line". For example, in the case of Problem 7, CEBCAG could be claiming this 10 per cent interest automatically on the contractor's behalf, as long as they are given information by the contractor.
3. All the problems occurring in this section point to a great need for better communications between CEBCAG and AESC.

So what should be done? Here are a set of five positive recommendations:

-
1. That the National and Regional Committees of CEBCAG decide on positive step to take in order to win back the confidence of their members. (Since the National and Regional Committees of CEBCAG are composed of motivated and dedicated people this should not prove too difficult to achieve).
 2. That CEBCAG establish better communications with the new management of AESC. They should try to arrange for regular meetings to take place at which the more serious problems can be discussed.
 3. That CEBCAG realise the need to get "its own house in order". An effective system of internal communication between National and Regional Offices is essential, as are regular meetings with the members of the Association.
 4. That CEBCAG decide whether the Association requires external assistance in strengthening its structure and authority.
 5. That 10 trainers/counsellors from the Contractors' Association be trained in the principles and practice of "Improve Your Construction Business".

Unfavourable payment conditions

Problem 13

50 per cent of retention money is held when project funds run out, up to as long as 10 years.

Problem 14

The mobilisation fee has been withdrawn because of bad practice on the part of some contractors in using it to buy non-essential luxury items. Contractors have now been re-classified and the "rotten wood" cut out, so it should be re-introduced. (Road contractors receive 15 per cent mobilisation fee).

GAOERO 1. water and 2. land and 3. air pollution and 4. other

and 5. and 6. and 7. and 8. and 9. and 10. and 11. and 12.

and 13. and 14. and 15. and 16. and 17. and 18. and 19. and 20.

Problem 15
The "road contractors" method of certificate processing and payment is far more streamlined and efficient than that for building contractors.

and 21. and 22. and 23. and 24. and 25. and 26. and 27. and 28.

and 29. and 30. and 31. and 32. and 33. and 34. and 35. and 36.

Problem 16
Contractors are not paid for materials which deteriorate on site during periods of job suspension and have to be replaced.

and 37. and 38. and 39. and 40. and 41. and 42. and 43. and 44.

and 45. and 46. and 47. and 48. and 49. and 50. and 51. and 52.

Problem 17
Contractors are not given prior notice as to when contracts are to be suspended so that they have time to re-organise their work.

Problem 18

and 53. and 54. and 55. and 56. and 57. and 58. and 59. and 60.

and 61. and 62. and 63. and 64. and 65. and 66. and 67. and 68.

Contract documents have been changed so that certificate payments to building contractors may now take up to 60 days without penalty to the client. It has previously been 30 days.

Problem 19

and 69. and 70. and 71. and 72. and 73. and 74. and 75. and 76.

and 77. and 78. and 79. and 80. and 81. and 82. and 83. and 84.

The client Ministry deducts tax from the contractor and issues a receipt, but it does not complete the operation until some 2 to 3 months later. This causes problems and embarrassment to entrepreneurs, and they want to be able to pay the tax directly to the government, by-passing the client Ministry.

Explanation and possible solutions

If the above complaints from the entrepreneurs are correct then it would appear they are being unfairly treated as a sector, particularly the building contractors. The building contractors are especially vociferous in their complaints about late payments and the fact that they do not automatically get the 10 per cent interest after 30 days.

The proposed solution was that the Ministry of Works and Housing investigate the above problems with a view to considering the following suggested amendments:

1. Retention money to be released after 1 year providing the work is satisfactory. The contractor should not be penalised for normal deterioration of the incomplete works.
2. If a contractor is awarded a contract, then the company is presumably considered to be financially secure and therefore a good risk for receiving the 15 per cent mobilisation fee. Each case should at least be treated on merit.
3. Perishable materials on site be taken over by the client Ministry upon job suspension, and the contractor paid for them.
4. Contract documents should revert to the original "30 days without penalty", and the 10 per cent interest should be paid by the Ministry of Works and Housing without contractors having to make a claim.

Bidding problems

Problem 20

Tender documents are expensive and the costs are not refundable.

Problem 21

Social security clearances are required at the bidding stage. Entrepreneurs cannot afford to keep labour on when they run out of work and so cannot fulfil this requirement.

Explanation and possible solutions

The idea of charging for tender documents is basically a good one since it limits those who take them to the serious tenderers. However, a refund should be made to those entrepreneurs who bid in a professional manner, e.g. those who have filled in the documents properly and come within 25 per cent of the official estimate.

The proposed IYCB Workshops will deal with estimating, tendering and submitting quotations.

call guidelines may be a basis for a set of recommendations.

The social security clearances are presumably required to establish the fact that the contractor has labour on his books ready to start work. This would appear to be an unnecessary requirement since labour is readily available. However, in the outlying districts artisans are difficult to recruit, so there may be some reason for this regulation. However, it does preclude many serious entrepreneurs from bidding and should be regarded in that light. There may be a case here for a special penalty clause to be inserted into the form of contract by which a contractor may be penalised if enough labour to run the job in a professional manner has not been employed.

The ILO project team put forward four recommendations:

1. That the possibility of refunding the cost of tender documents be investigated.
2. That the proposed IYCB Workshops include sections on estimating, tendering and submitting quotations.
3. That an alternative to entrepreneurs having to supply social security clearance at the bidding stage be sought.
4. That the proposed IYCB Workshops include modules on human resource planning and productivity.

Difficulties faced by new firms

Problem 22

Young/new contractors are frustrated by the system of upgrading.

Explanation and possible solutions

This is a "chicken and egg" situation. New contractors who feel they have been classified too low wish to be upgraded, but to be upgraded they must first prove they can satisfactorily complete the work given to them in the low grade. Contracts are at a premium, so it may be several years before they can be upgraded and many feel they will not make it. It is possible for a contractor to request upgrading because the company has been improved by additions to plant, workforce, etc., but this is apparently not encouraged.

The ILO project team will work with CEBCAG to get more information on the classification methods.

INADEQUATE MARKET OPPORTUNITIES

Problem 23

Private sector development is low, and clients are difficult, i.e. they want more work for less money.

Problem 24

There is no continuity of work.

Problem 25

Advantages are given to foreign contractors over Ghanaian contractors.

Problem 26

Suspended projects should be re-activated.

Explanation and possible solutions

These are the type of problems that will lessen as the economic situation improves, and more money becomes available to both Government and private citizens.

FINANCING THE WORK

Problem 27

Bank financing is difficult to obtain and is very expensive at 30 per cent interest.

Explanation and possible solution

This problem is compounded by the fact that certain entrepreneurs have failed to pay back their loans and instead have spent certificate payments on luxury items such as large and expensive new cars. Some have even taken out a second loan with another bank without letting the first bank know about it.

Bank managers are always prepared to help deserving entrepreneurs, but they have little sympathy with clients who lie to them, spend money on unnecessary luxuries, change banks indiscriminately, keep two sets of books (one correct, one false) or try to bluff the manager by giving misleading information when they get into trouble financially.

Bank managers understand the problems that entrepreneurs have with delayed payments due to them, particularly Ghanaian contractors facing the convoluted settlement procedures discussed later in this paper. They sympathise with entrepreneurs who have to keep paying the interest on their loans when their income is delayed by the claim processing system, but see no possibility of loan repayments being "frozen" over this period, which can last up to six months or even longer.

The banks consider the building industry to be a productive sector, and as such they may be willing to negotiate loans to entrepreneurs at an interest rate as low (in the Ghanaian context!) as 26 per cent.

Entrepreneurs may be thus considered if they fulfil certain criteria:

- good collateral;
- all certificate payments made to the bank not directly to the entrepreneur;
- good cash-flow planning;
- good book-keeping;
- "key-person" status.

"Key-person" status occurs when the bank considers a man or woman who is either running the company or holding a high position in the company to be "virtually indispensable and of superior management capabilities". The bank may then be prepared to arrange life insurance for the "key-person" as a form of collateral, with the company paying for the policy.

Banks may be prepared to lend with no collateral provided that the entrepreneur has a good track record and is considered by the bank manager to be a good risk. This selective process is

obviously made on the personal merit of the entrepreneur. The fact that the entrepreneur may be described as an honest person bears little weight with the banks since they will not knowingly lend to the dishonest!

Banks will provide advice to entrepreneurs on basic book-keeping and cash-flow analysis if required. Many Ghanaian banks have accountancy services which they may be prepared to extend to certain clients for an extra charge.

Loans to groups, consortia or associations would be considered by banks, once again each one on its own merit.

So what should the entrepreneur do? Here are nine suggestions:

1. Entrepreneurs should always keep a neat, simple, up-to-date set of books to show the bank manager. To this end, ILO workshops will discuss the basic accounting needs of the small-scale entrepreneur, and accountants will participate to advise on, and demonstrate the use of receipt, purchase, sales and cash-books, ledgers and trial balance. The workshops will be followed up with practical advice on how to set up a book-keeping system.
2. Entrepreneurs are advised that a simple cash-flow analysis of a contract presented to a bank manager will go a long way toward getting a loan. This ILO workshops will discuss the meaning of cash-flow, and entrepreneurs will be helped to draw up a simple cash-flow analysis, for presentation to a bank manager.
3. The entrepreneur should establish a good track-record before going to ask for a loan. Collateral may not then be required.
4. The entrepreneur should build a reputation for integrity and reliability. In the long run, these qualities are considered by the bank to be the most important collateral that an entrepreneur may have.
5. If entrepreneurs wish to form partnerships with others in order to win a contract, banks may be prepared to grant them a loan, but each case must be taken on its own merit.

-
6. The Contractors' Association (CEBCAG) should approach the banks to see which would give the most advantageous lending arrangements to their members, on the above bases. They should stress the fact that the dishonest entrepreneurs have been "weeded-out" of the Association by its own members.
 7. If the entrepreneur is experiencing problems seeing the bank manager then that person should report these problems to CEBCAG. Bank managers are not as difficult to see as one may think, provided clients are genuine and well prepared.
 8. Future ILO workshops should include discussions on funding a contract or job. A bank manager should participate to advise entrepreneurs.
 9. Entrepreneurs should always be frank, honest and open with bank managers.

OBTAINING PERFORMANCE BONDS

Problem 28

Road contractors are restricted to the State Insurance Company (SIC) for obtaining performance bonds for Government contracts. The SIC requires the contractor to put up collateral for the performance bond, but the banks also require collateral for the loan which the contractor usually needs to finance the contract.

Explanation and possible solution

There are no doubt good reasons why the State Insurance Corporation should be nominated, one of which may be that the contractor is offered better terms than a private insurance company could. It is also possible that the Government has more confidence in SIC when it comes to honouring performance bond obligations. There may be other ways that a contractor can take out a performance bond without putting up collateral, but they are not as satisfactory and are usually costly.

It is recommended that:

1. The proposed IYCB workshops include a section on performance bonds, and organise participation and counselling by a representative of SIC.
2. Since another problem with performance bonds seems to be that the entrepreneur is also required to make bond arrangements prior to submitting the tender (the "bid-bond") the whole system of obtaining bonds becomes even more complicated and makes the need for a specialist workshop even more necessary.
3. The Ministry of Works and Housing should investigate the necessity of a "bid-bond" and see whether it can be dropped.

SITE OPERATIONS

Problem 29

Short measures given on cement supplied in bags.

Problem 30

Takoradi local clays are good, but locally made bricks are poor quality. Bricks have to be imported from Accra.

Problem 31

Stone from a local quarry has been nominated for Government contracts in the Takoradi District, but it is very expensive and there is no alternative.

Explanation and possible solutions

These are the type of challenges that will always be around and should be met by the contractor.

The "short measure" problem seems to be a national one and occurs due to the peculiar system of cement supply arranged by the manufacturers, that if the price of cement goes up they do not alter the price of a bag of cement but supply less in the same size bag. The only way an entrepreneur can check is to weigh every bag, and since the supply of cement is dependent upon

no matter what imported clinker there seems to be little alternative to this method of supplying customers.

The quality of bricks, blocks, etc., is reliant upon quality control by the manufacturer. The ILO workshops will deal with this, but it is up to the individual entrepreneur to insist that the quality of building materials be improved.

The stone has probably been nominated because of its high quality. If an entrepreneur can find a suitable alternative stone and have it tested at a soils laboratory (at no expense to the client) then it can be offered as an alternative, provided it matches the quality of the stone from the original quarry.

It was recommended that:

1. CEBCAG discusses the problem of cement supply with the cement manufacturers.
2. The workshops include a section on quality control for small-scale manufacturers of building materials.
3. The Takoradi Contractors either increase their prices for concrete works or locate another quarry with a similar quality stone.

QUALITY CONTROL

Problem 32

On-site testing by consultants is inadequate e.g. no slump tests or test cubes taken on concrete. Work is then condemned at a late stage. (Aggregate testing is done in a laboratory and the consultant supplies supervisors at the time of pouring concrete.)

Problem 33

Contractors are unfairly blamed for storm damage to finished buildings.

Problem 34

There is no system established for examining faults as they occur in buildings, etc., to decide why there is a fault. (Design? Construction? Materials?)

Problem 35

Individual consultants remain too long in one district or region. The entrepreneurs feel that they should work on a revolving schedule.

Problem 36

There are not enough regular meetings between contractors, consultants and clients.

Explanation and possible solutions

These problems boil down to a lack of communication at site level. The entrepreneur should be able to solve this in several ways, but it is essential that communication between all parties are established at the planning stage. Contractors should insist on regular site meetings when all problems can be tackled as they occur. Contractors must also insist on regular inspections by the consultants' representatives, all entrepreneurs should keep records and have them countersigned by the consultant whenever necessary.

It was recommended that:

1. The ILO workshops include sections on:
 - the client-consultant-contractor relationship;
 - record keeping;
 - problem solving and decision making;
 - contract law and claims;
 - quality control on building sites.
2. Consultant' site supervisors be invited to attend and participate in the workshops.

AVAILABILITY OF PLANT

Problem 37

There is a lack of small plant and equipment among the entrepreneurs.

Problem 38

The Government plant pool should decentralise their hiring yard from Accra to regional centres.

Explanation and possible solutions

The problem is that entrepreneurs have a need for small plant but cannot afford to buy it themselves. This is a challenge that can be taken up by CEBCAG, with some assistance from the IYCB project. The solution is not decentralisation by the Government Plant Pool. There are probably enough entrepreneurs registered with CEBCAG to justify them organising their own plant pools, at regional centres. At the same time, the possibility of establishing a pool of steel pan formwork, adjustable props and scaffolding should be investigated in order to cut back on the use of natural resources in the form of timber, which is presently used for almost everything.

The recommendations were:

1. That a short-term consultant be given the task of advising CEBCAG on organising plant pools in the regional centres, and steel pan shuttering, adjustable prop and scaffolding hire pools too. CEBCAG would be assisted in forwarding a request to a donor.
2. That the proposed IYCB workshops include sections on plant scheduling, utilization and productivity.

LACK OF SKILLED LABOUR

Problem 39

There is a shortage of skilled artisans in the Northern Region to such an extent that skilled sub-contractors can demand payment

before work is completed. Some even demand payment before starting the job.

Explanation and possible solution

The entrepreneurs should try motivating the sub-contractors in other ways to give them the opportunity of earning extra money. The ILO workshops cover these aspects through its sections on productivity improvement, supervision, and motivation of manpower.

MANUFACTURERS' PROBLEMS

The following problems are peculiar to the small-scale manufacturers of building products:

Problem 40

Established workshops are being demolished before new workshops have been built and allocated, and even then the land allocated for proposed workshops is often too small in area.

Problem 41

The Small-Scale Manufacturers' Associations are not informed when jobs are given out to tender. They feel that they could pass valuable information on to the Contractors' Association.

Problem 42

Woodworkers would like to retain some of the timber that is presently exported. They would like to export finished material made of this timber, but they realise that their present manufacturing standards are not up to those required by the export markets. They would also like to improve the quality of the finished building materials that they supply to the building contractors. The woodworkers feel that there are not enough vocational training facilities available at present to enable their carpenters and joiners to improve their work.

Problem 43

The concrete block makers feel that there should be special courses available to them to improve the quality of their products.

Explanation and possible solutions

The problems of the untimely demolition of workshops and land allocation are policy-related and therefore beyond the scope of the ILO project, but the training sessions will deal with site layout, which will help the entrepreneurs in re-organising their workshops on smaller allocated areas.

The problem of the lack of information passed on to the Small-Scale Manufacturers' Association is once again one of communications links with CEBCAG. A letter to CEBCAG from the other associations explaining their requirements should help, but follow-up is an essential requirement to keep these newly established lines of communication open and effective.

The feeling among the small-scale manufacturers that their needs may be overlooked is understandable but unwarranted. The practical format of the proposed workshops will provide ample opportunity to discuss personal views, situations and problems. Although the two groups have many common concerns, there are also important differences which should influence the design of the proposed ILO workshops. They will be mixed with contractors into "Action-Learning Groups" with about 4 people in each group, so that each obtains knowledge of the other's problems, in order to encourage greater cooperation between them.

The recommendations were:

1. That CEBCAG establish communications with the other entrepreneurs' organisations, e.g. the Small-Scale Carpenters' Association (SSCA) and the Association of Block Makers (ABM).
2. That the proposed IYCB workshops include sections on site layout and take into consideration the special needs of the small-scale manufacturers of building products.
3. That a short-term consultant be appointed to investigate the special needs of the small-scale carpenters. This person should have prior expert knowledge of the Ghanaian reserves of timber, present forestry projects, the logging and milling of timber, and the scope for export of timber products.

GETTING PAID

Problem 44

"Bureaucratic" delays drastically affect payments and cost the building contractor a lot of money in non-recoverable overheads. The small-scale suppliers are also affected by this.

Explanation and possible solutions

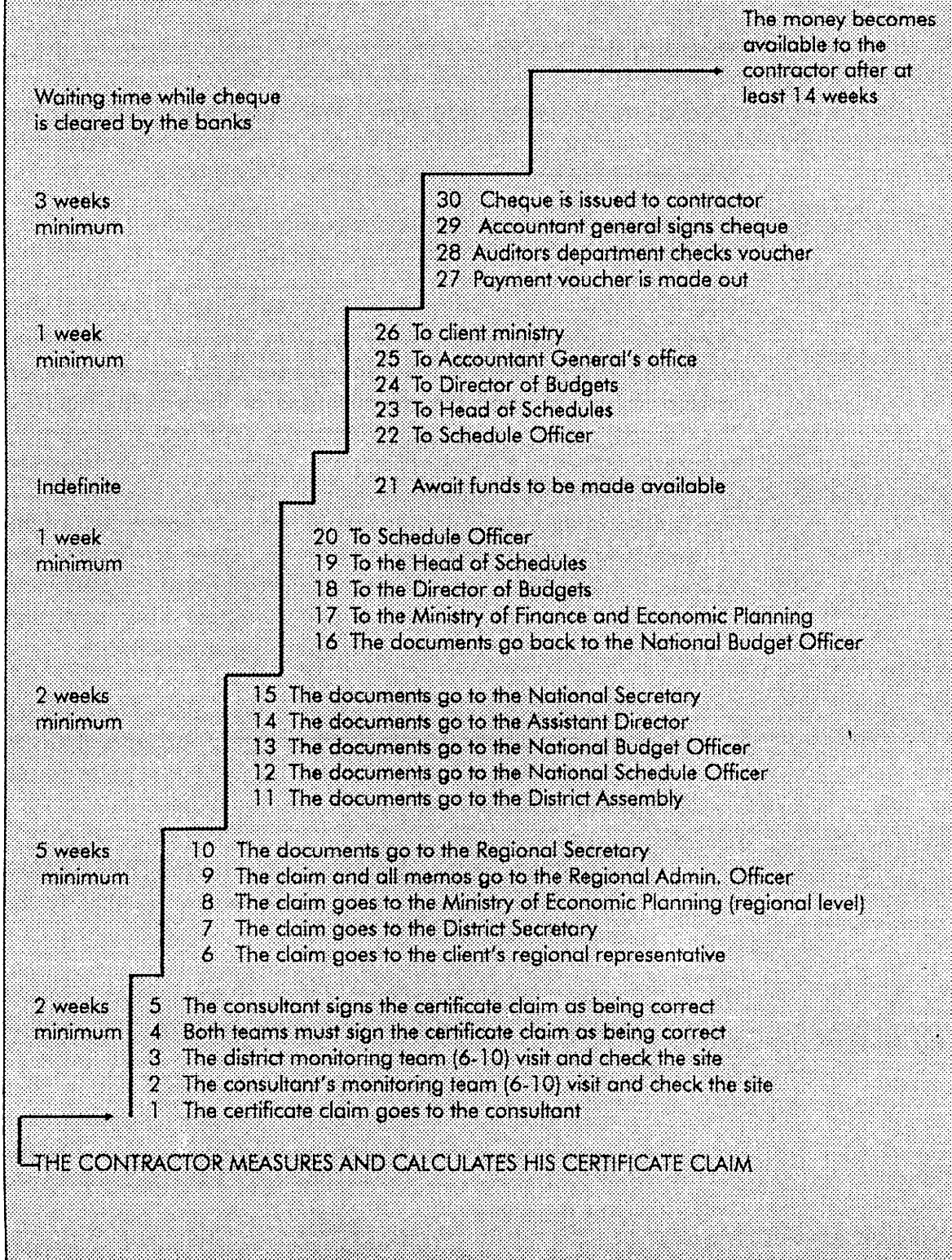
This is without doubt the most serious and difficult problem that Ghanaian entrepreneurs are faced with. The ILO project team feel that if this problem is not addressed and positive steps taken toward solving it, then the effectiveness of the whole "Improve Your Construction Business" Programme will be considerably reduced.

The entrepreneurs were unanimous in their condemnation of the bureaucratic system and the number of steps to be climbed before they receive their cheques in settlement of certificate claims (see diagram on next page). Amongst their particular complaints, three of the most unacceptable practices were:

- The building contractors say that they often have to pick up the Consultant's Monitoring Team and take them to the sites themselves. Expenses incurred are often borne by the contractor (step 2).
- The building contractors also claim that the District Monitoring Team has also to be conveyed to the sites in the same way (step 3).
- Funds may be moved to other, more urgent projects, leaving the building contractors waiting until further funds can be budgeted back to their original projects. While the building contractors realised that this is often unavoidable and in some cases necessary, they still have to pay their monthly interest on their bank loans. This period can stretch to six months and even more in some cases (step 21).

It should be noted that the entrepreneurs were not critical of central government — on the contrary they are totally supportive

DIAGRAMMATICAL REPRESENTATION OF THE BUREAUCRATIC SYSTEM PROCESSING A SMALL-SCALE BUILDING CONTRACTOR'S CERTIFICATE CLAIM AND PAYMENT



Small-scale contractor's claim and payment procedure

of the Government's decision to accord the construction sector a pivotal place in their Programme of Action to Mitigate the Social Cost of Structural Adjustment (PAMSCAD) and the Economic Recovery Programme (ERP). They are also ready and willing to participate in Government's policy to improve and upgrade entrepreneurs.

Their criticisms are of the bureaucratic process and the costs to themselves in time, travelling and hotel expenses, interest on bank loans, loss of productivity due to prolonged absences from the site, lack of cash-flow, inability to plan finances due to lack of continuity in certificate payments and money paid out in "unrecoverable costs". In order to properly understand this problem it is necessary to elaborate a little, referring to the diagrammatical representation of the bureaucratic systems for processing a claim and payment.

It is particularly noticeable that, although they have overall responsibility for the management of the construction industry, the Ministry of Works and Housing has little or no say during the processing and payment of certificates. To quote once again from *Foundations for Change* which deals on page 59 with the Implementation Unit of the Ministry of Economic Planning:

"Although the prospects of improving feedback into the planning process held some attractions, the effect was to introduce yet another bureaucratic step into the already cumbersome contract payments procedure. The procedure is that officers of the Ministry have to confirm by actual physical inspection the stage of construction shown on interim payment certificates before the Regional Commissioners sign them. The effect is to put economic planning officers (who have no training in construction) into supervisory positions over professional construction consultants."

During the whole protracted payment period the entrepreneur finds it necessary to travel to district, regional and national centres in order to "chase" the certificate claim through the system. The entrepreneur often has to travel in from remote areas, incurring considerable travelling and hotel costs. The site production will drop during this period unless a competent supervisor can be found to take the place of the entrepreneur, with the resultant additional cost. A lot of money is also spent in extra "unrecoverable costs" incurred along the way, in an effort

Editorial: Reorganising the AESC (from the Ghanaian Times, Wednesday, June 6, 1990)

The Architectural and Engineering Services Corporation (AESC) was set up in 1973 to provide consultancy services to government, quasi-government and private organisations with regard to building projects.

The importance of this organisation cannot be over-emphasised. However, in the 17 years of its existence, the corporation's performance generally has not been anything worth writing about. Naked and downright mismanagement, self-seeking and dishonesty resulting in diversion of lucrative consultancy jobs to private firms, inefficient handling of contracts, lack of proper supervision of projects and other unprofessional practices had threatened to destroy the organisation.

It still beats the imagination of the public, why, in spite of its array of top level architects, engineers and quantity surveyors, the corporation continues to struggle to exist.

Against such an uninspiring background, it is very reassuring to learn that the new management has initiated a credible work programme aimed at putting the corporation on a pedestal of efficiency and professionalism in its operations.

We are particularly happy to note that the management plans to increase its supervisory role over its staff to ensure honest and efficient discharge of responsibilities.

The performance of regional consultants and quantity surveyors of the AESC - who in the past had behaved as if they were islands unto themselves - should be checked rigidly to put an end to the negative business of shoddy work.

While agreeing with management on the introduction of incentives to reward hard work, Ghanaians want to see a situation where management would punish wrong-doers and lazy staff as well. It is only through this that sanity would be made to prevail, otherwise the adventurous ones would always experiment with their dubious schemes to the detriment of the nation.

The modernisation programme of the corporation as outlined by the new management, particularly of the Geotechnical Department as regards the procurement of equipment for soil and material testing, should be given every serious attention, especially at this time when people have become very much aware of the dangers of earthquake. The Department would be expected to play a very important role in determining the right types of soil and building materials for projects.

It is obvious that the problems of AESC cannot be solved by the management alone and therefore, we urge the sector ministry, Works and Housing, and the Ministry of Finance and Economic Planning to give it the necessary support.

Consultancy work generally is known to be a lucrative business, and if one-man firms are making huge profits from their operations, why can't such a giant like AESC?

From all indications, the present management appears to have grasp of all that militate against viability of AESC and should be able to turn it around.

to speed up payment. There are also the costs incurred by the Government in paying the wages of all the civil servants involved in this exercise — a conservative estimate would be 50 Government employees (including clerks to the signatorial officers).

It would therefore be to everybody's advantage if the system could be simplified. To quote the entrepreneurs:

"The system is too cumbersome. What is the use of us learning about cash-flow, site productivity, site costs, overheads and all these management aids, when we have to wait so long for our money and spend so much time chasing our claims when we should be on our sites?"

The responsibility for changing the system would appear to lie jointly between the Ministry of Finance and Economic Planning, and the Ministry of Works and Housing. It appears that the Central Government plans to streamline the civil service, so any change in the present system of certificate approval and payment should support their strategic objectives.

Also, any move to lighten the load of overburdened civil servants should be welcomed, so that they could be released for other tasks. The box on the previous page contains an editorial about "Reorganising the AESC" and it is encouraging to note (para. 5) that "the new management has initiated a credible work programme aimed at putting the corporation on a pedestal of efficiency and professionalism in its operations".

There are several possible solutions to the problem of delayed settlement of certificates; some entrepreneurs advocate a return to the decentralisation of payments to the regional offices, since this would cut out their exhaustive journeys to Accra. Others point to the method of measurement, certification, claiming and payment developed by the Highways Department, in which road contractors usually get paid within 30 days of certification.

A suggestion has also been made that the Ministry of Works and Housing handle all payments made to the entrepreneurs, without involving the client ministry. A further suggestion that AESC be given the responsibility of "chasing" the certificate payment was turned down by the entrepreneurs as impractical. Judging on the basis of the editorial quoted above, one can appreciate their reasons for scepticism.

The ILO Team came up with five recommendations.

1. That the client ministries warrant funds to the Ministry of Works and Housing.
2. That the certified claim presented by the contractor be passed to the Ministry of Works and Housing for processing by the Accounts Department.
3. That the processed and certified claim be passed to Ministry of Finance and Economic Planning for payment.
4. That a meeting be organised between the Ministry of Works and Housing and the Ministry of Finance to discuss ways of streamlining the certificate measurement and payment process. It should be possible to invite representatives of the Contractors' Association, CEBCAG, to attend. The IYCB Project Team could assist if required.
5. Future training workshops for entrepreneurs should attempt to develop the skills that contractors need in order to prepare their own certificates, so that they can be rapidly and easily checked by the consultant's staff.

TRAINING NEEDS IDENTIFICATION

3

As explained in the ILO book *Training contractors for results** not all of a small contractors' problems can be solved by training. But many can, and a first step was to prepare and send out a questionnaire based on 42 possible topics in 6 broad categories, supplemented by face-to-face discussions with fact finding workshops in Accra, Takoradi, Tamale and Kumasi.

Out of 182 questionnaires distributed to entrepreneurs, 95 were completed and returned to form the test sample (Accra 33 out of 57, Kumasi 27 out of 35, Takoradi 7 out of 25, Tamale 28 out of 55).

As shown in the following table, Ghanaian construction entrepreneurs saw a "great need" for training and management development in all 42 topics, followed at a distance by "some need". The "small need" and "no need" columns show a very small percentage of the overall figure.

The only topic not included in the questionnaire which emerged as an additional need was the question of how to obtain performance bonds.

* Tor Hernes: *Training contractors for results: A guide for trainers and training managers*, Geneva, ILO, 1988).

Training Needs Assessment (95 responses, response rate 52 per cent)

Subject	Great need	Some need	Small need	No need
Estimating and tendering				
1. Why the site should be inspected before pricing the job	72	12	2	9
2. How to read and understand plans. How to measure and take levels on a small site	61	19	7	8
3. How to prepare simple plans for a building or job	50	24	7	14
4. How to "take-off" drawings to find out the quantities of materials required for the job	74	9	6	6
5. How to calculate labour costs	60	20	9	6
6. How to calculate plant costs	55	22	12	6
7. How to calculate materials costs	59	20	9	7
8. How to calculate transport costs	52	22	11	10
9. How to calculate other costs and overheads				
10. How to submit a properly prepared quotation in a professional way	74	12	5	4
Project planning				
11. How to work out rates to be used for calculations (allowables)	63	20	4	8
12. How to draw up bar charts	55	22	11	7
13. How to draw up labour schedules	55	26	8	5
14. How to draw up plant and transport schedules	54	24	9	8
15. How to draw up material schedules	55	25	9	6
16. How to check on progress	62	20	6	7
17. How to stop delays on the work	66	16	8	5

Subject	Great need	Some need	Small need	No need
Productivity				
18. How to improve methods of working	63	22	6	4
19. How to achieve a more efficient site layout	61	24	5	5
20. How to improve on site activity	50	29	11	5
21. How to improve productivity	70	14	6	5
22. How to achieve more effective site supervision	65	16	9	5
23. How to go about solving problems	60	18	10	7
24. How to go about making difficult decisions	56	17	8	14
Book-keeping and money management				
25. How to go about funding a job or contract. How to deal with banks	76	12	1	6
26. How to organise the "cash-flow" in your business	71	14	2	8
27. How to measure work and prepare and present payment certificates	65	16	6	8
28. How to recover the costs of overheads. How to find the causes of loss or profits	64	18	5	8
29. How to claim for additional costs when presenting certificates	70	13	1	11
30. How to compare the costs on a job and cut them by using other methods of work	60	20	8	7
31. How to store materials properly in order to save on waste, theft and damage. How the supplier and the builder can work together to help each other	58	23	3	11
32. How to organise and keep a simple set of accounts	51	22	12	10

Subject	Great need	Some need	Small need	No need
Contract law, claims				
33. Understanding and using a standard contract to get a fair deal	68	22	2	3
34. How to use a working rule agreement as applied to the client-contractor-consultant relationship	66	21	6	2
35. How to draw up a labour contract that is fair to both employer and employee	60	26	7	2
36. How to read plans and specifications along with a contract. How to find and use "Loopholes". How to go about changing a contract to get a fair deal	61	23	9	4
37. Claiming for extras through variation orders, site instructions, and site daywork records. How to draw up and present a claim to the client in a professional manner	73	15	2	5
General Information				
38. How to go about marketing and selling your product or your company's services	53	19	14	9
39. How to control the quality of your products to achieve a high standard. How to control your building standards	64	20	5	6
40. How to use locally available materials in your product. How to adapt local materials to your building standards	58	25	8	4
41. How to increase output by improving the safety of your yard or site. How to cut time-loss by your employees by improving their working conditions	61	22	7	5
42. How to create a healthy and accident-free working environment	62	20	10	3

TRAINING STRATEGY

4

Introduction

The Project Team has the remit to develop an "Improve your Construction Business" kit, consisting of a handbook and a workbook for quick reference by the entrepreneurs and training manuals and a trainers' guide for use in courses. The assessment of contractors' practices and problems, and the training needs survey were the essential first steps towards devising a training strategy for the achievement of these goals. Overall, it was clear that the training need was great, and the main problem for the Project Team was to devise a way to cover all the varied topics in the limited time available for the preparation of training materials.

Review of existing training material

The Project Team started by reviewing the material that was already available, of which the most relevant items were:

1. *Management Improvement Manual for Small Scale Construction Firms in Ghana* (Building and Road Research Institute. Council for Scientific and Industrial Research, University, P.O. Box 4, Kumasi, Ghana). This manual of 166 pages was seen as a valuable work of reference, but probably too complicated for the project's target group.
2. ILO *Improve Your Business* (IYB) Handbook and Workbook. The team found the layout useful, but felt that it would be necessary to develop new material to suit the specific needs of the sector.
3. ILO *Modular Programme for supervisory development*. This programme in five volumes of 34 modules was seen as a valuable general reference work, but again as too general and too complicated to meet the needs of the target group.

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4. ILO *Interactive Contractor Training* (ICT) — Modules 1-3. This appeared to be the most suitable of the "ready-made" material, and the team decided to follow the highly participatory approach which the ICT format encourages, but to prepare their material in a more simplified form with more practical exercises.
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Action learning

In keeping with the ICT approach, IYCB workshops will be strongly result/action oriented with little formal lecturing, and heavy use will be made of "action learning" groups to discuss problems and tackle them as case studies. The training sessions will be supported with advisory visits to sites by Counsellors chosen by CEBCAG and trained by the ILO project team (as and when requested) and business clinics at Regional Centres. Every opportunity will be given for entrepreneurs to get together and tackle their problems as a group.

Bidding model

Entrepreneurs will also be able to develop their own reference material on Estimating and Tendering (a complex and crucial process, which is crucial to the success of a building contractor as it determines the "price list" for the whole contract). Each participant will produce a "model" of the bidding process to suit his or her own business environment, based on the following steps:

1. From the measurements and notes taken the entrepreneurs will:
2. Prepare their own simple working drawings and site layout leading to:
3. Producing a basic set of standard specifications and:
4. A simple contract. The working drawings produced in 2 above will then be used to:
5. Prepare a list of quantities which will form the basis for:
6. Calculating direct project cost, leading on to discuss:

7. Indirect project costs which can now be estimated, and finally:

8. A quotation.

Module titles

This quotation is then carried forward to the planning stage, emphasising continuity and the need to get the best use out of prepared data using an easy and fast reference system. With this in mind, the draft module titles proposed are:

1. Estimating and tendering;
2. Project planning;
3. Productivity;
4. Book-keeping and the management of money;
5. Contract law (including claims);
6. Business management (marketing, sales, quality control, safety and health, the needs of the industry, etc.)

Since there are few works of reference on the training needs of small domestic contractors, a draft list of topics is attached as Annex 1 for the guidance of those involved in the preparation of training programmes elsewhere.

Training workshops

The Ghana project team will be arranging training workshops throughout the country, since there are 10 regions, each with its own special problems and peculiarities. CEBCAG have established Regional Committees in each Regional Centre, so it will be possible to have one Trainer/Counsellor available in each Region.

Training delivery

Once the initial investment in the preparation of training material and training of trainers is in place, the pay-off in terms of training delivery and consequent improved performance will be impressive. For example, if each training workshop were to consist of 20 entrepreneurs (5 "action-learning" groups of 4 per group), then a total of 200 owners/managers of small-scale construction enterprises in Ghana will receive IYCB training by the end of March 1992 (50 more than anticipated in the project document). On a more optimistic assumption, if it proves possible for the trainers/counsellors based in neighbouring regions and the MDPI trainer/counsellor responsible for those regions to organise joint workshops, and if they could cope with the additional work load, then the number of entrepreneurs trained could be as high as 400, before the end of March, 1992.

This Information Paper seeks to provide guidance to those with an interest in the development of domestic small-scale construction enterprises, and helping them to break free of the constraints that limit their scope to provide an effective service to their clients and worthwhile employment opportunities to their staff.

As noted in chapter 3, only a part of any problem is caused by lack of management skill, and only part of that lack can be made good by training. However, inadequate (or non-existent) construction management training seems to be at the root of many of the problems faced by these enterprises, in Ghana as elsewhere. This means that construction management training should be viewed as an investment, which pays off for contractors and their clients in terms of improved site productivity, lower project costs and finished work of improved quality (implying reduced maintenance costs).

The authors and the Project Team hope that this Information Paper will encourage other countries to initiate their own "Improve Your Construction Business" projects, and that its contents will provide useful guidance on the questions to ask and the training methodology to adopt.

ANNEX

IYCB Ghana — Draft list of training topics

Module 1 — Estimating and tendering

(16 stages)

1. Contractual relationships

Relationships between the client, the consultant and the contractor, using local examples.

2. Site inspection

A visit to an open plot of land, basic measurement and estimating levels, notes on features, problems that may be encountered.

3. Working drawings

A discussion on their preparation, site layouts, services, foundation conditions, available materials.

4. Practical work

Prepare simple working drawings and site layout using information obtained at stage 2 (site inspection). Emphasise using local materials available from local manufacturers.

5. Standard specifications

A discussion on the use of standard specifications, using those documents presently available in Ghana. Reading drawings in conjunction with standard specifications.

6. Practical exercises

Produce a set of standard specifications based on local knowledge and working drawings prepared at stage 4.

7. Practical exercise

Produce a simple contract of work between client/builder/supplier.

8. Taking-off

A discussion on the method of taking-off quantities from drawings, why quantities are set out in a tabular form (as in bill of quantities), the advantages of having a job breakdown.

9. Practical exercise

Prepare a list of quantities by taking-off quantities from the working drawings prepared at stage 4.

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10. Direct project costs

A discussion on:

labour cost
plant cost
material cost
transport cost.

How to calculate them, how to prepare the estimated unit cost per item.

11. Practical exercise

Prepare direct project costs using the list of quantities produced at stage 9.

12. Indirect project costs

A discussion on:

preliminary costs
risk allowance
company's costs
profit allowance.

How to calculate them, how to use the list of quantities to spread these costs over the whole contract.

13. Practical exercise

Calculate the indirect project costs and spread those costs according to the list of quantities produced at stage 9.

14. Submitting the quotation

A discussion on how best to submit the quotation, accompanying letter/contract/specification, etc. Client's procedures for opening and adjudication of the tender.

15. Practical exercise

Submit a quotation based on previous exercises.

16. Standardisation

How to go about standardising buildings and using local materials in their manufacture. Discussion on what the entrepreneur can do to encourage the use of standardisation and modular construction in the private sector? Discussion.

Module 2 — Project planning (15 stages)

1. Revision

Review module 1 "Estimating and tendering". Use course workbook and check for easy reference. Discuss practical applications that may have occurred.

2. Allowables

Discussion on labour and other constants or "allowables". Using the quotation to calculate "allowables".

3. Practical exercise

Using the quotations submitted at stage 15 of "Estimating and tendering", calculate a set of "allowables" for labour, plant and transport.

4. Bar charts

Discuss programming by bar charts, using "allowables" plus experience, practical knowledge and common sense.

5. Practical exercise

Prepare a bar chart using all information available from the "Estimating and tendering" workshop, plus "allowables" calculated in stage 3.

6. Labour schedules

Discuss labour schedules, how to draw up a labour schedule using the bar chart, planned utilisation of human resources.

7. Practical exercise

Draw up a labour schedule using the bar chart produced in stage 5.

8. Plant and transport schedules

Discuss these schedules, how to draw up a plant and transport schedule using the bar chart, planned utilisation of plant and transport.

9. Practical exercise

Draw up a plant and transport schedule using the bar chart produced in stage 5.

10. Material schedules

Discuss materials schedules, how to draw up a materials schedule using the bar chart, list of quantities, planning, delivery and storage periods.

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11. Practical exercise

Draw up a materials schedule using the bar chart produced in stage 5, and list of quantities from module 1, stage 8/9.

12. Practical exercise

Using the material schedule, draw up simple contracts between the builder and the local building material manufacturers. Using role-plays, the builders and the local manufacturers should try to work out mutually beneficial arrangements.

13. Checking on progress

Discuss methods of checking the progress of work using the bar chart, record keeping, the use of the site diary. Dealing with project delays. Claims for extension of time. How to get back on programme.

14. Practical exercise

Using the bar chart, develop mini cases in the form of practical situations that might delay the work. Using role-plays, devise ways and means of getting the job back on programme.

15. Practical exercise

Devise a continuation of the work by starting a similar job on another site. Prepare an overlapping programme of work to achieve continuity of labour and plant scheduling.

Module 3 — Productivity (15 stages)

1. Revision

Review and discuss the methods of work decided on at the project planning stage. Use course workbook and check for easy reference. Discuss practical applications that may have occurred.

2. Practical exercise

Visit a site or sites, taking notes of the various operations being carried out.

3. Productivity

Discuss what is meant by "productivity". Examine a selection of work methods, and discuss their advantages and disadvantages.

4. Practical exercises

Review the discussion of work methods, and suggest alternative methods that will improve productivity.

5. Site layout

Discussion on how to achieve an efficient site layout, including arrangements for storage of plant and materials, access, etc.

6. Practical exercises

Return to the site measured in module one. Revise the working drawings prepared in module one, to achieve a more efficient site layout. Set it out roughly on the ground.

7. Site activity

Discussion on site activity. How to minimise double handling of materials, cut down on waste, utilise plant and transport more efficiently.

8. Practical exercise

Re-visit the same site. Suggest methods of improving the site activities based on the above discussion.

9. Improving productivity

Discussion on improving productivity through incentives — bonus payments, piece work, targeting, etc.

10. Practical exercise *

Review the costs and allowables from module 2. Utilise them together with the bar chart and labour schedules (module 2) to work out how time and money can be saved by offering incentive payments.

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11. Supervision

Discussion on supervisory duties, handling labour, liaison with clients, consultants, inspectors, suppliers and the public.

12. Practical exercise

Role playing and action exercises based on the kind of situations that might arise during the job that has been built up through the modules. Use all information gained during previous practical exercises.

13. Problem solving and decision making

Discussion on methods of problem solving and decision making, based on mini cases proposed by the participants.

14. Practical exercise

Role playing and action exercises on problems likely to occur in the daily life of a typical jobbing builder or manufacturer of building materials.

15. Evaluation and follow-up

Discussion on these aspects of the modules covered to date. Establishing a follow-up procedure. Drawing up evaluation guidelines.

Module 4 — Book-keeping and

the management of money (16 stages)

1. Source of funding

Discussion on funding a job or contract. Include a bank representative in the group for advice. Role-plays dealing with the situation. Explanation of banking terms.

2. Cash-flow

Discussion on the meaning of cash-flow. Monthly financial reviews for the small business. Using the bar chart to estimate outlay required.

3. Practical exercise

Using the material prepared in modules 1, 2, and 3, prepare a chart for the job, showing costs over the period of the job.

4. Certificate payments

Discussion on preparing and presenting a payment certificate. Measurement of work. Covering direct project costs.

5. Practical exercise

Using the material prepared, draw up a chart showing basic certificate payments estimated over the period of the job.

6. Profits

Discussion on methods of recovering indirect project costs. How profits can be affected. Causes of loss of profits.

7. Practical exercise

Using the calculations done for module 1, stage 12/13, show how the job can cover the indirect project costs and come out with a final profit. Distribute the profit among the monthly basic certificate payments so as to show anticipated monthly profit.

8. Additional certificate payments

Discussion on retention (payments and release), materials on site, preliminaries.

9. Practical exercise

Using the material prepared so far in this module, work out the amount of retention deductions, and when they should be repaid. Calculating claims for materials on site. Transfer some of the indirect project costs into a "preliminaries" claim.

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10. Comparative costs

Discussion on the comparative costs of labour to plant: Hourly, daily, contract, casual or sub-contract labour. Buying or leasing plant. Scope for re-use of site offices and storage sheds.

11. Practical exercise

Apply the points brought out in the discussion to the model job that has been built up throughout the training workshops, using the data and materials that have been prepared during the workshops.

12. Materials

Discussion on deterioration of materials through lack of good storage facilities. Theft, breakage and waste. Late or early deliveries. The need for co-operation between supplier and builder.

13. Practical exercise

Work out practical ways of dealing with problems regarding materials, using the new site layout, design, etc. prepared in module 3, stage 6. Work out role-plays dealing with problems, e.g. between supplier and builder.

14. Book-keeping

Discussion on the basic accounting needs of the small-scale entrepreneur. Include an accountant in the group for advice. Demonstrate receipt book, purchase books, sales books, cash books, ledger, trial balance.

15. Practical exercise

Each entrepreneur sets up a book-keeping system for his company, with an accountant's guidance, using any or all of the methods discussed.

16. Performance bonds

Special workshop on obtaining bid and performance bonds. A representative of the State Insurance Corporation will be invited to attend.

Module 5 — Contract law (including claims)

(13 stages)

1. Revision

A "book-keeping clinic" in which the book-keeping practices learned in module 4 are discussed, and the participants can bring their own accounts to obtain advice from a financial specialist.

2. Conditions of contract

Discussion related to the standard conditions of contract, including the respective responsibilities of contractors and suppliers.

3. Practical exercise

Review the standard conditions of contract, emphasising those sections of particular importance to the small-scale entrepreneur.

4. Working-rule agreement

Discuss the meaning of a working-rule agreement. Why is it necessary? How does it affect the client-contractor-consultant relationship discussed in module 1, stage 1.

5. Practical exercise

Using role-plays and the contract drawn up in module 1, stage 7, draw up a working-rule agreement between the three parties. Include the role of the clerk of works.

6. Labour contracts

Discussion on the purpose of labour contracts, and their effect on contractual procedures.

7. Practical exercise

Based on the labour schedule prepared in module 2, stage 6/7, draw up a standard labour contract to be used on this job. Refer to discussions on incentive payments from module 3, stage 3/10.

8. Understanding a contract

Discussion on how to "read" a contract. Legal terms. Reading the plans and specifications with the contract. Identifying "loopholes" and discrepancies. Contract variations.

9. Practical exercise

Review the contracts, plans, specifications and working-rule agreements prepared during the workshops. Identify "loopholes", and change the documents to arrive at an arrangement which is more equitable to all parties.

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10. Claims

Discuss the best ways of formulating claims. Record-keeping, site instructions, variation orders, extras, daywork, overheads, arbitration.

11. Practical exercise

Using role-plays and information gathered during the practical exercises in previous workshops, draw up a series of claims relevant to the job.

12. Practical exercise

Each participant to bring the claims they feel are genuine. Open them up to general discussion and constructive criticism. Formulate the claims in a professional manner for presentation to the client.

13. Evaluation and follow-up

Discussion on these aspects of the modules covered to date. Establish a follow-up procedure. Drawing up evaluation guidelines.

Module 6 — Business management (8 stages)

1. Management

General management principles; management objectives; organisational structure; office work.

2. Marketing and sales

Discussion led by a marketing specialist. Promotion and advertising, distribution, sales records, payment and credit.

3. Practical exercise

Action exercises and role-plays on marketing problems, adapted to the small-scale supplier in Ghana, using actual examples provided by participants.

4. Quality control

Discussion on the reasons for quality control. The role of the clerk of works/site inspector. Methods of quality control. Possible loss of quality when labour incentives are used. Use of local materials.

5. Practical exercise

Carry out some simple tests on samples of locally available materials and products. Suggest ways of improving their quality.

6. Safety and health

Discussion on the need for safety on the site and in the manufacturer's yard. Common types of accidents. Time loss and cost increases. Accident prevention. What to do if an accident happens. Healthy and unhealthy working environments. Improving the health of the worker. Creating a healthy and accident-free working environment.

7. Practical exercise

Visit a site or sites and note the possible unsafe or unhealthy conditions. Suggest remedies.

8. Evaluation

Discussion on the practical aspects of the evaluation and follow-up procedures related to (a) business management and (b) the overall IYCB training programme presented in modules 1 to 6.