

# **MANAGEMENT EDUCATION AND TRAINING FOR REFURBISHMENT WORK WITHIN THE CONSTRUCTION INDUSTRY**

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## **CHAPTER SEVEN**

# **MANAGEMENT EDUCATION AND TRAINING FOR REFURBISHMENT**

## **7.0. MANAGEMENT EDUCATION AND TRAINING FOR REFURBISHMENT**

### **7.1. Introduction**

General management education and training attracts endless volumes of published materials. In the UK, particularly within the last decade, much attention has been focused on the extent to which UK managers were educated and trained.

In 1986, Mangham and Silver (1986<sup>339</sup>) conducted a study of the extent of management training in the UK, by looking at the population of companies that undertake training, and the amount of training. Their study showed that over 56% of UK companies undertake no formal management training, relying mainly on on-the-job experience for managers to learn or do their job. No formal framework is set aside for the training of managers in large numbers of companies. Their study showed that the smaller the company, the more serious the problem. Their study also showed that the lack of management training extends across all types of industries and fails to discriminate in any substantive way between companies in high-tech industries, or the newly formed companies. Within a year of Mangham and Silver's (1986<sup>339</sup>) report, two reports, one by Constable and McCormick (1987<sup>123</sup>) and the other by Handy et al (1987<sup>244</sup>) were published. Constable and McCormick's (1987:12-17) found that most of the 2.75 million managers in the UK lack formal education and training. Their study suggests that Britain's managers lack the development, education and training opportunities of their counterparts. Their study also reveals that the UK has not yet developed any widely used, clearly understood methods of educating its managers.

The study by Handy et al (1987<sup>244</sup>) compared the UK with some of her major competitors, mainly the USA, Japan, France and Germany, in the provisions of management education and training. Handy et al (1987<sup>244</sup>) noted that "the conclusion that British managers are uneducated in business and management terms is inescapable. It must also be true that management training in Britain is too little, too late, for too few". p11

Handy et al further added that "By comparison Britain .... does not appear to take the preparation of her managers as seriously as the other countries". p2

Silver (1991<sup>450</sup>) has referred to this situation of management education and training in Britain as a "crisis" in management education and training.

The aforementioned reports on management education and training stressed the need for more managers to be educated and trained, and that education and training should be seen as a career-long process involving in-company training and external education and training. The need for collaborative actions from employers, government, individual managers, professional and academic institutions was also emphasised.

The necessity of management education and training courses to reflect the needs of managers and organisations both in the general management field (Braddick, 1984<sup>58</sup>, 1987<sup>59</sup>; and Davies and Easterby-Smith, 1984<sup>149</sup>) and in construction (Prosper, 1984<sup>408</sup>; Morley report, 1986<sup>360</sup>; and CITB, 1988a<sup>129</sup> and Ostwald et al, 1992<sup>389</sup>), also received attention in the UK within this last decade.



In the UK construction industry, it was not until fairly recently that greater attention began to be levelled on the content, length, and methods of delivery of management education and training in relation to construction managers needs (Young, 1988<sup>510</sup>; CITB, 1988b<sup>130</sup>, CSSC, 1989<sup>99</sup>; and Duff and Mankin, 1990<sup>169</sup>).

However, the attention and efforts levelled at construction education and training are, in the main, directed at the new-build sector of the construction industry and not at the refurbishment sector (CCMI, 1988<sup>97</sup>; Douglas, 1988<sup>165</sup>; and Young and Egbu, 1992c<sup>517</sup>).

The CCMI (1988<sup>97</sup>) study on 'Market Appraisal for Research on Maintenance Repair and Refurbishment Operations in Construction' recommended that "the curriculum of architects and professional consultants, construction managers and craftsmen need to embrace education and training that relate to the type of work..."  
vol. 1. p13

Similarly, Young and Egbu (1992c<sup>517</sup>) in one of their articles entitled "A need for appropriate manager training and education for refurbishment within the construction industry", emphasised that "... there is now an urgency to establish and identify appropriate education and training both in content and processes for managers involved in refurbishment". p68

This chapter is concerned with management education and training for refurbishment, the objectives being to examine the nature and extent of management education and training, provisions that exist, if any, within refurbishment organisations. Besides this, issues concerning course duration, course timing, place of training and other factors affecting course selection and attendance are duly considered.

This chapter will also examine and establish management education and training needs, both on managerial and organisational levels. An establishment of management and training needs for refurbishment should benefit individual managers, educators, and course designers in the following ways:

- (i) For individual managers appropriate courses based on the needs of refurbishment could help advance career prospects.
- (ii) It should allow educators to advise and also to provide relevant courses for existing managers and those aspiring managers associated with refurbishment.
- (iii) Course designers, educators and those who are associated with the formulation of a national qualification frame work for construction management may wish to incorporate some of the findings of the results in national provisions.

Management education and training needs of managers, as defined by skills/knowledge (job dimensions) will be derived for each level of management. The study will also attempt to identify which sets of skills/knowledge are statistically correlated, that is, which skills/knowledge are distinct and required together, through a process of data reduction. Data reduction will be carried out by employing a statistical technique called Factor Analysis. Factor analysis simplifies an otherwise complex structure, and allows the skills/knowledge that are meaningfully related to be isolated and then grouped together. This procedure is beneficial to course designers in that they can evaluate groups of skills/knowledge that can be taught together from those which are not statistically or meaningfully related.

## **7.2. Definition Of Management Education And Training In The Context Of The Present Study**

In order for the discussion on management education and training for refurbishment to be more meaningful, a working definition is needed for management education and management training in the context of the present study.

It is generally accepted that the objectives of most management education and training programmes are to teach, or improve, various managerial skills and knowledge in order to improve managers' job performance (Koudra, 1975<sup>314</sup>; Wexley and Latham, 1981<sup>494</sup>; Goldstein, 1980<sup>221</sup>, 1986<sup>222</sup>; Wexley, 1984<sup>493</sup>; and Siegel and Lane, 1987<sup>447</sup>). A statement of this sort, however, does not help to distinguish management education from management training.

Several attempts have been made by writers in the field of management training and education to distinguish between the two terms.

Goldstein (1980<sup>221</sup>) views training as "the acquisition of skills, concepts, and attitudes that results in improved performance in all the job environment". p230

The term education has typically been thought of as having to do with "the development of the whole person - socially, intellectually and physically". (Bass and Vaughan, 1966<sup>26</sup>: p73).

In distinguishing training from education, Morris (1971<sup>361</sup>: p33) considers training as the "use of specific learning, often with the use of techniques that can be identified and continually improved". For education, he noted that it is "a broader process of personal change in abilities and attitudes which may take place independently of its application to work".

Other writers have suggested the close relationship between education and training. Koudra (1985<sup>314</sup>) is of the view that management education and training are closely related and that "there is frequently some confusion about the precise meaning of each term". p6. Koudra, also adds that "one view is that management training provides specific knowledge and skills or develops attitudes of direct use to the manager in his present or future job, while management education is concerned with increasing background knowledge of management principles and techniques". p6. However, Koudra further notes that there is no strict adherence to the distinction between training and education. Stone (1982<sup>467</sup>) notes that the "term management

education is often considered to be synonymous with management training". p89.

Bennett (1984<sup>36</sup>) defines training as a "process that is concerned with the acquisition and development of specific skills to do particular activities or jobs" p219. Thus, management training will be geared towards helping a manager carry out a particular function or sets of activities within that function.

Bennett (1984<sup>36</sup>) sees management education as being concerned with the "acquisition and development of knowledge and skill which fits a manager to take on a role in management" p219. Bennett (1984<sup>36</sup>) further notes that management education is more general and broad based than management training, yet "may be concerned with the development of certain skills. It, therefore overlaps with training". p219

From the definitions above, it appears that there is no strict dividing line differentiating management education and management training, although, the definitions would suggest that, in the main, the objectives of training are generally narrower and more specific than those of education.

In the context of the present study management education and training for refurbishment should be understood to mean the following:-

#### Management Education:

Management education for refurbishment is the learning process whereby skills/knowledge for managing refurbishment work are acquired and developed by

an individual, in order to enable him/her to carry out his/her job. This learning process results in formal qualifications up to and including postgraduate qualifications, and also including professional qualifications by examination.

#### Management Training:

Management training for refurbishment is the learning process whereby specific skills/knowledge which are necessary to carry out a particular job dimension, or sets of job dimensions, in refurbishment is acquired and developed. This learning process which may be formal or informal, may not lead to qualifications, and may be obtained at any time during the working career of a manager.

Management education and training for refurbishment should complement each other. Having set out working definitions for management education and training, the next section of this chapter examines the nature and extent of existing management education and training, if any, within refurbishment organisations. It also explores the preferences of organisations and managers for methods and delivery of management education and training.

### **7.3. Provisions Of Management Education And Training Within Refurbishment Organisations**

From the semi-structured interviews, thirty-two training officers were asked if management education and training provision were considered within the overall corporate strategy of their organisation. Twenty nine (90.63%) reported yes (See Table 48).

**Table 48: Management Education/Training As Part Of Corporate Strategy Of Organisation**

	Frequency of response	valid(%)
Yes	29	90.63
No	3	9.37

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The three (9.37%) organisations which did not have management education and training as part of their corporate strategy indicated that a policy of training was under consideration, and that this, would enable education and training to be taken more seriously and also would allow more funds to be put aside for the purpose. These three organisations whose turnover are between £75m and £85m and employ between 450 and 600 people, are comparatively small, and do send their managers only on external courses.

Having established that the majority of the organisations involved in the study considered education and training provisions within the overall corporate strategy of their organisation, it was then necessary to ascertain whether there was any provision made specifically within management education and training for

refurbishment. To this end, the thirty refurbishment organisations were asked if there was any defined management education and training provision geared towards refurbishment, and the length of time that it has been in place within their organisation.

Of the thirty-two training officers interviewed, only two (6.25%) confirmed that they have education/training provisions targeted specifically to the needs of refurbishment management (Table 49).

**Table 49: Management Education And Training Provisions Geared Towards Refurbishment**

	Frequency or response	Valid(%)
Yes	2	6.25
No	30	93.75
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The organisations that did not have any management education/training provision for refurbishment were then asked if there were any reasons for the lack of provisions for management education and training for refurbishment within their organisations.

The following reasons, in decreasing order of importance, were given:-

- (i) "Refurbishment is a specialised area of work and to the best of our knowledge, no external training providers offer management courses geared towards refurbishment. (20 responses)



- (ii) "The managers we recruit are experienced and familiar with refurbishment work, and do not need any further education/training in managing refurbishment work. All that is needed for refurbishment is lots of experience". (10 responses)
  
- (iii) "The budget allotted for management education and training in the organisation is only enough to cater for education in general management for construction. This caters for new build as well as refurbishment work".  
(8 responses)
  
- (iv) "Although, we carry out a substantial amount of refurbishment work, the greater proportion of our work is new build, so our education/training provision is biased towards new build. However, it is fair to say that there is need for education/training geared towards refurbishment, because it is a specialised field and needs specialised education/training". (6 responses)
  
- (v) "Do not see any difference between new build and refurbishment. Management of all construction work is the same and so there is no need for separate education and training". (3 responses)

The two organisations that have made specific provisions for refurbishment are specialist refurbishment organisations with refurbishment work accounting for over 75% of the total construction work that they carry out. The management education/training provisions that exist in the two organisations, and which have been in place for at least five years, are mainly in-house courses that relate to:-

- (i) Materials management, including suitability of materials for historic buildings
- (ii) Specialised contractual arrangements relating to individual historic and complex refurbishment works.
- (iii) Health and safety (with particular emphasis on control of substances hazardous to health).
- (iv) Security (especially in projects, such as M.O.D. buildings, banks, airports and housing projects with tenants in occupation).
- (v) Implications of the Official Secret Acts and relevance to managers (for works in sensitive premises).

The two organisations report that experts are sometimes brought in to supplement their in-house courses.

This result clearly shows that there is little, if any, formal education and training provision for refurbishment within organisations. One way of validating this result is to ask refurbishment managers if they have attended any courses directly geared towards refurbishment. To this end, the twenty managers who participated in semi-structured interviews as part of the current study were asked if over the past two years they had attended any in-house or external management education/training directly geared towards refurbishment (see questionnaire: appendix A).

**Table 50: Attendance Of Management Education/Training For Refurbishment Within The Last 2 Years : Refurbishment Managers**

	Frequency of Response	Valid%
Yes	2	9.09
No	20	90.91

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Only two (9.09%) of the managers (see Table 50) interviewed attended management course directly geared towards refurbishment within the last two years.

These managers are from specialist refurbishment organisations, and the courses they had attended were organised in-house. The main themes of the courses attended were:-

- (i) Management of hazards in refurbishment and how best to cope with them
- (ii) Managing time
- (iii) Health and safety
- (iv) Security
- (v) Materials management
- (vi) Stress management

The author sought to establish if there is any need for management education and training for refurbishment.

Through interviews with thirty-two training officers, it was possible to ascertain whether, for refurbishment organisations, there was a need for management education and training for refurbishment. Interviews with twenty-two refurbishment managers allowed for the perception of managers on the need for education and training for refurbishment to be ascertained.

Through postal questionnaires, managers were also asked how likely they are to attend management education and training for refurbishment if suitable, and relevant management courses were available (see questionnaire: Appendix A).

Out of the Thirty-two training officers interviewed, twenty-nine (90.62%) indicated that there was a need for management education and training geared towards refurbishment within their organisation ( Table 51).

**Table 51: Need For Management Education/Training Geared Towards Refurbishment:- Training Officers**

	Frequency of Response	Valid%
Yes	29	90.62
No	3	9.38

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Only three training officers noted that there was no need for management education and training directly geared towards refurbishment within their organisations. These were the same training officers who noted that they do not see a need for separate education and training, and that management of all construction work is the same.

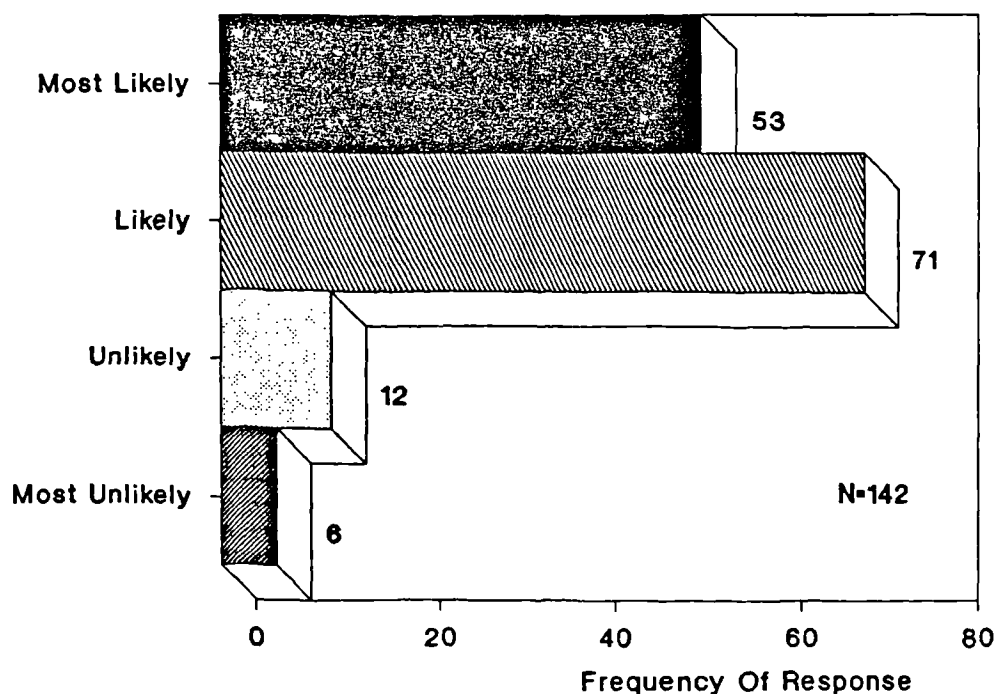
An attempt was also made to ascertain why most organisations indicated a need for management education and training for refurbishment. The responses of the training officers can be grouped into three on the basis of response:-

- (i) Refurbishment is a specialised area and managers need to attend courses that are specifically geared towards refurbishment. (25 responses)

- (ii) The emphasis on management skills and knowledge in refurbishment are quite different from new build. This needs to be considered in the types of courses managers attend. (20 responses)
- (iii) There are skills that are not relevant in new build, but which are extremely important in refurbishment, such as tenant liaison. (18 responses)

Through postal questionnaires, managers were asked how likely they were to attend management education/training courses for refurbishment if suitable and relevant courses were available. One hundred and twenty-four or (87.3%) managers responded that they were most likely, or likely, to attend courses, as shown in Figure 13.

**Figure 13: Likelihood Of Attending Refurbishment Management Education And Training Courses**



In an attempt to validate the views of managers who participated in the postal questionnaire, on the likelihood of attending courses for refurbishment, the twenty-two managers who were interviewed were asked the same question:-

‘How likely are you to attend management education/training courses directly geared towards refurbishment, if relevant and suitable courses are available?’

Of the twenty-two managers, 18 (81.82%) responded that they were most likely, and 3 (13.64%) indicated that they were likely to attend refurbishment courses. Only one manager responded that he was unlikely to attend management courses for refurbishment. Further discussion revealed that the manager was due for retirement at the end of the year.

In summary, the results from this study leaves no doubt that there is little, if any, external provisions of management education and training for refurbishment, testifying to under course provision. Yet, evidence suggests, that for both organisations and refurbishment managers there is an urgent need for appropriate management education and training to satisfy the consumers of a specialised and substantial sector of the construction industry - the refurbishment sector. The challenge, therefore, is for educationalist to bridge the gap in the market place.

Although few educational institutions e.g. Heriot-Watt University, Edinburgh, Scotland, and also the Chartered Institute of Building (CIOB) offer courses in Maintenance Management, contacts made by the present author with academic institutions in the UK, and discussions with educationalists, including the Construction Industry Training Board (CITB) and the CIOB, reveal that no formal

courses exist which are geared towards refurbishment management.

Discussions with the 32 training officers who were interviewed in the present study, reveal that, in the main, their managers (senior, middle and junior) attend general management courses irrespective of whether they are specialist or general refurbishment organisations. Lack of relevant courses for refurbishment is given as the main reason for this.

Having also established that there is an urgent need for courses directed at refurbishment management, training officers were asked if when provisions are made specifically for refurbishment management education and training, within their organisations, whether the format and procedures will differ from the current provisions in general management education and training. All the training officers responded that, apart from the content of the course programmes, similar procedures and methods of current provision within their organisations will apply.

The author further sought to explore a variety of issues concerned with management education and training provisions, and preferences within refurbishment organisations. This approach being adopted on the premise that the practices and methods that are currently employed in the provision of construction management education and training within organisations will equally apply for refurbishment.

An understanding of education/training delivery methods and preferences of managers should help in producing courses that are suitable and relevant to

managers. The following issues concerning education/training methods and practices for refurbishment will be considered:-

- (i) How refurbishment organisations assess the management education and training needs of their managers.
- (ii) How management education/training is evaluated within organisations.
- (iii) Preferences on methods and delivery of education/training from both organisation and manager perspectives.
- (iv) Factors which promote and inhibit management education and training.
- (v) Factors that affect course selection and attendance.

#### **7.4. Assessing Management Education/Training Needs Within Refurbishment Organisations**

It is generally accepted that the first step in any management education/training programme is the identification of the needs of those who are to participate in it (McGehee and Thayer, 1961<sup>351</sup>; Goldstein, 1974<sup>220</sup>, 1986<sup>222</sup>; Durra, 1991<sup>170</sup>; and Bramley, 1991<sup>60</sup>).

The success of the programme depends on the methods and extent of education/training needs being identified (Rossett, 1985<sup>430</sup>; Laird, 1985<sup>316</sup>; Stanley, 1987<sup>460</sup>; Durra, 1991<sup>170</sup>; and Fairbairns, 1991<sup>186</sup>).

The thirty-two training officers interviewed were asked if there were any formal management education/training needs assessment procedures within their organisations.



Of the thirty-two training officers interviewed all assess the management education/training need of their managers either formally or informally, however, twenty-two (68.75%) training officers stated that a formal method of needs assessment are in place, while ten (31.25%) adopt informal methods of needs assessment( See Table 52).

**Table 52: Responses To Formal Methods Of Needs Assessment**

	Frequency of Response(N=32)	Valid%
Yes	22	68.75
No	10	31.25
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All the organisations that conduct a formal approach to needs assessment have an annual appraisal system. In the main, this system is considered at two levels. The first level is where the training department sends out an annual assessment form/questionnaire to individual managers to ascertain if there are shortfalls to the skills/knowledge they need in their job. The second level, which often pertains to junior and middle managers, involves face-to-face interviews between area managers/contract directors and junior or middle managers. The face-to-face interviews focus on the progress of the manager and the areas of skills/knowledge that need strengthening through education/training. Results of the interviews are forwarded to the training department.

All the organisations that have a formal approach to needs assessment also supplement the formal approach with informal methods of assessment.

The way the informal methods of needs assessment works differ from one organisation to another. In the main, however, the area manager/contract director, using his experience may decide that certain managers need to attend courses, which he (area manager/contracts director) considers are worthwhile for the organisation.

Further discussions with training officers also revealed that attendance to general education/training courses can be initiated by individual managers. If the organisation considers the manager's choice of education/training course to be justifiable, both in terms of cost and meeting the needs of the organisation, then the manager is sent on the course.

There was, however, no substantiative evidence from the discussion with training officers to suggest whether most of the courses followed as a result of needs assessment by informal methods, are mostly manager-led or organisation-led.

The discussion with the training officers revealed, overwhelmingly, that organisations also use the formal approach to training methods assessment as an annual pay/salary review mechanism for their managers. It is important and necessary that clear distinctions are made as to the assessment of education and training needs.

If the objectives and benefits of a training needs assessment are to be fully achieved, it is important, and indeed necessary, that organisations have in place a method of assessing education/training needs which is independent of the annual pay/salary review assessment methods for their managers. Discussions with training officers reveal that the personnel (mainly area managers/contract directors) who are involved in assessing the needs of managers, and who conduct many face-to-face interviews, appear to have no training related to training needs assessment. They tend to rely on their experience, and what they anticipate manager needs are likely to be. These personnel would need to undergo training on issues relating to the various methods that can be employed in determining education and training needs of managers. Consideration should be given to methods such as observations, questionnaires/forms and tests.

#### **7.5. Management Education/Training Evaluation Methods Within Refurbishment Organisations**

This study also sought to discover the evaluating methods which are adopted by refurbishment organisations in the provisions of management education/training.

Hamblin (1974<sup>240</sup>) notes that "the act of evaluating training is simply the act of judging whether or not it was worthwhile in terms of some criterion of value, in the light of the information available". p8

According to Goldstein (1986<sup>222</sup>) "evaluation is the systematic control of descriptive and judgemental information necessary to make effective training decisions related to the selection, value and modification of various instructional activities". p111

Since education and training programmes are effective to the extent that they contribute to improved job performance, then evaluation is necessary in order to eliminate ineffective programmes and to improve future, as well as present programmes.

The thirty-two training officers who were interviewed were asked if they had in place any form of evaluation methods for their education and training programmes. Only fifteen (46.87%), i.e. less than half, responded that they have in place one form of evaluation method. (Table 53).

**Table 53: Responses On Evaluation Methods For Management Education/Training**

	Frequency of Response (N=32)	Valid%
Yes	15	46.87
No	17	53.13

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The main evaluation method that exists within organisations entails the training department sending out course appraisal sheets (questionnaires) to managers who have attended courses within two weeks of course attendance. The appraisal questionnaires allow managers to give feedback on the courses they have attended by indicating their enjoyment of and satisfaction with the course. However, the Harbridge Consulting Group (1991<sup>246</sup>) is of the view that this 'reaction' end of course questionnaire in its various forms, remains widely used, although there is universal understanding of its limitations. With this approach to evaluation, on-the-job improvements (if any), resulting from course attendance, cannot be ascertained.

Only four (12.5%) organisations have a long term approach which relates their evaluation procedure to performance on site. Part of this on-the-job performance evaluation method includes work based projects, given to managers, which allows comparison to be made between performance before and after course attendance.

There is general consensus among all the training officers interviewed that evaluating manager education/training is an area which they found the greatest difficulty. They all contend that they are still in search of "how best" to evaluate the courses which the managers attend. The implication of this is that there is a need for a formal and generally accepted approach for evaluating education and training programmes within organisations in the construction industry. Such evaluation methods should relate course attendance with on-the-job performance.

Similarly, all the training officers contend that the difficulties they face with evaluating management education/training, means that the benefits of training and education can not be fully ascertained. This would invariably affect the budget allotted for management education/training provisions as organisations can not fully justify increasing their management education and training budgets.

The next section of this chapter explores the preferences of organisations and managers on the delivery and methods of management education and training. The establishment of managers' preferences on methods and delivery of education/training should assist educators when providing suitable courses for managers.

### **7.6 Preferences On Methods And Delivery Of Management Education And Training**

The thirty-two training officers who were interviewed, as part of the study, were asked what their organisations' preference was for methods of training, in-house or external training. In-house, or in-company training courses, in this study means those courses organised by the organisations for their managers whether the training staff used is from within the organisation or external sources.

External courses are those that are provided by outside organisations and which are generally available to the public.

Of the thirty-two training officers interviewed, the majority, twenty-nine (90.36%), responded that they preferred in-house courses to external courses. Only 9.37% preferred external courses (Table 54).

**Table 54: Organisations' Preferences On Course Delivery Methods (In-house/External):**

	Frequency of Response (N=32)	Valid%
In-house	29	90.63
External	3	9.37

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The two reasons given for their preferences are:-

- (i) In-house courses are cheaper than external courses.
- (ii) In house courses are directly geared towards meeting the objectives/needs of the organisation.

This study supports the CITB (1988b<sup>130</sup>) study which shows that most construction organisations prefer in-house training courses to external courses. Twenty-nine (90.6%) of all organisations interviewed provide in-house training courses. These organisations contend that they supplement their courses with external courses, especially for those areas that the organisations cannot provide for their managers. The organisations that do not have any kind of in-house courses rely on sending their managers on external courses.

It is worth noting that ten (31.25%) of organisations have in-house courses recognised by professional organisations (CIOB and RICS) for Continuing Professional Development (CPD).

Most of the organisations, 31 (96.87%) who send their managers on courses prefer short courses of not more than 2 days duration. This is mainly due to the fact that organisations can claim the training levy back from the Construction Industry Training Board (CITB).

Further discussion with training officers reveal that organisations send their managers on external courses run by a variety of training providers. These include:-

- (i) Universities/Polytechnics
- (ii) Colleges of Further Education
- (iii) Management consultants
- (iv) Professional/trade associations
- (v) CITB

There is no significant preference of one training provider over the other, a view supported by managers who participated in the postal questionnaire. Courses are

attended because of their relevance to both organisation and managers, irrespective of the course provider.

There is general agreement among training officers that external courses that lead to qualifications should be designed as modular courses to give managers the flexibility of carrying out their jobs and also of meeting their education and training needs.

The managers who participated in the postal questionnaire of the study were also asked of their preferences on course delivery methods.

Of the 142 managers who participated in the study, 50.7% of the managers responded that they much preferred in-house courses compared to 39.4% who have much preference for the external courses (Table 55).

**Table 55: Managers' Preferences On Course Delivery Methods (In-house/External)**

	<u>Percentage Responses (N=142)</u>			
	Much Preferred	Preferred	Less preferred	Not Preferred
In-house	50.7	32.4	9.9	7.0
External	39.4	39.4	12.0	9.2

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Table 55 also suggests that over 83% of managers either prefer, or have much preference, for in-house courses compared to 78.8% who either preferred or have much preference for external courses. Unlike the organisations' overwhelming preference for in-house courses, which appears to be mainly attributable to cost, the



managers' preference for in-house courses over external courses is not overwhelming. The implications of the results would suggest that in-house and external courses need to be considered in providing education and training for refurbishment managers. Whilst internal courses can be tailored to meet the needs of organisations, external courses can be used to supplement them, especially in areas where the organisation has no expertise. Managers can also benefit from the cross-fertilisation of ideas which can accrue from external courses, since managers from different organisations are in attendance at such courses.

Managers' preferences for in-house training methods were also established. In-house training methods were classified under three categories, namely:-

- (i) On-the-job with guidance
- (ii) On-the-job without guidance
- (iii) Off-the-job but in-house

On-the-job training for the purpose of this study is the term used to describe training given in the normal work situation. This includes coaching and counselling, attachments and job rotation.

Off-the-job (in-house training) refers to training which takes place within the organisation, but not during the normal work situation. This includes seminars group discussions, case studies and programmed instructions and lectures.

Of the 142 managers who participated in the postal questionnaires, 81.7% responded that they either much preferred or preferred on-the-job training with guidance, while 76.7% of managers much preferred or preferred off-the-job, but in house training. Only 27.4% responded that they much preferred or preferred on-the-job training without guidance (Table 56).

**Table 56: Managers' Preferences On In-house Training Methods**

	<u>Percentage Responses (N=142)</u>			
	Much Preferred	Preferred	Less preferred	Not Preferred
On-the-job with guidance	44.4	37.3	8.5	9.9
Off-the-job	37.3	39.4	12.0	11.3
On-the-job without guidance	3.5	23.9	31.1	40.8

From Table 56, it can be seen that while over 44% of the managers much preferred on-the-job training with guidance, under 4% of the managers have much preference for on-the-job (without guidance). Similarly, over 40% of the managers responded that they do not prefer on-the-job training without guidance. The relatively high response for on-the job training with guidance when compared to on-the-job training without guidance reflects the necessity for hands-on experience backed up with coaching and/or mentoring.

Off-the-job training as can be seen in Table 56 also received a favourable response from managers. The implication of this is that in-house training programmes for managers would have to include both on-the-job training with guidance as well as off-the-job training, but in-house.

Managers' perceptions on how best management skills and knowledge for refurbishment are best developed were also sought. To this effect, managers who participated in the postal questionnaire, were asked to indicate to what extent they agree or disagree with the four main ways by which skills and knowledge may be developed. Table 57 shows managers' ranking on ways that management skills and knowledge are best developed.

**Table 57: Managers' Perception On How Management Skills/Knowledge For Refurbishment Are Best Developed**

	<u>Percentage Responses (N=142)</u>			
	Strongly agree	Agree	Disagree	Strongly disagree
On-the-job (with guidance)	56.4	38.0	4.9	0.7
In-house courses	26.8	61.2	12.0	0.0
External courses	22.6	57.0	16.9	3.5
Learning from experience (no guidance)	23.9	29.6	33.1	13.4

Table 57 shows that 94.4% of the 142 managers who participated in the postal questionnaire noted that they strongly agreed with on-the -job training with guidance as a way of developing management skills and knowledge. An inspection of Table 57 also reveals that 88.0% and 79.6% also strongly agree or agreed that in-house courses and external courses respectively are ways of developing management skills and knowledge for refurbishment. Also, from Table 57, it can be seen that over 46% of the managers either disagreed, or strongly disagreed, that learning from experience without guidance is a way of developing management skills and

knowledge. This result supports managers' views that on-the-job training with guidance is preferred, to training without guidance, as discussed earlier. It further validates the results of this study.

The fact that 88%, and nearly 80% of managers agree with in-house courses and external courses respectively, as ways of developing management skills and knowledge, and also the fact that 94.4% of managers responded to on-the-job training, means that educators would need to give due consideration to these three methods when providing education and training for refurbishment managers.

Furthermore, these results seem to indicate that a mixture of course delivery methods are important if refurbishment managers are to acquire and develop the skills/knowledge which are necessary for the work that they do. Educators and refurbishment organisations should aim to provide the "right" mix of training methods. It is also recommended that further research be conducted to establish which of the course delivery methods is most appropriate for the acquisition and development of a given skill/knowledge or sets of skills/knowledge. For example, the method of developing the skills/knowledge for communication (oral/written) and leadership may, or may not, be most appropriate for developing the skills/knowledge associated with forecasting/planning and analysis of project risk/uncertainty.

The present study also explored managers' preferences for course duration, time of year to attend courses, and place of training. These results should be of benefit to organisations and educators as it will enable them to provide management courses that meet the needs of managers.

The data displayed in Table 58 indicate managers' preferences for course duration.

**Table 58: Managers' Preferences On Course Duration**

	<u>Percentage(%) Responses (N=142)</u>			
	Much Preferred	Preferred	Less preferred	Not Preferred
2 - 3 days	40.1	38.8	14.8	6.3
1 day	40.1	24.7	15.5	19.7
4 - 5 days	12.0	24.6	43.0	20.4
1 week	14.7	14.1	28.9	42.3
1 - 2 weeks	4.2	2.8	14.8	78.2

Table 58 shows that in the main, managers prefer shorter courses to longer courses. Further inspection of Table 58 reveals that 78.9% of managers responded that they much prefer, or prefer, courses of 2 - 3 days duration when compared to 36.6% of managers who noted that they much preferred or preferred courses of 4 - 5 days duration. It can also be seen from Table 58, that over 78% of the managers do not prefer courses which run for between one and two weeks.

Although 64.8% of respondents noted that they much prefer, or prefer, courses of one day's duration, perhaps, courses of 2 - 3 days allow managers to receive the 'optimum' amount of education/training they need without being away from work more than is absolutely necessary. The result of this study lends support to the studies conducted by Koudra (1975<sup>314</sup>), Mangham and Silver (1986<sup>339</sup>) and CITB (1988b<sup>130</sup>). These three studies suggest that managers prefer shorter courses to longer courses.

Course providers should endeavour to provide short courses for refurbishment managers. Such courses, as suggested by the training officers interviewed as part of

the present study, should be modular in design, and lead to qualifications. Modular courses would provide flexibility and encourage managers to become better qualified.

Managers' preferences on time of the year to attend education/training courses were also investigated. It is important to determine the preferred time of year to attend courses. Such information would benefit both construction organisations and educators. Organisations will be better placed to programme and schedule when their managers are to attend courses. For educators, they can plan and concentrate their efforts seasonally, rather than spreading courses throughout the year.

Data on managers' preferences for time of year to attend courses are presented on Table 59. An observation of Table 59 shows that nearly 48% of managers responded that they much preferred to attend courses during the winter months, while 25.4% of managers noted that they much preferred the autumn periods. Spring and summer months were ranked 3rd and 4th respectively by 15.5% and 10.6% of managers.

**Table 59: Managers' Preferences On Time Of Year To Attend Courses**

<u>Percentage Responses (N=142)</u>				
	Much Preferred	Preferred	Less preferred	Not Preferred
Winter	47.9	27.5	8.5	16.9
Autumn	25.4	48.6	18.3	7.7
Spring	15.5	43.0	28.2	13.3
Summer	10.6	28.9	14.7	45.8

From Table 59, it can be seen that over 45% of managers do not prefer to attend courses during the summer months. The preference for winter months could be due to shorter working hours, and unfavourable working conditions during this season, which might necessitate work stoppage. Managers might find it more time effective to attend courses during these months.

The fact that many managers tend to put in for their annual holidays during spring and summer, leave the winter and autumn periods as times to attend courses. This could explain the relatively high percentage (45.8%) of managers who do not prefer to attend courses during summer months. Educators would therefore have to concentrate more effort in providing courses for managers during the winter months.

Managers who participated in the postal questionnaires were also asked their preferences for place/location of training courses. Data on managers' preferences for place of training are presented in Table 60.

**Table 60: Managers' Preferences On Location/Place Of Training**

	<u>Percentage(%) Responses (N=142)</u>			
	Much Preferred	Preferred	Less Preferred	Not Preferred
Within company premises	57.7	27.5	6.3	8.5
Within 20 miles from company	36.6	47.9	12.0	3.5
20 - 50 miles from company	4.9	23.9	45.8	25.4
More than 50 mile from company	4.3	7.0	16.9	71.8

Table 60 clearly shows that managers prefer to attend courses nearer their place of work. While nearly 58% of managers responded that they much preferred courses which are within company premises, only about 4% of managers much preferred courses which require more than 50 miles travel distance from company premises. Put differently, Table 60 shows that nearly 72% of managers do not prefer to travel more than 50 miles from company premises in order to attend courses.

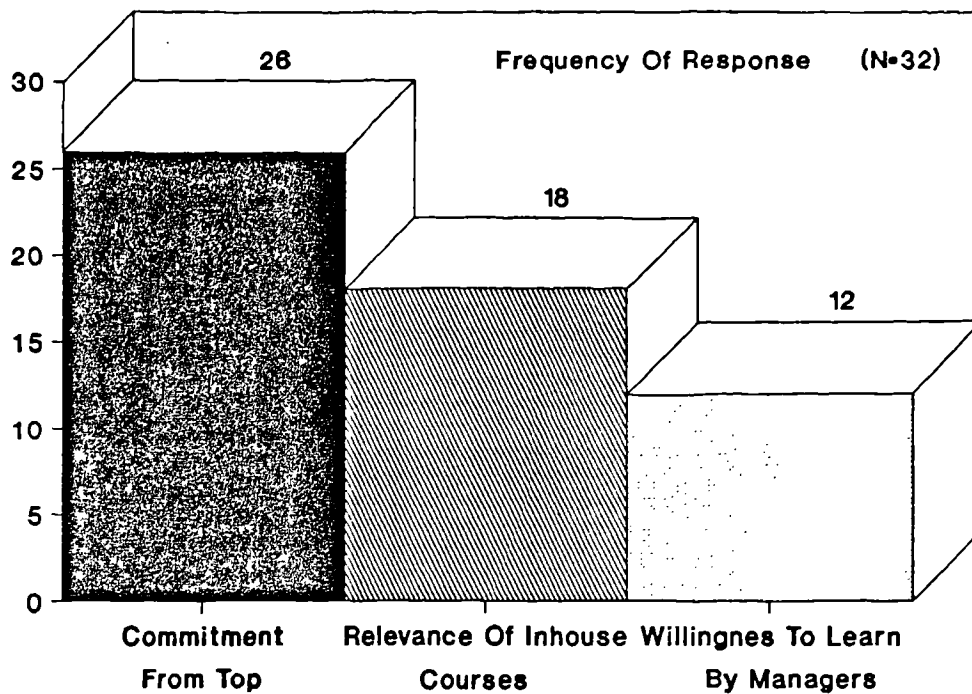
This result clearly indicates the need for localised management courses and learning centres, and supports the in-house course preference, also, given the lower degree of inconvenience, the provisions of local courses could be a further source of attraction for managers to attend management courses, and in so doing, encourage managers to become better qualified.

The present study also investigated the factors that promote, and inhibit, management education and training within refurbishment organisations. Information from such an investigation would enable organisations to concentrate their efforts on those factors that are more likely to improve the provisions of management education and training within their organisations.

When the thirty-two training officers were asked 'what factors promote the provision of management education/training within your organisation?', the majority (26) of training officers responded to commitment to education and training from the top, as the highest promoting factor (see Figure 14). Since senior management normally control budgets, clearly a demonstration of intent would involve making adequate financial provision for education/training.



Figure 14: Perceptions Of Training Officers On Factors Which Promote Management Education And Training Provisions Within Their Organisations

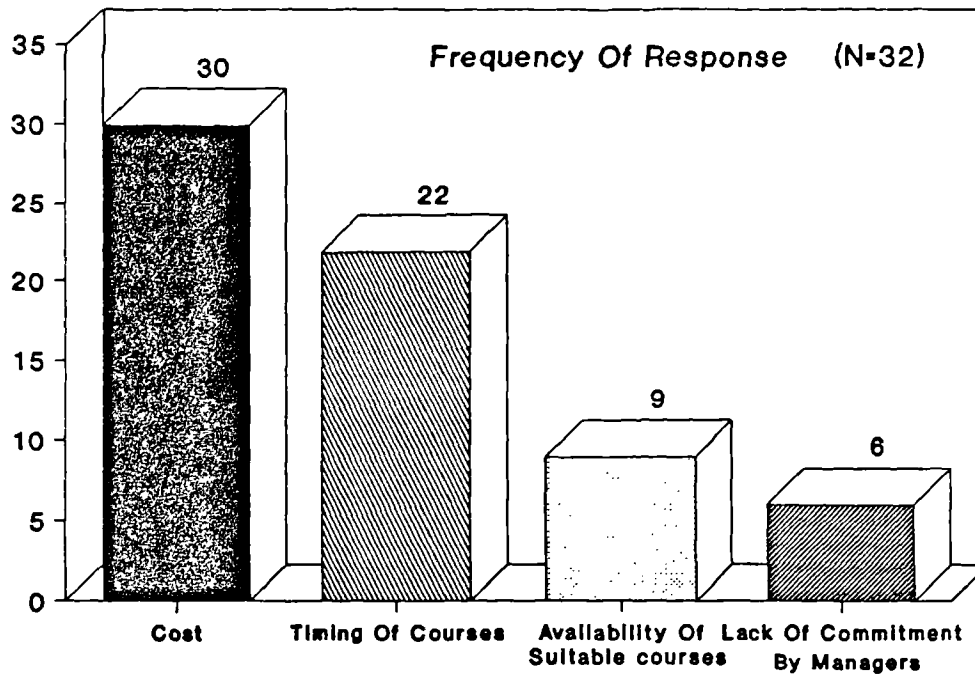


In-house courses geared towards the needs of organisations, and the willingness of managers to learn, were ranked second and third respectively.

When training officers were asked 'what factors inhibit the provisions of management education/training within your organisation?', the two most cited factors were cost of provision, and timing courses to suit managers (See Figure 15).

Cost and timing of courses were cited by 30 and 22 training officers respectively. Nine (9) training officers responded that availability of courses was a factor that inhibits education/training. Reluctance or lack of commitment by managers to attend courses was least cited. Only six (6) training officers volunteered this information. The implication of these results is that even if educators respond to contractors' wishes by designing courses relevant to the needs of refurbishment managers, the costs and timing of such courses would be the contractors' major concerns.

Figure 15: Perceptions Of Training Officers On Factors Which Inhibit Management Education And Training Provisions Within Their Organisations



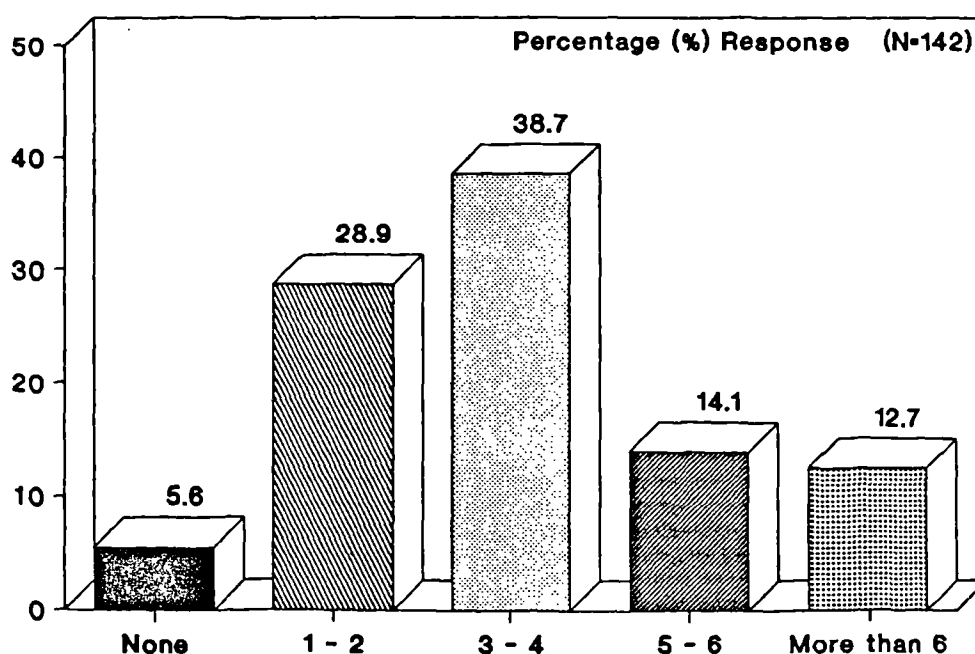
In the present study, an effort was made to determine the commitment of organisations to management education/training. Three issues were considered, namely:-

- (i). Expenditure on training as a percentage of turnover
- (ii). Expenditure on training per manager
- (iii). Number of days per year an organisation send her managers on external courses

The sensitive nature of the information regarding organisation's expenditure on education/training, meant that only 20 of the 32 organisations were able to supply information on (i) and (ii) above. From the information obtained, no substantive evidence was found to suggest what constitute an 'average' ratio of education/training expenditure per turnover, nor expenditure per manager. There was a wide variation on expenditure on education/ training even amongst organisations with similar turnover and similar employee numbers.

Interviews with training officers reveal that organisations send their managers on external general management courses, on average, twice a year. Similarly, when managers who participated in the postal questionnaire of the present study were asked 'how many general management education/training courses have you attended within the last two years?', the majority (38.7%) responded that they have attended 3 - 4 courses within the last two years (see Figure 16). This would mean that managers attend on average, about two courses a year. This result is in agreement with the training officers' view as to the number of courses their managers attend per year.

**Figure 16: Number Of General Management Courses Attended  
By Refurbishment Managers Within The Last 2 Years**



From Figure 16, it can be seen that while 28.9% of managers responded that they attended 1 - 2 courses within the last two years, only about 14% attended 5 - 6 courses within the same duration. A closer observation of Figure 16 shows that just 26.8% of managers have attended more than 4 courses within the last two years. There is therefore a need for organisations to send their managers to more management courses.

It is worth pointing out that the period of the study coincides with the dramatic decline in the construction workload, profit margins, as well as cut-backs on education/training budgets of many organisations. This could to some extent explain the relatively low percentage (26.8%) number of managers who have attended more than four courses within the last two years.

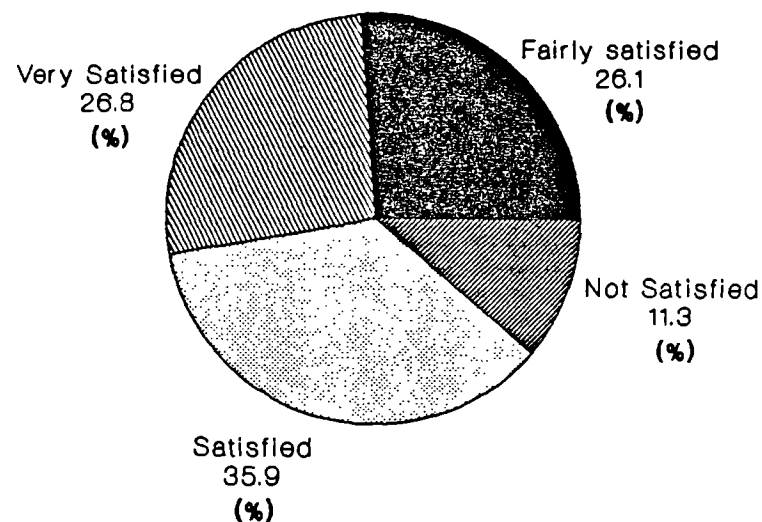
Of the 32 training officers interviewed, 28 (87.5%) noted that their budget allocation for management education/training had been reduced over the last two years. Percentage reduction of education/training budgets vary greatly, ranging from 5% to 65%. Generally speaking, the larger the organisation (in terms of turnover), the smaller the cut in the budget. Regardless of size, during terms of recession, organisations are hard pressed, and education/training is more often than not the first to be cut back.

Refurbishment managers who responded to the postal questionnaire supplied information regarding the degree of satisfaction with the amount and quality of management education/training courses they had received within the last 2 years. Information of this nature would give an indication whether organisations are

providing the right amount, and the right quality, of management education/training which meet managers' needs.

When managers were asked 'How satisfied are you with the amount of education/training you have received within the last 2 years?', it can be seen from Figure 17, that under 27% responded that they were very satisfied. Nearly the same percentage number of managers noted that they were fairly satisfied with the amount of education/training they have received within the last 2 years.

**Figure 17: Degree Of Satisfaction With The Amount Of General Management Education And Training Received Within The Last 2 Years**

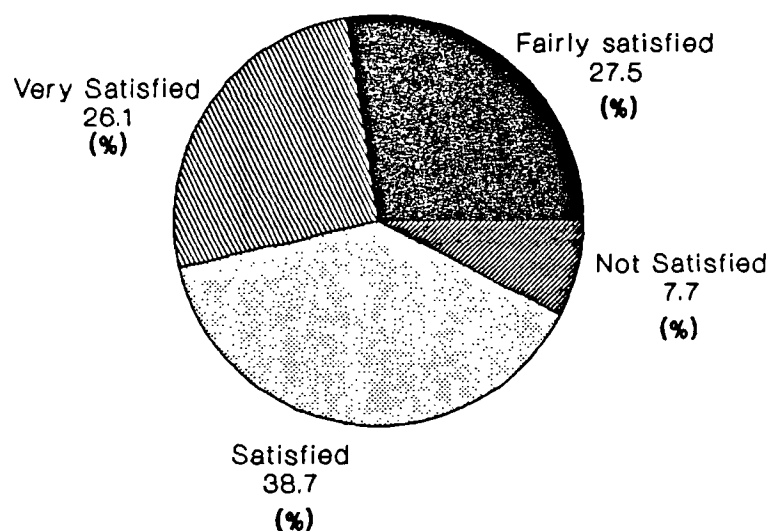


Nearly 36% of managers responded that they were satisfied compared to 11.3% of managers who are not satisfied. However, a closer observation of Figure 17 reveals that over a third of all managers (38.4%) are either fairly satisfied or not satisfied with the amount of education/training they have received within the last 2 years. The implication of this is that there is a need for organisations to send their managers

on more courses. In addition, unless top management in organisations are prepared to invest in the education/training of their employees there will be shortage of high calibre managers.

When managers were asked 'How satisfied are you with the quality of management education/training you have received within the last 2 years?', about 26% of the managers indicated that they were very satisfied (see Figure 18).

**Figure 18: Degree Of Satisfaction With The Quality Of Management Education And Training Received Within The Last 2 Years**



Although 38.7% responded that they were satisfied, Figure 18 shows that 35.2% of managers (over a third of all managers) responded that they were either fairly satisfied or not satisfied with the quality of education/training they have received within the last two years. The result suggest that for organisations and educators,

there is more work to be done in providing managers with quality courses. Management courses should be designed to meet the needs of managers.

It is important that a manager's education/training needs are identified before sending him/her on a course. There is therefore a need for a closer relationship between training departments and managers who are to attend courses.

The next section of this chapter considers the degree of importance which managers attach to factors which may influence the selection and attendance of courses.

From a list of eight factors which may influence course selection, managers who participated in the postal questionnaire were asked to identify those factors which they find important in selecting management courses. The categories were 'very important', 'important', 'fairly important', and 'not important'. These categories were coded 1, 2, 3, and 4 respectively. Average scores were computed from ordinal coding of these data. As mean score increases, the degree of importance attached to the factor decreases. Table 61 presents data on factors which influence managers in selecting courses.

**Table 61: Factors Which Influence Managers In Selecting Courses**

<u>Factors</u>	<u>Average Score (N = 142)</u>	<u>Rank</u>
Course content	1.092	1
Method of training delivery	1.401	2
Duration of course	1.430	3
Cost of attending courses	1.852	4
Course timing	1.866	5
Qualification/expertise of course presenter	2.211	6
Training provider	2.218	7
Place of training	2.268	8

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It can be seen from Table 61 that managers ranked course content as the most important factor in course selection. This result means that if courses are to attract managers, then they need to be designed to meet the needs of managers. Methods of training delivery, and duration of courses were ranked 2nd and 3rd respectively by managers. Managers would prefer to select short courses as opposed to long courses, and courses that are delivered in such a way that meets their needs. Cost of attending courses was ranked 4th. If courses are paid for by the manager's organisation as opposed to the manager footing the bill then it is not surprising that managers attach lower importance to the cost of attending courses in comparison to course content, and method of delivery.

The qualification of the course presenter was ranked 6th, whilst training provider and place of training were ranked 7th and 8th respectively. Those who present management courses would need to be knowledgeable about the materials they present, and also, would need to command credibility and trust from managers.

Place of training is of less importance if the course content is satisfactory, and the delivery method is acceptable to managers.

The degree of importance which managers attach on four factors which may influence course attendance was also sought through postal questionnaires. Table 62 presents these data. As mean score increases, the degree of importance attached to the factor decreases. Table 62 shows that willingness to learn more about the job managers do is the most important factor in attending courses.



**Table 62: Factors Which Influence Managers To Attend Courses**

<u>Factors</u>	<u>Average Score (N = 142)</u>	<u>Rank</u>
Willingness to learn	1.324	1
Promotion & career development	1.556	2
Obtaining qualification	2.268	3
Obtaining the respect of peers	2.500	4

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Further investigation into the results of this study showed that younger managers responded that they were more willing to learn more about their jobs than older managers. Similarly, managers who have been in the construction industry for a relative short period of time are more willing to learn about their jobs than their counterparts who have spent longer time in the industry.

Promotion & career development, and obtaining qualifications were ranked 2nd and 3rd respectively. Courses that lead to qualifications would act as incentives to managers to attend them.

Obtaining the respect of peers was ranked least. Further investigation into the results indicated that more junior managers responded to this factor than did senior managers.

The present chapter has so far considered the nature and extent of management education/training provisions within refurbishment organisations, together with the various factors which affect course attendance and selection. The remainder of the chapter will focus attention on management education/training needs of both managers and organisations, as defined by skills/knowledge (Job dimensions).

### **7.7. Education And Training Needs For Refurbishment: Managers' Perspective**

The analysis of management education and training needs for refurbishment will commence with data on managers' perceptions of the degree of need for education/training in their present job. Firstly, data will be presented at the aggregate level, and then followed by an evaluation of education and training needs at senior, middle and junior management positions.

From a list of 75 skills/knowledge (job dimensions), managers who participated in the postal questionnaire were asked to indicate their degree of need for education/training in each of the job dimensions (see questionnaire in Appendix A).

The categories are 'Very much need', 'Much need', 'Need', and 'Not need'. These were coded 1, 2, 3 and 4 respectively. Average scores were computed from ordinal coding of these data. As mean score increases, this signifies a decreasing need for education and training. Table 63 presents data on education/training needs of managers at the aggregate level.

The two most cited job dimensions for which managers need education and training are forecasting & planning, and analysis of project risk/uncertainty. It will be recalled that in section 6.8 of chapter six, these two dimensions were found to be the two most difficult job dimensions to handle in managing refurbishment work. It is therefore not surprising that managers need education/training in these areas.

**Table 63: Managers' Education/Training Needs For Refurbishment In Present Job**

<u>Job Dimensions (skills/knowledge)</u>	<u>Mean Score (N=142)</u>	<u>Percentage (%)</u>	<u>Rank</u>
Forecasting and planning	1.493	78.20	1
Analysis of project risk/uncertainty	1.620	73.20	2
Use of computer technology	1.718	69.00	3
Employee training: supervisor/foreman	1.754	67.60	4
Health & safety	1.761	67.60	5
Quality control and assurance	1.789	66.20	6
Employee training: management	1.789	64.10	7
Budgetary control	1.796	64.80	8
Competitive tendering	1.824	64.10	9
Negotiate: client	1.873	61.30	10
Managing time	1.894	62.70	11
Setting objectives and goals	1.901	61.30	12
Costing and estimating	1.915	60.60	13
Managing conflict/crisis	1.923	59.20	14
Leadership	1.937	62.00	15
Construction law	1.965	59.20	16
Career development/appraisal	2.021	57.00	17
Communication (oral/written)	2.028	56.30	18
Motivation of others	2.035	57.00	19
Recruit/select: Subcontractor	2.049	54.20	20
Recruit/select: Supervisor/foreman	2.070	54.20	21
Organisation of communication systems	2.077	53.50	22
Programme design	2.092	52.80	23
Employee training: manual labour	2.092	52.10	24
Team building	2.099	54.20	25
Manpower planning and control	2.099	52.80	26
Managing job stress	2.113	54.20	27
Managing change	2.113	50.70	28
Public relations	2.120	51.40	29
supervision of others	2.127	53.50	30
Recruit/select: management	2.148	51.40	31
Productivity maintenance and control	2.155	50.00	32
Conducting meetings	2.176	50.70	33
Tenant welfare	2.183	50.00	34
Job analysis/specification	2.190	47.90	35
Identifying personal strength/weaknesses	2.204	47.90	36
Decision making	2.211	52.10	37
Site organisation	2.211	50.00	38
Materials planning and control	2.218	47.20	39
Company (strategic) planning	2.225	47.90	40
Contract drafting	2.239	45.10	41
Company accounting	2.246	47.20	42
Delegating responsibilities	2.254	46.50	43
Negotiate: government bodies	2.275	47.20	44
Client/consumer protection law	2.289	45.10	45
Recruit/select: manual labour	2.296	45.10	46
Negotiate: subcontractor	2.303	45.80	47
Negotiate: main contractor	2.310	45.80	48
Employment legislation	2.345	41.50	49
Programme maintenance(update)	2.359	42.30	50
Termination/dismissal: subcontractor	2.366	42.30	51
Company law	2.387	43.00	52
Competitor awareness	2.401	40.80	53

Code of practice/working rule agreement	2.437	40.80	54
Creativity	2.458	39.40	55
Negotiate: trade unions	2.465	40.10	56
Site security	2.472	39.40	57
Negotiate: supplier	2.486	38.70	58
Organisation structure	2.521	34.50	59
Termination/dismissal: supervisor/foreman	2.528	36.60	60
Promotion and transfer	2.528	35.20	61
Sources of finance	2.542	38.00	62
Plant planning and control	2.549	35.90	63
Employee welfare/counselling	2.549	34.50	64
Planning law	2.577	33.80	65
Termination/dismissal: management	2.627	33.80	66
Termination/dismissal: manual labour	2.676	31.00	67
Market research	2.704	31.00	68
Managing other national culture	2.704	31.00	69
Advertising and promotion	2.718	31.70	70
Decanting buildings	2.732	28.20	71
Property insurance	2.789	26.80	72
Organisation culture	2.866	21.80	73
Demotion and retirement	3.000	21.10	74
Foreign language	3.049	23.90	75

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This result further confirms the view that refurbishment work is risky, uncertain, and difficult to forecast and plan. Managers need appropriate education and training if they are to effectively manage these important job dimensions.

Interestingly, the use of computer is ranked 3rd by 69.00% of managers. It is well recognised that the development of user friendly micro-based software for the critical path analysis method of planning has expanded the application of construction management techniques (Charmer, 1987<sup>104</sup>; and Whiteman, 1987<sup>497</sup>). In refurbishment, the need becomes even greater as the necessity for flexibility and speed of response increases, particularly where variation in work content is high, therefore supporting the use of such software. In the construction industry, the application of computer technology in the forms of artificial intelligence, expert systems, and advanced knowledge based systems and modelling, are useful in cost control procedures (Anisi et al, 1990<sup>9</sup>), tendering and estimating (Teo et al, 1991<sup>474</sup>),

interpretation of data (Then, 1990<sup>475</sup>; Westwood and Morris, 1990<sup>492</sup>) and in decision making (Brandon et al, 1988<sup>62</sup>; Bon, 1988<sup>49</sup>).

Health and safety also received a high weighting. The need to understand and be able to control substances hazardous to health is of utmost importance in refurbishment. Budgetary control is a high order need, ranked 8th, which is marginally more important than costing and estimating ranked 13th.

The high level of variations in refurbishment works, heightened by risks and uncertainty, and with cost commitments liable to escalate at fairly short notice, increase the need for education/training in the job dimensions of budgetary control, and costing & estimating.

The interpersonal skills of leadership, communication, and motivation, are ranked 15th, 17th and 18th respectively. With the increase of subcontract labour, coupled with the corresponding increase in fragmented specialised works, and difficulties associated with locating labour on site, the skills of communication and leadership become necessary. A little way down Table 63, are the operational skills of productivity maintenance & control, site organisation, and materials planning & control.

The job dimensions of property insurance, organisation culture, and demotion & retirement received low ratings. As previously mentioned, the job dimension of property insurance would appear to be left to specialists in head offices.

Foreign language was ranked lowest. With the opening up of Europe, and the opportunities and challenges that might accrue, one would have expected a need to communicate in another language. Foreign languages it will be recalled from the last chapter, was also ranked the least important skill/knowledge for refurbishment. Discussions with senior refurbishment managers, who were interviewed as part of the present study, revealed that refurbishment organisations do not anticipate operating in foreign markets. Refurbishment organisations are generally smaller in size than organisations involved in new build (Griffith, 1992<sup>232</sup>), and as they are mainly national, as opposed to, international contractors, their workforce is largely indigenous and does not need a second language for their jobs.

The present study also sought to investigate if there is a relationship between:-

- (i). The job dimensions (skills/knowledge) which managers perceive as important in their present job, and their degree of need for education and training.
- (ii). The job dimensions which managers perceive as difficult in managing refurbishment work, and the degree of need for education/training for those job dimensions.

By testing the null hypothesis that there is no significant correlation between the degree of importance of management skills/knowledge for refurbishment, and need for education and training, Spearman's coefficient of correlation ( $r_s$ ) is 0.363. This value is significant at the 0.05 level. The null hypothesis is rejected. This means that the degree of need for education/training is higher for those skills/knowledge which managers perceive as important for the job they do. This result supports the view of the CITB (1988b<sup>130</sup>). In their study on 'Survey of Supervisory and Management

Training Needs in UK Construction Industry', the CITB (1988b<sup>130</sup>) noted that:

"... the important activity areas closely resemble the areas where training is perceived as being important" vol 1, p67.

Similarly, by testing the null hypothesis that there is no significant correlation between the job dimensions which managers perceive as difficult to handle in refurbishment, and their degree of need for education/training, Spearman's coefficient of correlation ( $r_s$ ) is 0.573, and significant at the 0.05 level. The null hypothesis is rejected. This result suggests that refurbishment managers have a higher degree of need for education/training in those job dimensions which they find most difficult to handle in the job they do. If managers are to cope effectively with the difficulties of refurbishment, then, appropriate education/training is needed in order to acquire and develop the relevant skills/knowledge.

The next section of this chapter analyses education and training needs for each level of management; senior, middle and junior. Within the text, only the job dimensions for which managers most need education and training will be presented. The categories 'Very much need' and 'Much need' are combined to form the 'Most need' areas of education/training. The job dimension for which managers responded that they 'Need', and do 'Not need' education/training can be consulted in Appendix B.

Tables 64, 65 and 66 present data on job dimension for which senior, middle and junior managers most need education/training in their present job.

**Table 64: Job Dimensions For Which Senior Managers Most Need Education/Training For Refurbishment In Present Job**

<u>Job Dimensions (skills/knowledge)</u>	<u>Mean Score (N=23)</u>	<u>Very much need and much need education/training(%)</u>	<u>Rank</u>
Analysis of project risk/uncertainty	1.826	73.90	1
Forecasting and planning	1.870	78.20	2
Use of computer technology	2.000	78.20	3
Health and safety	2.087	78.30	4
Budgetary control	2.130	65.20	5
Employee training: management	2.174	69.60	6
Competitive tendering	2.174	65.20	7
Employee training: supervisor/foreman	2.217	69.60	8
Quality control and assurance	2.217	65.20	9
Negotiate client	2.217	60.80	10
Managing time	2.261	65.20	11
Costing and estimating	2.261	56.50	12
Setting objectives and goals	2.304	60.90	13
Managing conflict/crisis	2.348	60.80	14
Motivation of others	2.348	60.80	15
Leadership	2.391	52.10	16
Communication (oral/written)	2.435	60.90	17
Career development/appraisal	2.435	56.50	18
Managing change	2.435	56.50	19
Recruit/select: subcontractor	2.435	56.50	20
Recruit/select: supervisor/foreman	2.478	43.40	21
Construction law	2.522	52.20	22
Recruit/select: management	2.522	52.20	23
Manpower planning and control	2.522	52.10	24
Supervision of others	2.522	47.80	25
Conducting meetings	2.522	47.80	26
Team building	2.565	52.10	27
Managing job stress	2.565	47.80	28
Identifying personal strength/weaknesses	2.565	43.50	29
Programme design	2.565	43.40	30
Productivity maintenance and control	2.609	56.50	31
Public relations	2.609	52.20	32
Organisation of communication systems	2.609	52.20	33
Decision making	2.609	43.40	34
Contract drafting	2.609	43.40	35

An inspection of Tables 64, 65 and 66 reveals that managers at all levels consider forecasting & planning, analysis of project risk/uncertainty, and health & safety as high order needs for education and training. Courses designed for refurbishment would need to accommodate these three areas. The content of any course in the



area of refurbishment management would have to consider the different job roles of managers according to their positions within the management hierarchy.

**Table 65: Job Dimensions For Which Middle Managers Most Need Education/Training For Refurbishment In Present Job**

<u>Job Dimensions (skills/knowledge)</u>	<u>Mean Score (N=59)</u>	<u>Very much need and much need education/training(%)</u>	<u>Rank</u>
Forecasting and planning	1.898	78.00	1
Analysis of project risk/uncertainty	1.898	74.60	2
Health and safety	1.898	74.60	3
Use of computer technology	1.966	66.10	4
Quality control and assurance	2.017	67.80	5
Employee training: supervisor/foreman	2.051	67.80	6
Budgetary control	2.119	64.40	7
Employee training; management	2.153	59.30	8
Setting objectives and goals	2.169	62.70	9
Managing time	2.186	66.10	10
Competitive tendering	2.186	66.10	11
Negotiate: client	2.186	64.40	12
Recruit/select: subcontractor	2.220	59.30	13
Costing and estimating	2.237	62.70	14
Managing conflict/crisis	2.237	61.00	15
Recruit/select: supervisor/foreman	2.237	57.60	16
Recruit/select: management	2.237	54.20	17
Construction law	2.254	61.00	18
Employee training: manual labour	2.271	55.90	19
Team building	2.305	61.00	20
Leadership	2.322	59.30	21
Motivation of others	2.322	57.60	22
Manpower planning and control	2.339	54.20	23
Public relations	2.339	50.80	24
Communication (oral/written)	2.356	54.20	25
Programme design	2.390	55.90	26
Managing change	2.390	52.50	27
Materials planning and control	2.407	54.20	28
Career development/appraisal	2.407	54.20	29
Supervision of others	2.407	54.20	30
Programme maintenance (update)	2.407	49.10	31
Tenant welfare	2.424	54.20	32
Productivity maintenance and control	2.424	50.80	33
Organisation of communication systems	2.424	42.40	34
Managing job stress	2.441	59.30	35

**Table 66: Job Dimensions For Which Junior Managers Most Need Education/Training For Refurbishment In Present Job**

<u>Job Dimensions (skills/knowledge)</u>	<u>Mean Score (N=60)</u>	<u>Very much need and much need education/training(%)</u>	<u>Rank</u>
Forecasting and planning	1.833	81.60	1
Health and safety	2.033	75.00	2
Analysis of project risk/uncertainty	2.067	68.40	3
Employee training: supervisor/foreman	2.083	70.00	4
Quality control and assurance	2.083	65.00	5
Managing time	2.117	51.60	6
Employee training: manual labour	2.133	63.40	7
Use of computer technology	2.167	73.30	8
Public relations	2.233	58.30	9
Construction law	2.250	63.40	10
Recruit/select: supervisor/foreman	2.267	61.70	11
Communication (oral/written)	2.300	58.40	12
Team building	2.300	56.70	13
Supervision of others	2.317	61.60	14
Manpower planning and control	2.333	63.40	15
Motivation of others	2.333	56.60	16
Managing conflict/crisis	2.350	58.40	17
Recruit/select: manual labour	2.367	58.30	18
Setting objectives and goals	2.383	58.30	19
Programme design	2.383	48.30	20
Costing and estimating	2.400	55.00	21
Budgetary control	2.417	55.00	22
Materials planning and control	2.433	55.00	23
Tenant welfare	2.450	55.00	24
Competitive tendering	2.450	51.70	25
Productivity maintenance and control	2.467	50.00	26
Managing change	2.467	50.00	27
Leadership	2.483	55.00	28
Site organisation	2.483	46.60	29
Programme maintenance (update)	2.500	55.00	30
Managing job stress	2.500	53.40	31
Conducting meetings	2.500	51.60	32
Organisation of communication systems	2.517	53.30	33
Recruit/select: subcontractor	2.517	53.30	34
Identifying personal strength/weaknesses	2.517	46.70	35

Use of computer technology is also a high order need, marginally higher for senior and middle managers, than to junior managers. Use of computer technology is ranked 3rd, 4th and 8th by senior, middle and junior managers respectively.

Managing time, and managing conflict/crisis also received high weighting at all levels of management. It is necessary that these job dimensions are also included in refurbishment courses for all levels of managers. In an environment of high levels of risk/uncertainty, conflict and crisis would be expected to be on the increase. Managers would need requisite skills/knowledge to handle such conflicts/crisis. These crisis could have significant consequences on time overrun of projects, in which case managers would be expected to have firm control over the time for project completion.

The job dimension of budgetary control is ranked 4th, 7th and 22nd by senior middle and junior managers respectively. Similarly, costing and estimating is ranked 12th, 14th and 21st by senior, middle and junior managers respectively in terms of the need for education and training. These results suggest that the need for education/training on job dimensions associated with financial management is higher for senior than for junior management. Senior management would benefit more from courses geared towards financial management than their junior counterparts.

While the job dimension of competitive tendering is ranked 7th by senior managers, the same job dimension is ranked 11th and 25th respectively by middle and junior managers. This result is not surprising since senior managers are more involved in tendering to win jobs for their organisations than are their junior counterparts.

Mid-way down Tables 64, 65 and 66, the need for education and training in the interpersonal skills of communication, leadership, motivation, and supervision of others are evident. Courses designed for all levels of refurbishment management would need to include interpersonal skills. The actual content and structure of courses would need take account of the job roles of managers due to their positions in the organisation. For example, Leadership skill is ranked 16th by senior managers (see Table 64), while it is ranked 21st and 28th by middle and junior managers respectively.

Public relations are ranked 9th, 24th and 32nd by junior, middle and senior managers respectively. Similarly, junior managers ranked tenant welfare 24th in terms of need for education/training, while middle managers ranked it 32nd. Senior managers do not consider tenant welfare as a job dimension for which they 'most need' education and training.

These results are nor surprising since site management is closer to site and are more in contact with tenants and the general public when compared to their senior counterparts. Courses for junior managers would have to reflect their needs in public relations and tenant welfare.

The need for education and training in the job dimensions associated with operational management e.g. programme design, manpower planning & control, materials planning & control, and productivity maintenance & control is higher for junior management than for senior management. From Tables 64, 65 and 66, it can be seen that programme design is ranked 20th, 26th and 31st by junior, middle and

senior managers respectively. Similarly, manpower planning and control is ranked 14th, 23rd and 24th by managers in the junior, middle, and senior positions respectively. These results are to be expected since the requirements of operational skills/knowledge are higher in junior than in senior management positions.

Contract drafting was ranked least by senior managers, as a job dimension for which they 'most need' education and training (see Table 64). For middle and junior managers in the present study, contract drafting is not a high order need. Senior managers are more involved in the negotiation and formulation of contracts with the client's team than are middle and junior managers.

In their study on Supervisory and management training needs in the UK construction industry, the CITB (1988b<sup>130</sup>) highlighted seven core topic areas for training. These are, in order of importance:-

Quality control

Managing people

Planning (including financial planning)

Progress control (e.g productivity maintenance & control, and Manpower planning & control)

Health & safety

Materials control

Industrial relations (e.g. Employee welfare and training)

Source: CITB (1988b<sup>130</sup>) "Survey of Supervisory and Management Training Need In The UK Construction Industry. vol 1, p24

Apart from materials control, the above topic areas are also cited by managers in the present study as areas for which there is most need for education and training (see Tables 64, 65 and 66), however, the ranking positions for these topics areas differ in both the CITB study and the present study.

To summarise the discussions in this section of the chapter, there are job dimensions for which managers at all levels most need education and training. The five main areas for education/training are:-

- (i) Forecasting & planning of refurbishment works
- (ii) Analysis of project risks/uncertainty
- (iii) Health & safety
- (iv) Quality control
- (v) Use of computer technology

Courses designed for managers would have to take in to account managers' jobs as dictated by their positions in the management hierarchy.

The need for education/training in job dimensions associated with financial management is higher for senior than junior managers. Education and training needs for job dimensions associated with operational management are higher for junior than senior management.

### **7.8. Management Education And Training Needs For Refurbishment: Organisations' Perspective**

The present study also sought to investigate management education/training needs of refurbishment organisations, and to establish if there are similarities in the needs of organisations and managers. To this end, the 32 training officers who were interviewed were asked of the skills/knowledge (job dimensions) currently needed for refurbishment.

The ten most cited job dimensions needed by refurbishment organisations are presented in Table 67 in decreasing order of importance.

**Table 67: Current Education And Training Needs Of Refurbishment Organisations**

<b><u>Rank (N=32)</u></b>	<b><u>Job Dimensions</u></b>
1.	Health and safety
2.	Programming of the works
3.	Public relations/Tenant liaison
4.	Managing time
5.	Communication
6.	Security
7.	Contract law
8.	Pricing of the works
9.	Quality management
10.	Leadership

---

For refurbishment organisations, health and safety is ranked highest in terms of need for education and training. This is not surprising as those involved in refurbishment are prone to site fatalities. Further discussions with training officers reveal that courses in the general areas of health and safety in construction are not only the most attended courses by managers, but courses for which organisations are most willing to make money available. For organisations, it is necessary that they

instil in their managers, the importance of health and safety in refurbishment. Health and safety courses for refurbishment would need to take into consideration, the control of substances hazardous to health. It is important that managers are able to handle, and relate to the workforce, when confronted with substances such as asbestos and lead in the course of their work.

Programming of the works, and public relations were ranked 2nd and 3rd respectively (see Table 67). With high levels of variation/change orders in refurbishment work, it is necessary that the programme schedule for the works is updated regularly to accommodate these changes.

Regarding public relation, eight of the thirty-two organisations as earlier mentioned have employed Public Relation Officers/Tenant Liaison Officers to manage this important function. Managing time and communication also received high weighting by organisations.

Rather surprisingly, quality management received a low rating, however, training officers recognised quality management as being of immense importance in the future, since clients are demanding better quality service, and BS 5750 is being widely recognised as the standard (CSSC, 1988<sup>98</sup>; 1989<sup>99</sup>).

Although considered as an important skill for refurbishment, the need for education and training in leadership is a low order need when compared to health & safety, and public relations.



Of the ten most cited job dimensions by refurbishment organisations, only two i.e. security and contract law do not appear as the job dimensions for which all levels of management, senior, middle and junior, most need education and training (see Tables 64, 65 and 66). Although there are differences in priority and rank positions of job dimensions between managers and organisations, the result would suggest, that in the main, there seem to be agreement between organisations and managers as to the job dimensions for which there is most need for education and training.

When an attempt was made to ascertain if education/training needs differ between managers of specialist organisations, and managers of general refurbishment organisations, no significant or substantive differences were noted. The implication of this is that courses for refurbishment can be attended by managers from both specialist and general refurbishment organisations.

### **7.9. Grouping Of Job Dimensions (Skills/Knowledge): Data Reduction**

In this chapter, education and training needs of refurbishment managers, as defined by skills/knowledge job dimensions (skills/knowledge) were established. It is the aim of this section of the chapter to extend the analysis by attempting to identify which set(s) of job dimensions are statistically correlated. In other words, to identify the job dimensions that are distinct and required together.

Data reduction allows an investigator to ascertain and isolate set(s) of job dimensions that are meaningfully related. This approach should benefit course designers. It should assist them in evaluating groups or sets of job dimensions which

ought to be taught together. The job dimensions which are not statistically related also deserve consideration as they are part of refurbishment management practice.

In the context of the present study, data reduction means the identification of groups/sets of job dimensions for which managers need education/training, and which can be arrived at by employing a statistical technique called Factor Analysis.

It is important to point out at the outset, that the identified groups are not necessarily groups of job dimensions for which managers most need education/training, but groups that are statistically and meaningfully related.

Factor analysis is well researched and accepted as a data reduction technique (Overall and Klett, 1972<sup>390</sup>; Eysenc and Eysenc, 1975<sup>185</sup>; Cattell, 1980<sup>96</sup>; Carroll, 1983<sup>89</sup>; Norusis, 1985<sup>386</sup>; and Kline, 1987<sup>302</sup>).

Overall and Klett (1972<sup>390</sup>) have defined factor analysis as:

"... factor analysis is concerned with relationship among test variates and relationships of the test variates to derived factors" p 11.

Norusis (1985<sup>386</sup>) states that factor analysis is:

"... a statistical technique used to identify a relatively small number of factors that can be used to represent relationships among sets of many interrelated variables" p125.

Factor analysis as a statistical reduction technique involves re-defining a reduced rank factor matrix as a linear transformation of the matrix inter correlation amongst original variables. Expressed mathematically, for the  $i$ th standardised variable,

$$X_i = A_{i1}F_1 + A_{i2}F_2 + \dots A_{ik}F_k + U_i \quad \dots \text{Equation (1)}$$

The  $F$ s are the common factors, the  $A$ s are the constants which are used to combine the  $k$  factors, and  $U$  is a unique factor. According to Norusis (1985<sup>386</sup>), the  $U$ s are assumed to be uncorrelated with each other and with the common factors. The factors which are inferred from observed variables are estimated linear combinations of them. In general, the mathematical expression for the estimate of the  $j$ th factor  $F_j$  is:-

$$F_j = \sum_{i=1}^p W_{ji}X_i = W_{j1}X_1 + W_{j2}X_2 + \dots W_{jp}X_p \quad \dots \text{Equation (2)}$$

The  $W$ i's are known as the factor coefficients, and  $p$  represents the number of variables (Norusis, 1985<sup>386</sup>).

Overall and Klett (1972<sup>390</sup>) suggest that three main criteria are needed for a good factor analysis. These are:-

- (i) Parsimony
- (ii) Orthogonality
- (iii) Conceptual meaningfulness

A good factor solution should be parsimonious, since the reduction in the number of variables is of utmost importance. The number of variables one ends up with should be a lot less than the variables that one began with.

According to Overall and Klett (1972<sup>390</sup>), orthogonality requires that factors are independent of one another. Each factor would also need to be distinguishable from the other. Each factor would have to be conceptually meaningful, and capable of identification.

The adequacy of number of subjects is important for factor analysis. This has received a great deal of attention in the literature (Nunnally, 1978<sup>387</sup>; Barret and Kline, 1981<sup>25</sup>; and Kline, 1987<sup>302</sup>). The number of subjects (people) need to be large so as to reduce the standard error of the correlations. Barret and Kline (1981<sup>25</sup>), and Kline (1987<sup>302</sup>) suggest that a subject number of 100 will suffice.

The ratio of number of subjects to number of variables is equally important. However, Kline (1987<sup>302</sup>) notes that "How great this ratio should be is a matter of dispute even amongst factor analysts of the highest calibre" p24. Kline (1987<sup>302</sup>) maintains that what is more important is that the number of subjects (people) should exceed the number of variables (job dimensions).

In the present study, the number of subjects i.e managers is 142, and the number of variables i.e job dimensions is 75. With an acceptable number of subjects, and ratio of number of subjects to variables, one can then proceed with factor analysis.

In factor analysis, it is important that each variable has a high factor score coefficient, as this improves the value of each individual variable. Norusis (1985<sup>386</sup>) takes note of Kaiser (1974) who suggests a value of under 0.5 as being unacceptable. The factor score of each of the job dimensions in the present study is well in excess of 0.5. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is used as an index for comparing the magnitude of all observed correlation coefficients. The value of the overall KMO statistics in this sample is:

$$\text{KMO} = 0.79385$$

This value is above 0.5 and meets Kaiser's (1974) requirement.

Table 68 presents data on initial statistics for each factor. It is necessary at this juncture to explain what each column of Table 68 represents. The first and second columns provide information on the individual job dimensions. The last four columns describe the job dimensions. The job dimensions are all in standardised form, with a mean of zero, and a variance of 1. The total variance is therefore the sum of the variance of each individual variable which is 75. The factors as presented in Table 68 are arranged in descending order of variance. The column labelled Eigen value lists the total variance for each factor. Also, the column labelled 'Pct of Var' contains the percentage of total variance for each factor. An inspection of Table 68 shows that Factor 1 which has a variance of 20.75 accounts for 27.7% of the total variance of the 75 factors. Similarly, 71.3% of the total variance is attributable to factors 1 - 18 (inclusive).

The criterion for factor extraction i.e. determining the number of factors proposed for use in the model is Eigen values greater than one as suggested by Goddard and Kirby (1976<sup>219</sup>), and Overall and Klett (1974<sup>390</sup>). According to Goddard and Kirby (1976<sup>219</sup>), a satisfactory amount of explained variance is:

"Usually provided by all those Eigen - vectors with Eigen - values greater than 1.0" p24.

**Table 68: Initial Statistics**

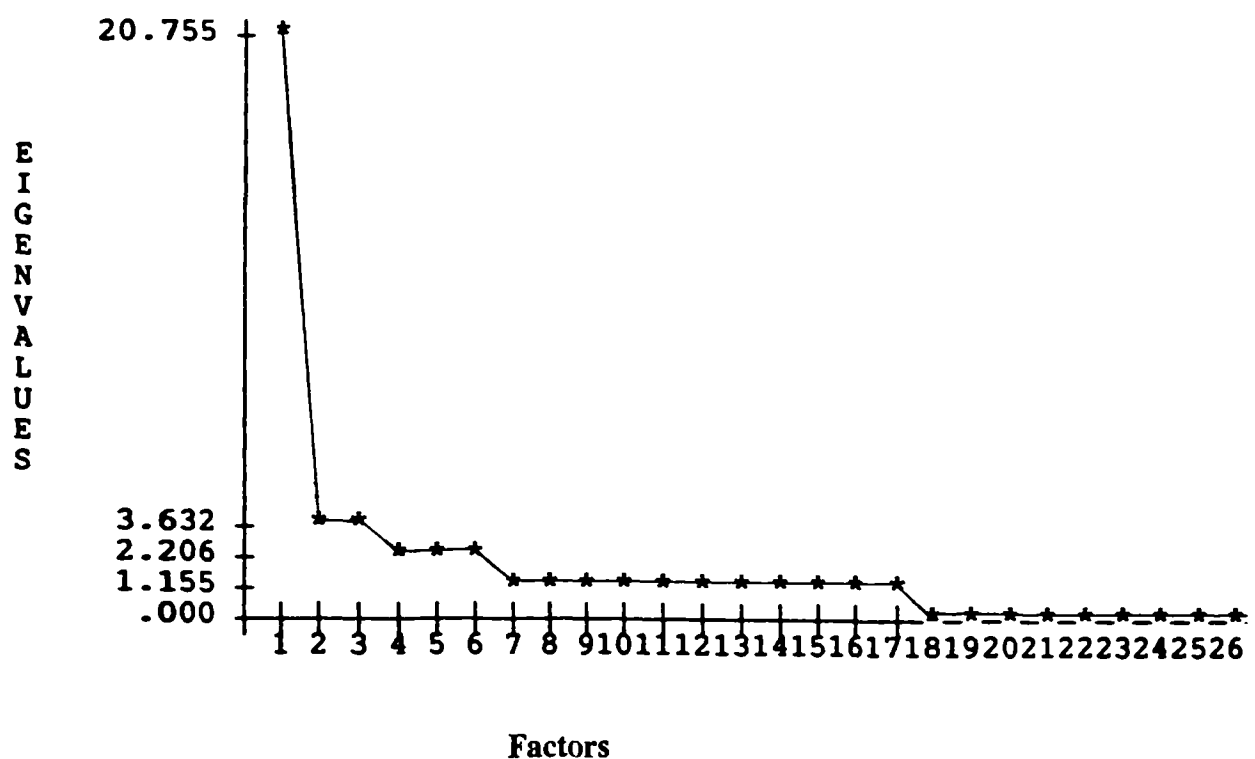
Variable	Communality	Factor	Eigenvalue	Pct of Var	Cum Pct
COMMUIMP	1.00000	* 1	20.75477	27.7	27.7
MEETIMP	1.00000	* 2	3.93976	5.3	32.9
EMPWEIMP	1.00000	* 3	3.63202	4.8	37.8
LEADSIMP	1.00000	* 4	2.91301	3.9	41.7
MOTIVIMP	1.00000	* 5	2.51755	3.4	45.0
SUPEVIMP	1.00000	* 6	2.20630	2.9	48.0
TEAMBIMP	1.00000	* 7	1.99456	2.7	50.6
TENTWIMP	1.00000	* 8	1.87927	2.5	53.1
DECABIMP	1.00000	* 9	1.69921	2.3	55.4
DECISIMP	1.00000	* 10	1.66385	2.2	57.6
DELEGIMP	1.00000	* 11	1.61567	2.2	59.8
HELTSIMP	1.00000	* 12	1.49803	2.0	61.8
MANCHIMP	1.00000	* 13	1.38490	1.8	63.6
CONFLIMP	1.00000	* 14	1.29162	1.7	65.3
MATIMIMP	1.00000	* 15	1.19708	1.6	66.9
MANPCIMP	1.00000	* 16	1.15465	1.5	68.5
MATPLIMP	1.00000	* 17	1.08095	1.4	69.9
NEGMAIMP	1.00000	* 18	1.06309	1.4	71.3
NEGSUIMP	1.00000	* 19	.99522	1.3	72.6
NGSUPIMP	1.00000	* 20	.96950	1.3	73.9
PLTPLIMP	1.00000	* 21	.93348	1.2	75.2
PRDMCIMP	1.00000	* 22	.90551	1.2	76.4
PROGDIMP	1.00000	* 23	.84978	1.1	77.5
PRGMTIMP	1.00000	* 24	.81856	1.1	78.6
QULTYIMP	1.00000	* 25	.81251	1.1	79.7
SITOGIMP	1.00000	* 26	.78729	1.0	80.7
SECRUIMP	1.00000	* 27	.72813	1.0	81.7
JOBSTIMP	1.00000	* 28	.70927	.9	82.7
CREATIMP	1.00000	* 29	.67455	.9	83.6
PESTRIMP	1.00000	* 30	.64242	.9	84.4
BUDGTIMP	1.00000	* 31	.61841	.8	85.2
COPACIMP	1.00000	* 32	.60295	.8	86.0
COESTIMP	1.00000	* 33	.55731	.7	86.8
FINANIMP	1.00000	* 34	.55013	.7	87.5
ADVETIMP	1.00000	* 35	.52965	.7	88.2
MARESIMP	1.00000	* 36	.50526	.7	88.9
INSURIMP	1.00000	* 37	.49210	.7	89.6
CODPRIMP	1.00000	* 38	.45638	.6	90.2

Variable	Communality	Factor	Eigenvalue	Pct of Var	Cum Pct
FOCASIMP	1.00000	* 39	.44302	.6	90.8
PROJRIMP	1.00000	* 40	.42993	.6	91.3
COLAWIMP	1.00000	* 41	.41772	.6	91.9
TENDRIMP	1.00000	* 42	.39673	.5	92.4
LAWPYIMP	1.00000	* 43	.38115	.5	92.9
STRAPIMP	1.00000	* 44	.34553	.5	93.4
CODAFIMP	1.00000	* 45	.33374	.4	93.8
PROTRIMP	1.00000	* 46	.31193	.4	94.2
ETMAGIMP	1.00000	* 47	.30006	.4	94.6
ETMALIMP	1.00000	* 48	.28889	.4	95.0
ETSUPIMP	1.00000	* 49	.27948	.4	95.4
EMLEGIMP	1.00000	* 50	.26637	.4	95.8
JOBSPIMP	1.00000	* 51	.25006	.3	96.1
OGSTRIMP	1.00000	* 52	.22967	.3	96.4
OGCULIMP	1.00000	* 53	.22355	.3	96.7
OGCUMIMP	1.00000	* 54	.20766	.3	97.0
PLLAWIMP	1.00000	* 55	.20159	.3	97.2
DEMOTIMP	1.00000	* 56	.19320	.3	97.5
RESMGIMP	1.00000	* 57	.18034	.2	97.7
RESMLIMP	1.00000	* 58	.17823	.2	98.0
RESSUIMP	1.00000	* 59	.15650	.2	98.2
RESUPIMP	1.00000	* 60	.14967	.2	98.4
SETGOIMP	1.00000	* 61	.13694	.2	98.6
TEMAGIMP	1.00000	* 62	.13268	.2	98.7
TELABIMP	1.00000	* 63	.11099	.1	98.9
TESUBIMP	1.00000	* 64	.10949	.1	99.0
TEMSPIMP	1.00000	* 65	.10230	.1	99.2
COMPTIMP	1.00000	* 66	.09424	.1	99.3
CARDVIMP	1.00000	* 67	.09118	.1	99.4
CLITPIMP	1.00000	* 68	.07921	.1	99.5
NACULIMP	1.00000	* 69	.07445	.1	99.6
NEGGVIMP	1.00000	* 70	.06950	.1	99.7
NEGCLIMP	1.00000	* 71	.05850	.1	99.8
NEGTDIMP	1.00000	* 72	.05058	.1	99.9
PUBERIMP	1.00000	* 73	.03819	.1	99.9
COPETIMP	1.00000	* 74	.03630	.0	100.0
FORLGIMP	1.00000	* 75	.02568	.0	100.0



A 'scree test' is conducted and shown in Figure 19. A scree plots the Eigen values against the factors. The name 'scree', according to Cureton and D'Agostino (1983<sup>145</sup>) comes from the resemblance of such a plot to the rock slope of a mountain with a mass of rubble called a scree at the bottom. It will be seen from the scree plot that at factor 18, there is a break in the steady decreasing slope. An 18 factor model is therefore appropriate.

**Figure 19: Scree Plot**



Having extracted and ascertained the appropriate factor model, the next step is to judge how well the 18 factor model describes the original 75 variables. Computation of the proportion of variance in the 18 factor model, referred to as the communality variable, is displayed in Table 69 titled Final Statistics.

**Table 69: Final Statistics:**

Variable	Communality	Factor	Eigenvalue	Pct of Var	Cum Pct
COMMUIIMP	.69117 *	1	20.75477	27.7	27.7
MEETIMP	.58466 *	2	3.93976	5.3	32.9
EMPWEIMP	.69235 *	3	3.63202	4.8	37.8
LEADSIMP	.67707 *	4	2.91301	3.9	41.7
MOTIVIMP	.73361 *	5	2.51755	3.4	45.0
SUPEVIMP	.73976 *	6	2.20630	2.9	48.0
TEAMBIMP	.66298 *	7	1.99456	2.7	50.6
TENTWIMP	.65491 *	8	1.87927	2.5	53.1
DECABIMP	.62321 *	9	1.69921	2.3	55.4
DECISIMP	.75180 *	10	1.66385	2.2	57.6
DELEGIMP	.62494 *	11	1.61567	2.2	59.8
HELTSIMP	.71391 *	12	1.49803	2.0	61.8
MANCHIMP	.72826 *	13	1.38490	1.8	63.6
CONFLIMP	.72003 *	14	1.29162	1.7	65.3
MATIMIMP	.74461 *	15	1.19708	1.6	66.9
MANPCIMP	.70494 *	16	1.15465	1.5	68.5
MATPLIMP	.78089 *	17	1.08095	1.4	69.9
NEGMAIMP	.77958 *	18	1.06309	1.4	71.3
NEGSUIMP	.85177 *				
NGSUPIMP	.82487 *				
PLTPLIMP	.67543 *				
PRDMCIMP	.73704 *				
PROGDIMP	.69932 *				
PRGMTIMP	.64781 *				
QULTYIMP	.67442 *				
SITOGIMP	.69850 *				
SECRUIMP	.73553 *				
JOBSTIMP	.55250 *				
CREATIMP	.72916 *				
PESTRIMP	.66994 *				
BUDGTIMP	.63968 *				
COPACIMP	.77465 *				
COESTIMP	.75328 *				
FINANIMP	.78356 *				
ADVETIMP	.78018 *				
MARESIMP	.83472 *				
INSURIMP	.71846 *				
CODPRIMP	.69172 *				
FOCASIMP	.61466 *				

Variable	Communality	Factor	Eigenvalue	Pct of Var	Cum Pct
PROJRIMP	.49014	*			
COLAWIMP	.64620	*			
TENDRIMP	.68032	*			
LAWPYIMP	.73633	*			
STRAPIMP	.67508	*			
CODAFIMP	.71082	*			
PROTRIMP	.67150	*			
ETMAGIMP	.75166	*			
ETMALIMP	.75497	*			
ETSUPIMP	.75332	*			
EMLEGIMP	.70440	*			
JOBSPIMP	.59828	*			
OGSTRIMP	.69628	*			
OGCULIMP	.67343	*			
OGCUMIMP	.75519	*			
PLLAWIMP	.68863	*			
DEMOTIMP	.71343	*			
RESMGIMP	.79498	*			
RESMLIMP	.81410	*			
RESSUIMP	.78284	*			
RESUPIMP	.74404	*			
SETGOIMP	.73035	*			
TEMAGIMP	.83227	*			
TELABIMP	.84142	*			
TESUBIMP	.76519	*			
TEMSPIMP	.84355	*			
COMPTIMP	.74984	*			
CARDVIMP	.70619	*			
CLITPIMP	.75149	*			
NACULIMP	.60230	*			
NEGGVIMP	.73479	*			
NEGCLIMP	.73593	*			
NEGTDIMP	.72865	*			
PUBERIMP	.66957	*			
COPETIMP	.70763	*			
FORLGIMP	.55529	*			

The range of communality values is from zero to one (0 - 1). A value of zero indicates that common factors explain none of the variance. A value of 1, indicates that all the variance is explained by the presence of the common factor.

For example, in Table 69, the communality score for 'Maresimp' (Market Research) is 0.83472, suggesting that much of the variance is explained by a common factor. The job dimension 'Meetimp' (Conducting Meetings) and 'Puberimp' (Public Relations), have minimum communality with these factors.

The next stage is the rotation phase. The rotation phase simplifies the relationship between factor and variables in order to make them conceptually meaningful. Varimax rotation is employed in the transformation of initial matrix. The rotated factor matrix presented in Table 70 shows the eighteen factors and the job dimensions associated with each factor. The coefficient for each variable is substantially high, and significantly different from zero.

For example, Company law (Lawpyimp) is 0.74869, and is positively correlated with five other dimensions in Factor 1. The same principles apply to factors 2 - 18, each consisting of job dimensions that are positively correlated with one another.

**Table 70: Rotated Factor Matrix**

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
LAWPYIMP	.74869				
PLLAWIMP	.72880				
COLAWIMP	.67315				
EMLEGIMP	.65949				
CLITPIMP	.62220				
STRAPIMP	.52505				
OGSTRIMP					
CODPRIMP					
CODAFIMP					
OGCULIMP					
JOBSTIMP					
MATPLIMP		.78564			
PRDMCIMP		.68572			
MANPCIMP		.63562			
PLTPLIMP		.62355			
PRGMTIMP		.61460			
SITOGIMP		.60049			
QULTYIMP		.52953			
PROGDIMP					
TENTWIMP					
TEMSPIMP			.85205		
TEMAGIMP			.83079		
TELABIMP			.81243		
TESUBIMP			.78396		
DEMOTIMP					
NEGSUIMP					
NEGMAIMP					
NGSUPIMP					
COESTIMP				.54701	
BUDGTIMP				.52061	
COPACIMP					
RESMGIMP				.71366	
RESSUIMP				.70487	
RESUPIMP				.67546	
RESMLIMP				.67149	
COPETIMP					

FACTOR 6   FACTOR 7   FACTOR 8   FACTOR 9   FACTOR 10

ETSUPIMP        .73639  
 ETMAGIMP        .72505  
 ETMALIMP        .64304  
 PROTRIMP

MOTIVIMP                .74994  
 LEADSIMP                .63082  
 SUPEVIMP                .57064  
 FOCASIMP  
 PESTRIMP

MARESIMP                        .71809  
 ADVETIMP                        .70162  
 INSURIMP

OGCUMIMP  
 PROJIMP  
 JOBSPIMP                                .64854

COMMUIMP  
 CARDVIMP

CONFLIMP                                .76132  
 MANCHIMP                                .57584  
 NEGTDIMP

COMPTIMP  
 FORLGIMP  
 NEGGVIMP  
 NACULIMP

CREATIMP  
 FINANIMP

DECABIMP  
 SECRUIMP  
 TEAMBIMP

FACTOR 11   FACTOR 12   FACTOR 13   FACTOR 14   FACTOR 15

PROJRIMP  
JOBSPIMP  
COMMUIMP  
CARDVIMP

CONFLIMP  
MANCHIMP  
NEGTDIMP

COMPTIMP      .80526  
FORLGIMP  
NEGGVIMP  
NACULIMP

CREATIMP              .73451  
FINANIMP

DECABIMP                      .67960  
SECRUIMP

TEAMBIMP

TENDRIMP                      .60338  
NEGCLIMP                      .57167  
SETGOIMP                      .51338

MEETIMP                              .57915  
PUBERIMP                              .51153

DECISIMP  
DELEGIMP

EMPWEIMP  
MATIMIMP

HELTSIMP

	FACTOR 16	FACTOR 17	FACTOR 18
TEAMBIMP			
TENDRIMP			
NEGCLIMP			
SETGOIMP			
MEETIMP			
PUBERIMP			
DECISIMP	.73051		
DELEGIMP			
EMPWEIMP		.73312	
MATIMIMP			
HELTSIMP			.66058



All the eighteen factors are listed below, together with the full title of each job dimension.

<u>Variable Labels</u>	<u>Variable Full Title (Job Dimension)</u>
<u>Factor 1</u>	
Lawpyimp	Company law
Pllawimp	Planning law
Colawimp	Construction law
Emlegimp	Employment legislation
Clitpimp	Client/consumer protection law
Strapimp	Company strategic planning
<u>Factor 2</u>	
Matplimp	Materials planning & control
Prdmcimp	Productivity control & maintenance
Manpcimp	Manpower planning & control
Pltplimp	Plant planning & control
Prgmtimp	Programme maintenance(update)
Sitogimp	Site organisation
Qultyimp	Quality control
<u>Factor 3</u>	
Temspimp	Terminate/Dismissal: Supervisor
Temagimp	Terminate/Dismissal: Management
Telabimp	Terminate/Dismissal: Manual labour
Tesubimp	Terminate/Dismissal: Subcontractor
<u>Factor 4</u>	
Coestimp	Costing and estimating
Budgtimp	Budgetary control

Factor 5

Resmgimp	Recruit/Select: Management
Ressuimp	Recruit/Select: Subcontractor
Resupimp	Recruit/Select: Supervisor/Foreman
Resmlimp	Recruit/Select: Manual labour

Factor 6

Etsupimp	Employee training: Supervisor/Foreman
Etmagimp	Employee training: Management
Etmalimp	Employee training: Manual labour

Factor 7

Motivimp	Motivation of others
Leadsimp	Leadership
Supevimp	Supervision of others

Factor 8

Maresimp	Market research
Advetimp	Advertising and promotion

Factor 9

Jobspimp	Job analysis and specification
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Factor 10

Conflimp	Managing conflict/crisis
Manchimp	Managing change

Factor 11

Comptimp	Use of computer technology
----------	----------------------------

Factor 12

Creatimp	Creativity
----------	------------

Factor 13

Decabimp	Decanting building
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Factor 14

Tendrimp	Competitive tendering
Negclimp	Negotiate client
Setgoimp	Setting objectives and goals

Factor 15

Meetimp	Conducting meetings
Puberimp	Public relations

Factor 16

Decisimp	Decision making
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Factor 17

Empweimp	Employee welfare
----------	------------------

Factor 18

Heltsimp	Health and safety
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Factors 1 to 18 are orthogonally distinct, and capable of identity. Factor 1 comprises skills/knowledge (job dimensions) that are essentially related to the legal aspects of refurbishment management, whereas factor 2 consists of operational management skill/knowledge. All the 18 factors are listed below and classified under 18 different management skills/knowledge groups.

Factor 1	Legal skills/knowledge for refurbishment management
Factor 2	Operational management skills/knowledge
Factor 3	Skills/knowledge associated with dismissal of labour force
Factor 4	Financial management skills/knowledge
Factor 5	Skills/knowledge associated with recruitment of labour force
Factor 6	Skills/knowledge associated with employee training
Factor 7	Interpersonal or management of people skills
Factor 8	Skills/knowledge related to the market place
Factor 9	Skill/knowledge associated with job analysis and specification
Factor 10	Skills/knowledge associated with managing in a changing environment
Factor 11	Skills/knowledge associated with the use of computer technology
Factor 12	Skills/knowledge of creativity
Factor 13	Skill/knowledge associated with decanting of building
Factor 14	Skills/knowledge related with competition to win work
Factor 15	Skill/knowledge of public relations and conducting meetings
Factor 16	Skills/knowledge associated with decision making
Factor 17	Skill/knowledge associated with employee welfare
Factor 18	Health and safety

From a course designer's perspective, each of the eighteen groupings represents core topics that need to be taught collectively at each appropriate level of refurbishment management. The job dimensions that are absent from the factor groups also constitute refurbishment management practice, and the course designer would need to accommodate them in the overall education and training of refurbishment managers, as appropriate.

Through data reduction, this author has been able to establish statistically, correlations between job dimensions (skills/knowledge). In all, education and training needs for refurbishment have been grouped into eighteen factors. As will be seen in the next chapter, these factor groups are used in the development of a model for postgraduate and continuing education/training for refurbishment.

#### **7.10. Conclusions And Recommendations**

This chapter examined the nature and extent of management education and training that exist within refurbishment organisations. Both the preferences of organisations and managers on education/training delivery methods, together with factors, that influence course selection and attendance were also considered.

Education and training needs of both managers and organisations were established. Also in this chapter, an attempt was made to identify which set(s) of job dimensions are statistically related, i.e. job dimensions that are distinct and required together for course design purposes.

The conclusions that follow from this study are:

(i). There is little, if any, management courses, in-house or external, directly geared towards refurbishment, testifying to under course provision. Yet evidence suggests that for both organisations and refurbishment managers, there is an urgent need for appropriate management education/training geared towards refurbishment. Educational establishments must therefore urgently respond to this need.

(ii). There is a general consensus amongst refurbishment organisations, that evaluation of management education/training courses is an area which they find the greatest difficulty. There is an urgent need for formal and generally accepted methods for evaluating education/ training programmes within the construction industry. Any evaluation approach would need to relate courses attended to on-the-job performance.

(iii). Over 90% of all participating organisations in the present study prefer in-house courses to external courses for reasons of cheapness and direct relevance in meeting the needs of the organisation. Similarly, refurbishment managers prefer in-house courses to external courses.

(iv). As regards in-house training methods, on-the-job (with guidance) is most preferred by managers. This reflects the importance of hands-on experience backed up with coaching, job rotation, and mentoring.

(v). There is general agreement among training officers that management courses for refurbishment should be qualification oriented, and need to be designed on a modular format. Modular courses would provide flexibility and encourage managers to be better qualified.

(vi). Both managers and organisations prefer short courses of not more than 2 - 3 days duration.

(vii). Commitment to education and training from top management was cited as the highest promoting factor in the provision of management education and training. In-house courses geared towards the needs of organisations, and willingness of managers to learn are also promoting factors. Since senior management normally control budgets, a demonstration of intent would involve making adequate financial provision for education/training.

(viii). Cost and time for sending managers on courses were cited by organisations as the most inhibiting factors in the provisions of management education and training. The implication of this is that even if educators respond to contractors' wishes by designing courses relevant to refurbishment managers, costs and timing of such courses would be the contractor's major concerns. However, unless top management are prepared to invest in the education and training of their employees, there will be a shortage of high calibre refurbishment managers.

(ix). Managers contend that skills/knowledge for refurbishment are best developed through a mixture of on-the-job training (with guidance), in-house courses and

external courses. Educators should aim to provide the 'right' mix of education/training methods if refurbishment managers are to acquire and develop the skills/knowledge which they need for their job. It is recommended that further research be conducted to establish which of the training methods is most appropriate for the acquisition of a given skill/knowledge or sets of skills/knowledge.

(x). There is general consensus among managers and training officers that courses must be convenient in timing and location. The preference is for courses to be available locally, and nearer company premises in order to avoid taking managers away from work more than absolutely necessary.

(xi). As regards the time of year to attend courses, managers prefer the winter months, followed by the autumn months. For educators, they can plan and concentrate their efforts seasonally, rather than spreading management courses throughout the year.

(xii). For refurbishment managers, course content and methods of training delivery are the two most influential factors for selecting courses. Courses would have to be designed to meet the needs of managers. This will help in encouraging more managers to attend courses.

(xiii). For refurbishment managers, willingness to learn more about their jobs, promotion & career development, and obtaining qualifications are, the three most influential factors for course attendance. Courses would have to be qualification oriented.



(xiv). Management education/training need for managers and organisations have been established. The ten job dimensions for which managers most need education/training are:

- \* Forecasting & planning
- \* Analysis of project risk/uncertainty
- \* Use of computer technology
- \* Employee training: Supervisor/foreman
- \* Health & safety
- \* Quality control & assurance
- \* Employee training: Management
- \* Budgetary control
- \* Competitive tendering
- \* Negotiate client

The ten most cited job dimension currently needed by refurbishment organisations are:

- \* Health & safety
- \* Programming of the works
- \* Public relations/Tenant liaison
- \* Managing time
- \* Communication
- \* Security
- \* Contract law
- \* Pricing of the works
- \* Quality management
- \* Leadership

(xv). For refurbishment managers, the need for education/training in job dimensions associated with financial management tends to increase with seniority. Operational management skills/knowledge tend to increase at lower management levels.

Courses designed to accommodate financial management skills/knowledge should attract and benefit senior managers. Similarly, courses geared towards operational management skills/knowledge should benefit junior managers, and to a lesser extent, middle managers.

(xvi). Education/training needs for forecasting & planning, analysis of project risks/uncertainty, health & safety, and interpersonal skills (management of people), are equally relevant at all levels of management. If courses are designed in such a way that managers at each level of management opt for modular training, responsibility of job holders at different management levels would need to be accommodated.

(xvii). Through data reduction, correlations between job dimensions have been statistically established. Education/training needs for managers can be grouped under 18 factors or groups of job dimensions. The job dimensions which are absent from these groupings would also need to be accommodated in course structures, depending on depth and coverage, since they constitute refurbishment management practice.

## **CHAPTER EIGHT**

### **DESIGNING MANAGEMENT EDUCATION AND TRAINING PROGRAMMES FOR REFURBISHMENT MANAGERS**

## **8.0. DESIGNING MANAGEMENT EDUCATION AND TRAINING PROGRAMMES FOR REFURBISHMENT MANAGERS**

### **8.1. Introduction**

The criticisms levelled against management education/training programmes are well known. These have most often been aimed at Business Schools and the content and types of their management programmes (Livingston, 1971<sup>332</sup>; Pfeffer, 1981<sup>399</sup>; Mintzberg, 1975<sup>355</sup>, 1987<sup>357</sup>; and Samuelson, 1990<sup>435</sup>).

Livingston's (1971<sup>332</sup>) indictment of the Business Schools is well publicised. Livingston noted that " Many highly intelligent and ambitious men are not learning from either formal education or their own experience what they most want to know to build successful careers in management. This failure is due, in part, to the fact that many crucial management tasks are not taught in management education programs" p 88.

Pfeffer (1981<sup>399</sup>) argued that management education in management schools does not predict subsequent career success of managers because of the type of training imparted. Mintzberg's (1987<sup>357</sup>) view is that management education should re-orient its priorities, and should emphasize more skills training, with more effort devoted to experiential education.

There are other writers who are of the view that education and training programmes developed for managers do not take into account the way adults learn. Knowles, 1972a<sup>303</sup>, 1972b<sup>304</sup>, 1984<sup>305</sup>; and Daloisio and Firestone, 1983<sup>148</sup>, are of the view that the ways adults learn differ from those of children/youth, and need to be accommodated in management education/training programmes.

There are, also, other writers who contend that management education/training does not take account of managers' experience and their environment (Davies and Easterby-Smith, 1984<sup>149</sup>; Braddick, 1984<sup>58</sup>, 1987<sup>59</sup>; and Coulson-Thomas, 1990<sup>134</sup>, 1992<sup>135</sup>). Davies and Easterby-Smith suggest that the best training ground for managers has always been the workplace, and that when managers are asked to recall events which particularly contributed to their development, usually they recount situations which have occurred at work.

Braddick (1987<sup>59</sup>) noted that "Most learning of managers occur in the process of doing a job" p. 11.

It is the purpose of this chapter to set out a framework for educating and training refurbishment managers. Information obtained from the current study on managers' education/training needs, together with their preferences on education/training methods, form the basis of the framework. Learning theories on how managers learn, which are gleaned from a thorough review of literature, will also be incorporated.

A model for post-graduate and continuing education for refurbishment will also be devised. The model will be structured on a modular format, incorporating eighteen factors, as derived in the last chapter through the factor analysis technique. Each of the eighteen factors represent a module on which the model is based. The model will also give due consideration to the current trends in management education and training, especially in the wake of the studies conducted by Constable and McCormick (1987<sup>123</sup>), Handy et al. (1987<sup>244</sup>), CNAA (1988<sup>137</sup>) and NCVQ (1991<sup>374</sup>) on issues concerning the National Vocational Qualification (NVQ), Credit Accumulation and Transfer (CAT), and Accreditation for Prior Learning (APL).

The next section of this chapter will consider the concept of learning and the implications of learning theories on the development of management education and training programmes.

## **8.2. The Concept Of Learning And Learning Theories**

Learning, according to Kolb (1984<sup>310</sup>), is the process whereby knowledge is created through the transformation of experience. Similarly, Bass and Vaughan (1966<sup>26</sup>) see learning as a relatively permanent change in behaviour that occurs as a result of practice and experience. According to Wilson (1980<sup>505</sup>), learning is a cognitive activity which involves the use of the intellect for the development and structuring of understanding about oneself and the world in which one lives.

Honey and Mumford (1982<sup>266</sup>) inform us that a manager has learned something when:-

- (i) He knows something he did not know earlier, and can show it.
- (ii) He is able to do something he was not able to do before.

It would appear from the above definitions that practice and experience are called for if learning is to be successful, also, something new comes out of learning which is beneficial to managers and improves their knowledge and skills repertoire. Learning is also a continuous process involving organising and reorganising known facts on the basis of new revelations.

The literature on learning theories has received a great deal of contributions from various writers interested in the way people learn and develop. A thorough review of literature, however, points to seven main "schools of thought" which account for much of the variety of approach given to management education and training. It should be stressed that these schools of thought are not independent of each other. Burgoyne (1975<sup>78</sup>) informs us that there are substantial areas of overlap. He pointed out that, "Programmes cannot necessarily be neatly attributed exclusively to one or other type though they often belong predominantly to one", p. 1.

Burgoyne (1975<sup>78</sup>) went further to stress that the "learning processes involved in management development appear to be complex and varied, and it is likely that most of the schools of thought illuminate a significant facet of this complex reality", p. 1.

The seven main schools of thought on learning theory are as follows:-

- (i). The Conditioning school.
- (ii). The Trait Modification school.
- (iii). The Information Transfer school.
- (iv). The Cognitive school.
- (v). The Experiential school.
- (vi). The Social Influence school.
- (vii). The Programmatic school.

These schools of thought will be considered individually, highlighting their implications to education and training programmes for managers.

#### (i). The Conditioning School

The conditioning school of learning has been strongly associated, for complex reasons, with the highly empirical approach of experimental psychology. Within this school of thought there are sub-schools and varieties of opinion and approach. However, the two main divisions are the 'operant' and the 'instrumental' conditioning schools.

The operant conditioning school is associated with Pavlov (1927<sup>391</sup>) and his dogs. In this process, a response (e.g. salivating) already associated with a stimulus (e.g. sight of food) becomes attached to a new stimulus (e.g. a bell) by virtue of the two stimuli being presented together over a period of time. The theories associated with operant conditioning are often referred to as "contiguity theories" because of the pairing of stimuli.



The instrumentation conditioning school of thought is credited to Thorndike (1913<sup>480</sup>) and develops from the premise that responses that are in some ways "rewarded" by a "satisfying" event are more likely to be repeated in the future under similar stimulus conditions, and vice versa for "punishing events". Other interpretations of learning have been developed from this ideology, such as the complex formal theory of Hull (1943<sup>271</sup>) to the empirical and pragmatic "behavioural engineering" of Skinner (1957<sup>452</sup>).

The underlying premise on which the conditioning theory is based is embodied on the general common sense "carrot and stick" beliefs about teaching and learning. This is exemplified by Skinner's (1958<sup>453</sup>) "programmed learning" where he attempted to evoke the correct responses from learners and to 'reward' or 'punish' them based on whether they are right or wrong.

Although Burgoyne (1975<sup>78</sup>) acknowledged that certain social skills training embody this way of thinking, he maintained that the application of this form of learning is more relevant to operation training than to management training. Burgoyne (1975<sup>78</sup>) also argued that to incorporate this learning approach into management training means that the management trainer "... has to know in considerable detail exactly what the learner has to learn in behavioural terms", p. 2.

#### (ii). The Trait Modification School

The trait modification school assumes that a complete psychology of learning would be a description of all the variables or dimensions on which individuals vary,

together with an understanding of how they vary and also how their qualities and characteristics change. The trait modification theory appears to dwell more on the psychology of an individual than on his learning process. This is a point which Burgoyne (1975<sup>78</sup>) observed and notes, "Strictly speaking the trait school of thought is a general approach to the psychology of the individual rather than a theory of the learning process itself", p. 2.

Like the conditioning school, there are variations within the Trait Modification school of thought. The works of Cattell (1950<sup>95</sup>) and Allport (1937<sup>4</sup>) have received the most attention in connection with the Trait Modification School. Cattell (1950<sup>95</sup>) is of the view that there are main traits which characterise all people, and has attempted through psychometrics to construct tests and measures to place people in these dimensions. Allport (1937<sup>4</sup>), on the other hand, believes that people may be characterised by traits which are individual to them.

In terms of management education and training programmes, the concept of the Trait Modification school takes the form of conceiving that an individual has a set of knowledge, skills and attitudes, and needing another. The skills, knowledge and attitudes which an individual already possesses can be studied by the use of psychometric measures. What the individual needs can be discovered by appraising the job he/she performs. In effect the difference between what the individual has, and what he needs can be taken to be "the definition of the relevant learning goals for that individual", (Burgoyne, 1975<sup>78</sup>) p.2.

In terms of management education and training, Burgoyne (1975<sup>78</sup>) notes that the basic assumption of the Trait Modification school is that "... the learner is a passive entity shaped entirely by the management development system... The trainer or educator is seen as the manager of this process who influences the student 100% while himself being influenced 0% in return", p. 3.

### (iii). Information Theory School

The concept of the Information Theory school is that an individual is a system which takes in, stores, processes and outputs information. There are also different variants to the Information Theory schools with their origins being founded on the interpretation of information (Broadbent, 1966<sup>68</sup>; Burgoyne, 1975<sup>78</sup>; Burgoyne and Stuart, 1978<sup>82</sup>). At one extreme, 'information' is given the common sense meaning, such as those contained in telephone messages, books and descriptions of procedures in performing tasks. Burgoyne (1975<sup>78</sup>) and Burgoyne and Stuart (1978<sup>82</sup>) admit that much of the work related to education in schools and higher education falls into this category. At the other extreme are theoretical propositions, which stem from systems theory and cybernetics. "Information", in this regard, is seen as a flow of energy that has an effect larger than the direct impact of that energy itself.

The main concern here is on how information flows and is processed, so that the system maintains some kind of equilibrium with its environment. In the context of learning, the systems and cybernetics approach is restricted to the total process by which a system develops its capacity to survive as a result of its interactions with its

environment. This, according to Burgoyne (1975<sup>78</sup>), is a broader approach than the traditional psychological one of enduring change in actual or potential behaviours as a result of experience. Ackoff and Emery (1972<sup>1</sup>) are also of the view that the system theory approach to learning is a radical departure from the traditional psychological approach.

In terms of the impact of the Information Theory school on management education and training programmes, Burgoyne (1975<sup>78</sup>) notes that, "Significant educational issues in this approach are such questions as how to give the information through the right media so that they can be absorbed through the right senses (hearing, vision), what is the right rate to give information, what sequence is appropriate in putting over a particular body of knowledge", p.4. Burgoyne (1975<sup>78</sup>) concludes that "... many management development programmes, especially those based on institutions of higher education, and leading to professional or academic qualifications, are still strongly influenced by this subject content transfer approach", p.4.

#### (iv). The Cognitive School

The Cognitive school of thought is based on the concept that an individual develops, evolves his/her own understanding or "personal map" of the world in the light of his/her experience in it. This map represents his/her conscious or unconscious knowledge and understanding, and steers his/her actions. The cognitive school recognises an individual as a 'knowing' being rather than as a simple or complex mechanism.

The cognitive school, like the previously mentioned schools of thought, has within it several sub-schools or theories such as Gestalt theories (Koffa, 1935<sup>307</sup>), Lewin's (1935<sup>328</sup>) field theory and Kelly's (1955<sup>294</sup>) theory of personal construct.

All the theories on which the Cognitive school is based emphasise discovery and insight as the learning process. Kelly (1955<sup>294</sup>) considers an individual as "the scientist of his own experience", developing interpretations of the world that help him or her deal with it. The Cognitive school also recognises the thinking and reflective processes which lead to insight and the learning of new solutions by interpreting experience in new ways.

Gestalt theory differs from behaviourist theory in preferring a holistic to an atomic approach. In the behaviourist tradition, the tendency is to break down behaviours and traits into their sub-units, so as to understand them better. The Gestalt view is that the wholes are greater than their parts, and that learning and insight involve grasping bigger wholes.

As regards management education and training programmes, the cognitive theory approach is to assist managers to improve their skills/knowledge repertoire, by thinking about them and testing them out. Burgoyne (1975<sup>78</sup>) observed that the cognitive theory approach to learning is, "one that tends to be taken in many of the management development activities which organisations run for their own managers, especially when the staff involved come from careers in management rather than as subject experts", p. 5.

### (v). The Experiential School

The experiential school rejects that it is useful to attempt to explain the unfamiliar complex phenomenon of people and how they learn through a simplified model. This is seen as leading to a failure to perceive and respond to the 'whole' person, since simplified models by definition must leave something out. The experiential view recognises that the person has freedom of choice and action, and the capacity to initiate rather than simply respond to circumstances. In experiential learning, people have intrinsic capabilities of developing and learning. One way of interpreting the experiential view is by saying that the teacher or theorists should not distance themselves from their students. Applications of experiential learning tends to emphasise the "affective" side of people, by insisting on working on problems that are subjectively real and important to the people concerned; by focusing on the emotional and intellectual contents of people's experiences.

As Roskin (1976<sup>429</sup>) notes, "The philosophy behind experiential learning is to place the student in an environment where he can assimilate information from being personally involved", p. 184.

Chickering's (1976<sup>113</sup>) view of experiential learning is that it occurs when changes in judgements, feelings, knowledge or skills result for a particular person from living through an event or events.

Lowe (1993<sup>333</sup>) reviewed the literature on experiential learning and noted that, "... educationalists consider experiential learning to be the most significant aspect in personal development", p. 178.

It is the work of Dewey (1938<sup>160</sup>) that best articulates the guiding principles for programmes of experiential learning in higher education (Kolb, 1984<sup>310</sup>). In one of his publications titled "Experience and Education", Dewey (1938<sup>160</sup>) attempted to bring some understanding to the growing conflict between "traditional" education and his "progressive" approach. He also outlined the directions of change implied in his approach. Dewey's (1938<sup>160</sup>) view is that, "... there is an intimate and necessary relation between the processes of actual experience and education", p.20.

The importance of experience in education and training is well known and generally accepted. According to Kemmis et al. (1977<sup>296</sup>), learning cannot be considered independently of experience, while Boydell (1976<sup>57</sup>) equates professional competence to the ability to learn from experience.

Several models of experiential learning have been produced, Table 71 presents the stages attached to the models. In the main, most experiential theories adopt a cyclical model with four distinct and mutually important stages.

**Table 71: Stages Of The Experiential Learning Cycle**

<b><u>Source</u></b>	<b><u>Doing</u></b>	<b><u>Reflection</u></b>	<b><u>Thinking</u></b>	<b><u>Planning</u></b>
Dewey (1938)	Impulse	Observation	Knowledge	Judgement
Lewin (1951)	Concrete Experience	Observation Reflection	Abstract Conceptualisation	Testing Implications in New situations
Kolb (1971)	Concrete Experience	Reflective Observation	Abstract Conceptualisation	Active Experimentation
Boydell (1976)	Problem Situations	Perceptions From Situations	Sort out And Make Sense	Action Plans
Juch (1981)	Doing	Sensing	Thinking	Addressing
Gibbs (1988)	Experience	Reflection	Conceptualisation	Experimentation
Honney and Mumford (1989)	Having an Experience	Review Experience	Conclude From Experience	Plan Next Experience
Dennison and Kirk (1990)	Do	Review	Learn	Apply
Handy (1990)	Test	Reflection	Question	Theory

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According to Boud et al. (1985<sup>52</sup>), one of the key processes to learning from experience is "reflection", a term associated with the intellectual and effective activities in which individuals engage to explore their experiences in order to lead to new understanding and appreciation. The importance of the reflective stage of the Experiential Learning Cycle is also supported by Maclean (1987<sup>338</sup>), Gibbs (1988<sup>216</sup>), Pedler et al. (1986<sup>397</sup>), Boxer (1985<sup>55</sup>) and Handy (1990<sup>243</sup>).



Maclean (1987<sup>338</sup>) is of the view that the reflective stage acts as a 'naming' or 'labelling' activity. Gibbs (1988<sup>216</sup>) notes that it is not sufficient simply to have an experience in order to learn. Without reflecting upon this experience, it may quickly be forgotten or its learning potential lost. Reflection should lead to a change (Pedler et al., 1986<sup>397</sup>) or reframing (Boxer, 1985<sup>55</sup>; Handy, 1990<sup>243</sup>).

While the four stages of the experiential cycle are necessary for progression, the review of literature would suggest that it is the area of reflection which, for busy practitioners, becomes neglected. This is, in the main, due to the pressure of work tasks, resulting in little or no reflective thought, and therefore no experimentation. This view is supported by Garrat (1987<sup>213</sup>) whose experience with directors has shown that they shy away from the reflection phase, and that their most common model of learning is through action and observation. Casey (1983<sup>92</sup>) is also of the view that one condition of learning which is not necessarily present in a manager's working life is the regular opportunity to pause and reflect before going further with his/her tasks.

However, Boud and Walker (1990<sup>53</sup>) believe that a manager's greater awareness as to what is happening in, and a more deliberate interaction with, the learning milieu will provide greater opportunities for a more fruitful learning experience.

According to Pedler et al. (1986<sup>397</sup>), if the learner is open and willing to learn, examination of his/her experiences will provide clues as to how existing behaviour can be modified.

There are other theories based on the experiential school of thought. The one that has received most recognition is 'Action learning' (Revans, 1980<sup>420</sup>, 1982<sup>421</sup>; Korey and Bogorya, 1985<sup>311</sup>). Korey and Bogorya (1985<sup>311</sup>) noted that, "The action learning concept is a direct extension of the experiential concept in that it too relies on the learner's interjection of past experience", p. 4.

Action learning had its origins in the 1960's. The early work was mainly pioneered by Professor R.W. Revans and was concerned with learning from tackling real problems rather than learning from classroom situations. Revans (1983<sup>422</sup>) is of the view that the learning process cannot be solely the acquisition of new programmed knowledge, but that it must be combined with insightful questioning and exploration of the unfamiliar, based on the managerial experience in dealing with change.

According to Revans (1983<sup>422</sup>), learning (L) is the sum of acquired programmed knowledge (P) and questioning insight (Q). Hence,

$$L = P + Q.$$

Programmed knowledge represents the traditional instruction material learned in traditional academic institutions, and questioning insight is the central thrust of the action learning concept. Consequently, the action learning concept differs from all other learning concepts, in that it goes beyond the quest for knowledge and understanding. It strives to develop and refine an individual's capabilities for enquiry and investigation.

The fundamental belief which underlies the action learning concept is that people find it relatively easy to learn from their peers in a context of active problem solving and solution implementation (Willmer, 1983<sup>503</sup>).

Revans (1982<sup>421</sup>) suggested that action learning programmes for managers should be constructed so that they conformed to the following conditions:

- (i) Participants should be volunteers who are strongly motivated to learn.
- (ii) Participants should be asked to study 'real' challenging problems.
- (iii) Participants should form groups so that the members not only work with each other, support, teach and learn from one another, but gain insights into themselves as well as their problems.
- (iv) The work should lead to action so that the suggested solutions should be given a trial.
- (v) Participants should be encouraged to discuss with other members of their group the impact that their learning has had on their personal value system.

The experiential school of thought is, however, not without its critics. Heron (1985<sup>254</sup>) suggests that people acquire a vested interest in failing to notice the inadequacies in the face of experience, which he terms "falsification". Sutton's (1983<sup>471</sup>) belief is that too often experience is the barrier to learning. Boydell (1976<sup>57</sup>) admits that a great deal of weight is often given to experience, but in practice experience becomes synonymous with 'age' or 'length of service'.

Juch (1981<sup>288</sup>) is of the opinion that few people, without help, are able to realise how and when they learn, and which clues trigger off their spontaneous and intuitive thoughts and behaviour. Green and Taber (1978<sup>229</sup>) reviewed the experiential movement and argued that despite its promise, it has "serious limitations". Their

argument is that the course content based on the experiential approach appears game-like, and the casual atmosphere discourages the critical reflections required for effective learning. Also, students who have insufficient observation skills will not benefit from such courses. Green and Taber (1978<sup>229</sup>) suggest that courses designed using the experiential theory approach, need a more integrated and programmed approach to each topic area, in which exercises are integrated with text materials.

#### (vi). The Social Influence School

The social influence school explains human behaviour in terms of continuous reciprocal interaction among cognitive, behavioural and environmental determinants (Bandura, 1977<sup>19</sup>; Davis and Luthans, 1980<sup>150</sup>). The concept of social learning theory revolves around the idea that what a person is, is socially defined. Also, since a person has the capacity to know or think, then the person has the image of himself/herself which he/she seeks to implement. The self image is defined fundamentally in terms of the person's relationships to other people. Latham and Saari (1979<sup>322</sup>) note, "... social learning theory specifically acknowledges that human thought, affect, and behaviour are influenced by observation as well as by direct experience", p. 240.

Some of the principles of learning associated with the social influence theory include identification and modelling, in which one person chooses another whom he/she wants to be like, copies his/her behaviour and identifies with his/her feelings and values. Also, getting people to 'act out' a different role, after which people tend to shift their attitudes and ideas more to those of that role.

Behaviour modelling training is based on the principle derived from social learning theory (Bandura, 1977<sup>19</sup>, 1986<sup>20</sup>). It states that trainees can learn vicariously from observing the behaviour of another person (model). There are four main processes in behaviour modelling training (Bandura, 1977<sup>19</sup>; Decker and Nathan, 1985<sup>151</sup>; Robertson et al., 1991<sup>424</sup>). These four stages are attention, retention, motoric reproduction and motivation. These four processes are well summarised by Decker and Nathan (1985<sup>151</sup>), when they note that, "In order for people to learn from behaviour modelling training, they must observe what the model is doing, remember what the model did, do what the model has done, and later when the appropriate time comes, want to use what they have learned", p. 4.

Several studies have been conducted on the effectiveness of behaviour modelling in training supervisors and managers. Studies by Moses and Ritchie (1976<sup>363</sup>), Burnaska (1976<sup>83</sup>), Smith (1976<sup>455</sup>), Latham and Saari (1979<sup>322</sup>), and Porras and Anderson (1981<sup>403</sup>) have shown that behaviour modelling training improves work behaviour and performance.

#### (vii). The Pragmatic School

The concept underlying the pragmatic school of thought is that there is nothing further to know about learning than is already known in common sense, and that teaching methods should be chosen on a purely trial and error basis, according to what appears to 'work'. Burgoyne (1975<sup>78</sup>) is of the view that the pragmatic school is 'atheoretical' and an 'odd one out' amongst the schools of thought on learning, since it does not have some kind of coherent theoretical base, which others have.

According to Burgoyne and Stuart (1978<sup>82</sup>), some applications of the case study method and the project method, embody the pragmatic school of thought, especially when the underlying rationale is simply that "most people seem to learn by experience of the problems concerned", p.104.

In terms of formal course approaches to management development, Burgoyne (1975<sup>78</sup>) is of the view that the case method rates as one of the most used. It would seem likely that there is a natural affinity between the pragmatic philosophy of the case method and the natural orientation of managers to be concerned with specifics, rather than generalities, and with having solutions that work, rather than understanding how they work.

This section of the chapter has considered the main schools of thought on learning, and their implications on management education and training programmes. The framework for management education/training for refurbishment devised in this study, will be based on some combinations of the learning theories, since no single theory of learning appears to be all embracing on its own. As Pedler (1974) informs us on learning in management education/training, "The problem is that learning theory is inadequate for the purpose and no single model of learning process seems adequate on its own. We must borrow from a number of theories", p. 182.

Also the work of Whetten and Cameron (1991<sup>495</sup>) on "Developing of Management Skills" used the combination of learning theories and proved successful.

Before going on to describe the framework devised in the current study for educating/training refurbishment managers, it is important to consider how adults learn, since managers involved in refurbishment are adults themselves. Consideration will also be given to the attempts made by writers on education and training, to assist managers in learning, by adopting appropriate learning styles.

### **8.3. Adult Learning.**

A literature review on adult learning suggests that the ways adults learn are different from children/youths, and this has implications in devising education/training programmes for managers, who are adults. As Knowles (1972a<sup>303</sup>), in one of his articles titled 'The manager as educator', pointed out, "... but the fact is that adults differ in certain crucial ways from youth as learners. This is an insight that has emerged from the growing body of research in adult education. It is an insight that is rapidly producing a whole new technology that is being given the name andragogy, which is the art of teaching grown ups", p.98.

In another of his publications titled 'Ways of learning: reactive versus proactive', Knowles (1972b<sup>304</sup>) suggest that in adult life, learning will take place for the most part only if the learner takes the initiative; teachers are not as 'omnipresent'.

Daloisio and Firestone (1983<sup>148</sup>) and Knowles (1984<sup>305</sup>) are of the view that many adult educational programmes are based on the traditional pedagogy approach, where the initiative in the transaction is almost wholly in the teacher; the role of the student is to react. Although agreeing that some learning results from being taught

this way, Knowles (1972b<sup>304</sup>) contends that the traditional pedagogy approach to education keeps the learner in a dependant role, and limits the learning to the boundaries set by the teacher.

According to Knowles (1972b<sup>304</sup>), "We have an obligation to help our students (adults) learn other proactive ways of learning", p. 285.

A comparison of the Characteristics of child and adult development has been summarised by Fryer (1977<sup>206</sup>), drawing from the works of Kelman (1961<sup>295</sup>) and Argyris (1971<sup>11</sup>). This comparison is shown below in Table 72.

**Table 72: Dimensions Of Human Development.**

<u>Characteristics of child learning to adult</u>	<u>Characteristics of adult learning to child</u>
1. Passive	1. Active
2. Dependent	2. Independent
3. Narrower range of behaviour	3. Broader range of behaviour
4. Shallower, more erratic interests	4. Deeper, more stable interests
5. Shorter time perspective	5. Longer time perspective
6. Subordinate role	6. Superordinate role
7. Lack of awareness of self	7. Awareness of self

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Source: Fryer, B.G. (1977), The Development of Managers in the Construction Industry, MSc. Thesis, University of Salford, U.K., pp. 89.



The differences in the ways adults learn when compared to children/youths will now be discussed under four main headings. These are:-

(i). An adult Is Self Directing

There is a need for adults to be treated as self-respectable, self-respecting and self-directing organisms. The implication of this is that when an adult finds himself in a situation in which he/she feels is being treated like a child (i.e. being talked down to, being told what to do, being disrespected), he/she feels the situation to be in conflict with his/her self-concept and seeks to flee from it or resist it. The child regards him/herself as dependant, whilst the adult is independent.

According to the principle of andragogy, the learning which highly motivates an adult, are the ones he/she diagnoses as needing him/herself. The implication of this is that it is important for the adult to have an active part in planning and carrying out his/her own learning experience.

(ii). An Adult Has A Wealth Of Experience

By virtue of having lived longer, any adult has accumulated more experience than he/she had as a youth. While a youth tends to regard experience as something that has happened to him/her, for the adult experience is him/her. The implication of this is that any group of adults will constitute a richer source for one another's learning than is true with youth. As Knowles (1972a<sup>303</sup>) observed, "... so that in the technology of adult education, we tend to make less use of the transmittal

techniques (lecture, assigned readings, audio-visual presentations) and greater use of experiential techniques (group discussions), case methods, critical incident processes, simulation exercises and skill practice", p. 101.

As earlier mentioned in this chapter, a negative consequence of the greater experience of the adult, is that he/she may become more set in his/her ways and may be less open to new ways of doing things. This would mean that some 'unfreezing' experience may be in order. Schein (1978<sup>440</sup>) is in support of this approach. This could be in the form of demonstration by experts, inter-departmental meetings, and by rotating assignments in order to observe new developments in other locations.

### (iii). Differences In Readiness To Learn

Adults differ from youths in their readiness to learn. The youth becomes ready to learn particular things in a natural sequence as dictated by his/her 'development tasks'. For example, an infant learns to crawl, then walk, and then to run. For an adult, he/she becomes ready to learn those things he/she needs to know and be able to do in order to cope effectively with his/her real life situations. The implications of this is on the importance of timing learning experiences to fit in with a manager's 'development tasks'. The teacher/trainer would need to be sensitive to the sequence of developmental tasks of the managers and schedule educational inputs accordingly.

#### (iv). An Adult Is Problem Centred

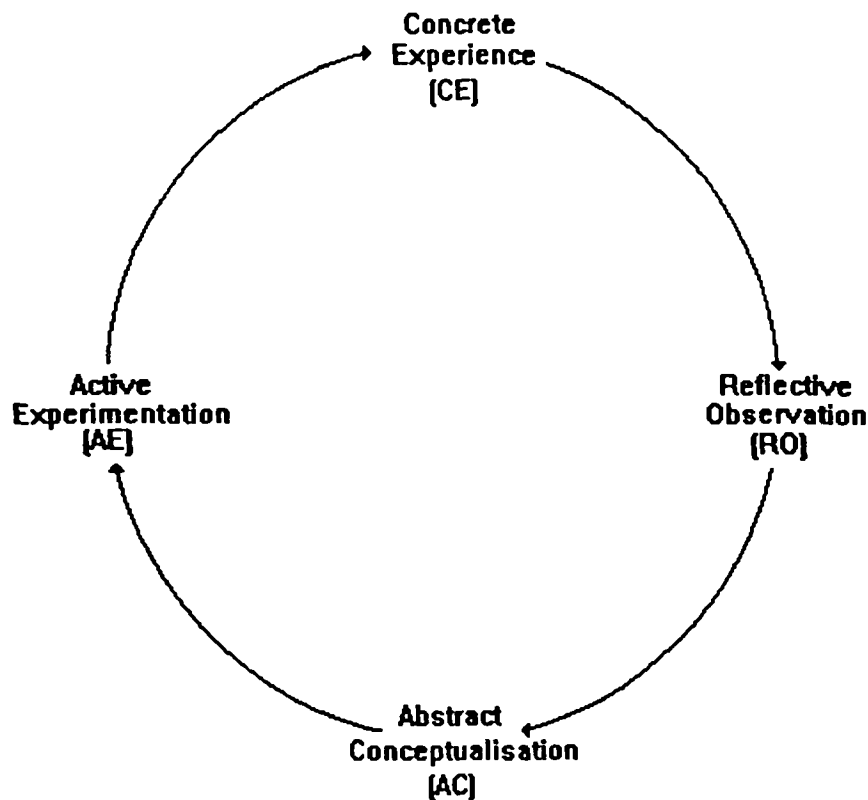
Unlike children/youths, who consider education as the accumulation of a reservoir of skills/knowledge that is hoped will be useful later, adults consider learning as a way to become more effective in dealing with 'real-life' problems as they affect them at present. In effect, for children/youths their time perspective is one of 'postponed application', while for adults it is one of 'immediate application'. Drucker (1981<sup>168</sup>), in his publication on "The practice of management", advocates learning for 'today' as a means of effective learning for managers.

Having discussed how adults (e.g. managers) learn, it is now appropriate at this juncture, to consider the attempts made by writers and practitioners interested in management education and training, in assisting managers to learn. An understanding of learning styles would also be useful in developing a framework for educating/training refurbishment managers.

#### 8.4. Learning Styles Of Managers

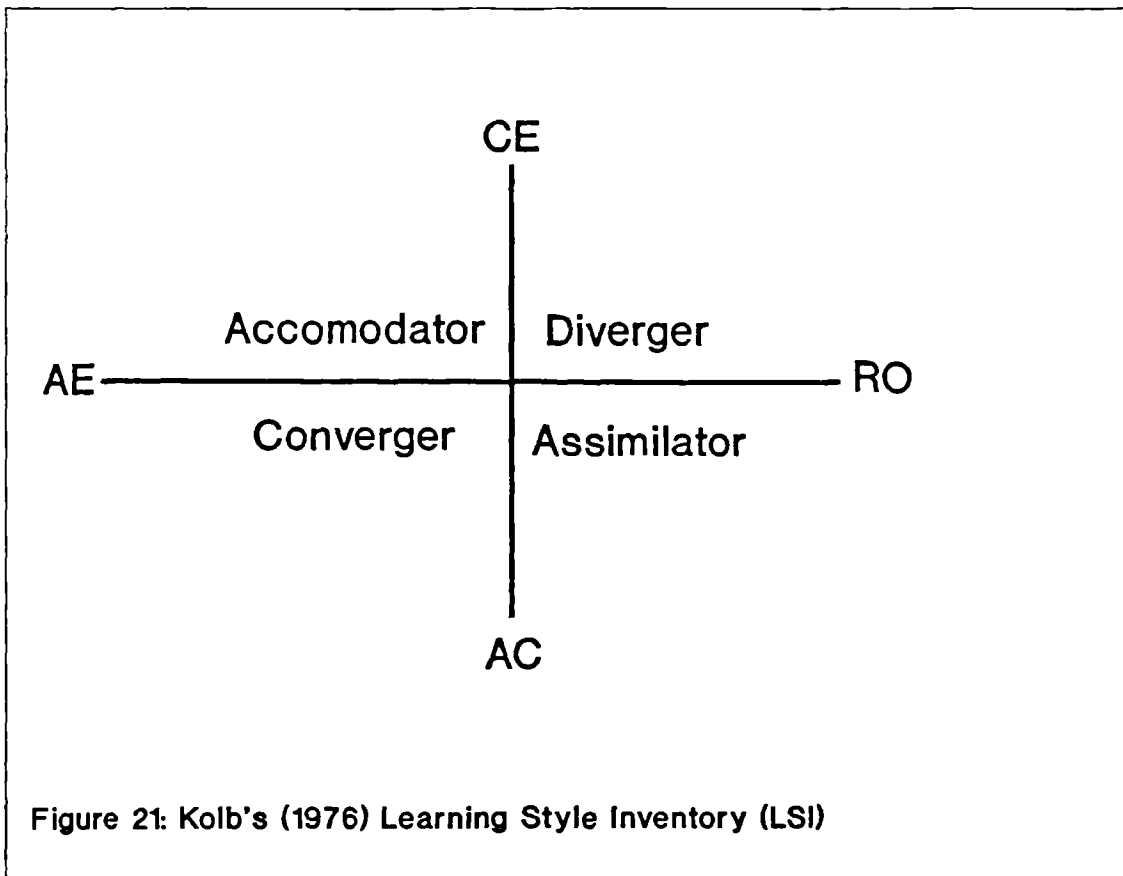
Several attempts have been made to help managers learn about the job they do (Kolb, 1976<sup>308</sup>, 1981<sup>309</sup>, 1984<sup>310</sup>; Honey and Mumford, 1982<sup>266</sup>; Mumford, 1986<sup>364</sup>, 1987<sup>365</sup>; Burgoyne and Hodgson, 1983<sup>81</sup>; MacArthur, 1991<sup>321</sup>). However, it is the works of Kolb (1976<sup>293</sup>, 1984<sup>295</sup>) and Honey and Mumford (1982<sup>266</sup>) that have received the most recognition in the field of management education.

Kolb (1976<sup>308</sup>) uses two bipolar dimensions of cognitive growth: the active - reflective dimension and the abstract - concrete dimension, to define a four stage cycle of learning (see Figure 20).



**Figure 20: Kolb's (1976) Learning Cycle**

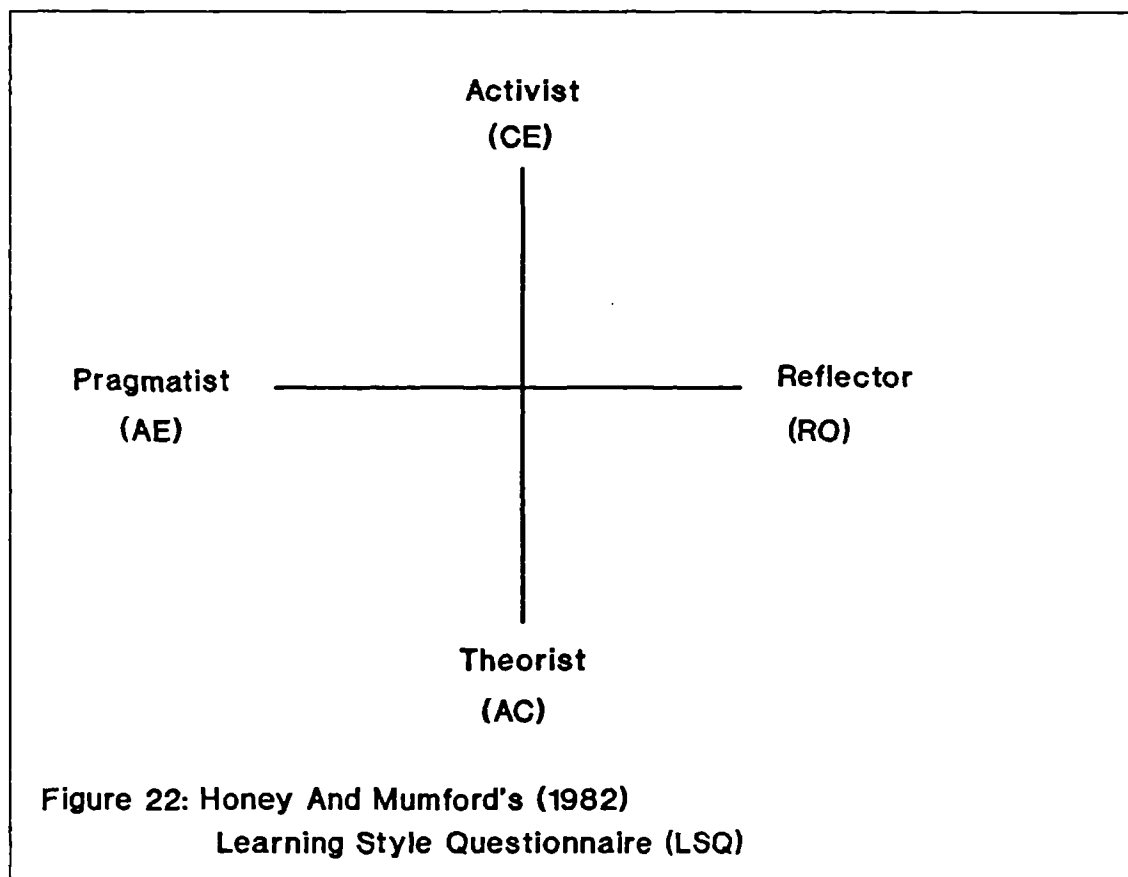
The cycle commences with the acquisition of concrete experience (CE), which then gives way to reflective observation (RO) based on that experience. On this basis, theory building, or abstract conceptualisation (AC) occurs. The theory is then put to test through active experimentation (AE). Since the experimentation fields new concrete experiences, the cycle thus continues. From his cycle of learning, Kolb (1976<sup>308</sup>) devised a Learning Style Inventory (LSI) (see Figure 21) to help managers choose the style of learning which they prefer.



Kolb measures learning styles by means of a self-description questionnaire which comprises nine sets of four words, and requires respondents to rank the words within each set according to how well they characterise their learning orientation. This produces scores relating to each of the four learning abilities CE, RO, AC and AE respectively. Using these, two other scores are computed. AE minus RO indicates the manager's position on the active-reflective dimension; and AC minus CE indicating his/her position on the abstract-concrete dimension. Through this approach, it becomes possible to identify a manager's preferred learning style. For example, a high score on active-experimentation (AE) indicates active "doing" orientation to learning. High AE managers learn best when they can engage on such activities as group discussions. They dislike passive learning situations such as lectures. However, the utility of LSI has been called into question (Honey and Mumford, 1982<sup>266</sup>; Carter, 1983<sup>91</sup>; Wilson, 1986<sup>504</sup>), even allowing for the fact that,

as Kolb (1981<sup>309</sup>) points out some temporal instability is inevitable, owing to situational variations in learning style models.

Honey and Mumford (1982<sup>266</sup>) were less satisfied with the LSI, questioning the use of one-word descriptions as a basis for attributing style, and expressing concern as to the validity of the styles themselves. Honey and Mumford (1982<sup>266</sup>) produced a Learning Style Questionnaire (LSQ) to help managers learn. The LSQ is based on observable behaviour, rather than the psychological basis for that behaviour. In the main, the LSQ comprises 80 statements which managers are asked to tick or cross, indicating broad agreement or disagreement respectively. The 80 statements comprise four subsets, namely, Activist, Reflector, Theorist and Pragmatist (see Figure 22) of randomly - ordered items, each subset measuring a particular learning style.



The LSQ is scored by awarding one point for each ticked item, and no points for crossed items. In effect, the maximum possible score for each learning style is twenty. Raw scores are meaningful only when viewed in the context of normative data. Honey and Mumford (1982<sup>266</sup>) provide norms for the LSQ based on studies of 1302 British managers and professional.

Honey and Mumford's (1982<sup>266</sup>) four styles of learning are broadly equivalent to the four stages of Kolb's cycle. Activists learn through involvement in new experiences, becoming bored with implementation and longer-term consolidation. Reflectors learn by observing events from different perspectives, collecting and analyzing data about them. Theorists learn through integrating observations into a conceptual framework, relying on rationality and logic to achieve synthesis. Pragmatists learn by testing ideas, theories and techniques to see if they work in practice, using them as a basis for making decisions and solving problems.

Both the works of Kolb (1976<sup>308</sup>) and Honey and Mumford (1982<sup>266</sup>) have contributed significantly in the way managers learn. Honey and Mumford (1989<sup>267</sup>) suggest that knowing about different learning style preferences, is the key to understanding and to becoming more effective at learning from experience. Gibbs (1988<sup>216</sup>) is also in agreement with this view, and goes further to inform us that learners must selectively reflect on their experiences in a critical way, rather than take experience for granted and assume that the experience on its own is sufficient.

### **8.5. A Framework For Educating And Training Refurbishment Managers**

The purpose of this section of the chapter is to describe a framework which could be used for educating and training refurbishment managers. The framework incorporates on-the-job and off-the-job methods of educating and training managers. It will be recalled from Section 7.5 of chapter seven of this thesis, when refurbishment managers' perceptions were sought on how management skills/knowledge for refurbishment are best developed, 94.4%, 88.0% and 79.6% responded positively to on-the-job (with guidance), in-house courses and external courses respectively. It is therefore necessary that these three methods are considered in educating and training managers.

The framework (see Figure 23) also incorporates learning concepts from learning theories, namely experiential, social learning, traditional methods and the pragmatic approach. A combination of learning theories is necessary, since no single learning theory is adequate on its own (Pedler, 1974<sup>396</sup>; Whetten and Cameron, 1991<sup>495</sup>).

Through on-the-job coaching, job rotation and group discussions, the framework benefits from the experiential school of thought, and by lectures and written texts, the traditional approach is accommodated in the framework. Through behavioural modelling and role plays, the social learning concept is introduced into the framework, while the pragmatic approach to learning is accommodated by the use of case studies.



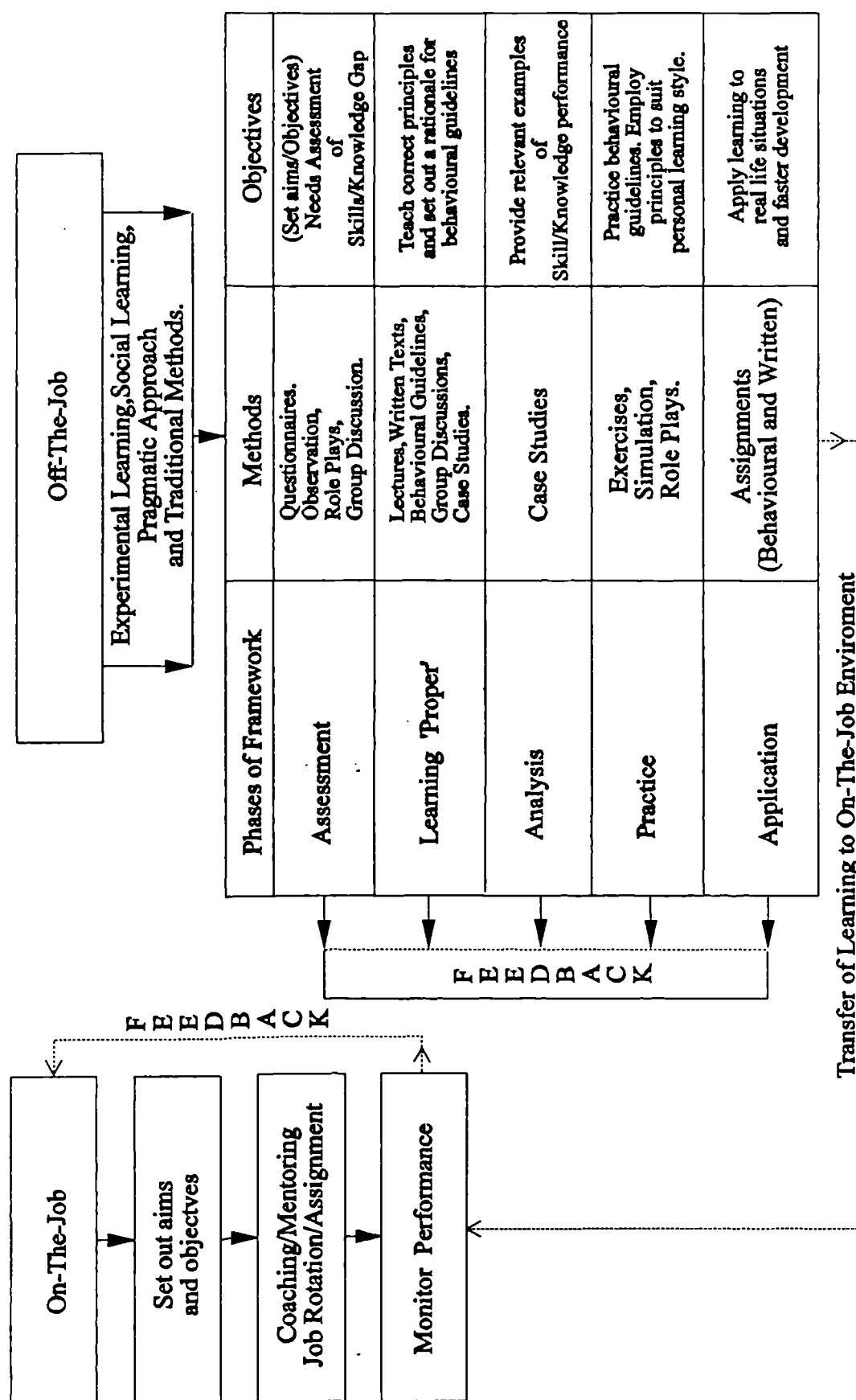


Figure 23: A Framework for the Education and Training of Refurbishment

The framework is divided into two main parts, on-the-job and off-the-job education/training.

#### (i). On-The-Job

The education and training framework for refurbishment managers considers coaching/mentoring and job rotation as methods for educating/training managers. Before coaching and/or job rotation take place, it is necessary that the aims and objectives of coaching and job rotation are set out, since it is only by doing so that the progress or improvements derived from education/training can be monitored or evaluated.

Moorby (1975<sup>358</sup>) sees coaching as a means of taking the problems, opportunities and frustrations of the job and using them constructively to improve the skills/knowledge of managers. According to Hague (1975<sup>235</sup>) coaching is about "on-the job training with somebody passing comments which are based on accurate and impartial observation, and continuous feedback on to the performer about whether he/she is improving", p. 363. Hague (1975<sup>235</sup>) goes further to inform us that coaching is also much more a question of making the subordinate aware of how he/she is managing, and using situations as they arise as teaching opportunities.

Job rotation involves moving managers around the organisation to experience different organisational functions or different kinds of project. Like coaching, job rotation is experiential and involves 'real operations' and problems of the projects and organisations.

There is a need to monitor the progress/performance or improvements of the learner and relate them to the aims and objectives. This evaluation process would allow actions to be taken in areas where the learner needs to improve.

(ii). Off-The-Job.

The framework also incorporates off-the-job methods of educating and training managers. This can either be in-house or external course programmes, and can be used as workshops, or for continuing professional development.

The framework caters for the three 'pillars' of the systems approach (Stone, 1982<sup>467</sup>; Goldstein, 1974<sup>220</sup>, 1986<sup>222</sup>) which are :- needs assessment, training/development and evaluation. However, unlike in the systems approach, where evaluation/feedback is the last stage to education/training programmes, in the present framework it is a concern at all stages. This should allow necessary changes or improvements to be made at any stage in the educating and training of managers.

The framework also incorporates four main stages which Bigelow (1983<sup>41</sup>); Cameron and Whetten (1983<sup>86</sup>); and, Whetten and Cameron (1991<sup>495</sup>) have shown to be effective for developing management skills/knowledge. These are:-

- \* Pre-assessment Phase.
- \* Learning Phase.
- \* Practice Phase.
- \* Application/Integration Phase.

In the current study, an additional phase (analysis phase) is incorporated into the framework, and is discussed below.

In the assessment phase, it is necessary to set out the aims and objectives of education and training, and also to identify skill/knowledge needs for the manager. A variety of strategies (Steadham, 1980<sup>461</sup>) can be used in identifying the needs of a manager, such as questionnaires, observations and role plays.

In the learning 'proper' stage, managers are taught 'correct' principles by using a traditional method approach, e.g. written texts and lectures. Skills/knowledge can also be learned by setting rationale for behavioural guidelines. Group discussions are also necessary, since ideas can be exchanged when managers discuss with one another.

The analysis phase provides relevant examples of both appropriate and inappropriate skills/knowledge performance. In this phase, it is also important that reasons are given as to why certain skills/knowledge performance 'work' or 'do not work'.

The 'practice' stage allows managers to practice behavioural guidelines that lead to improved performance through simulations, exercises and role plays.

The last stage in the framework is the 'application' stage. In this stage, managers apply what they have learnt into real-life situations (on-the-job). This stage allows learning experiences to be transferred from an 'off-the-job' to an 'on-the job'

environment. It is important that the manager's organisation select an individual(s) who is(are) responsible for monitoring the progress of the manager, in order to foster on-going personal development.

Since education and training programmes are effective to the extent that they contribute to improved on-the-job performance, it is therefore important that learning is transferred to the job and retained. Several studies have been conducted on how learning can be transferred to the workplace (Marx, 1982<sup>348</sup>, 1986<sup>349</sup>; Graham and Mihal, 1986<sup>226</sup>; Jago, 1982<sup>280</sup>; and Weiss et al., 1980<sup>491</sup>).

Relapse prevention planning is one technique which can be used to encourage the transfer of learning (Marx, 1982<sup>348</sup>, 1986<sup>349</sup>). The relapse prevention planning approach calls on managers to use their past post-learning experiences to identify likely barriers to the transfer of their training/education. Once the learning barriers are identified, the managers and his/her organisations will then adopt necessary strategies for avoiding or overcoming these barriers.

Periodic follow-up sessions is another approach which encourage the transfer of learning to the workplace. The purpose of the follow-up sessions is to give the manager an opportunity to report on the progress in using newly acquired skills/knowledge in his/her job. This approach gives the manager the opportunity to ask questions about aspects of the training/education that have not worked out as expected, thus allowing necessary actions to be taken on specific situations of his/her skills/knowledge repertoire.

Conducting periodical needs assessment can also be used as a strategy for encouraging the transfer of learning to the workplace. In this approach, the manager completes a self-assessment inventory with supervisory review. This approach will also encourage managers to recognise other developmental needs.

In summary, the framework devised for educating and training refurbishment managers combines both on-the-job and off-the-job education/training, and by so doing, is in line with the substantial evidence which suggests that a great deal of learning by managers occurs at the workplace.

The framework also accommodates the ways adults learn, which has been shown to be different from those of children/youths. Group discussions and role play are accommodated in the model.

The framework uses feedback to continually modify instructional processes. From this perspective, the framework is continually adaptive to information that indicates whether each stage of education and training of a manager is meeting a stated aim or objective.

The framework can be used to produce short courses, workshops and seminars which can serve the purpose of Continuing Professional Development (CPD) and other special training an educational needs of a manager.

By accommodating the assessment, learning and analysis phases, a manager can acquire and develop just the skills/knowledge which he/she needs without going

through the rigours of learning other skills/knowledge which he/she may find irrelevant or already have acquired.

The transfer of skill/knowledge from the 'classroom' scenario to workplace is also accommodated.

### **8.6. A Model For Postgraduate And Continuing Professional Education**

The purpose of this section of the chapter is to describe a model which can be used in postgraduate programmes for educating refurbishment managers, and for continuing professional development. The model is based on a modular format. Each of the eighteen factors, derived in the last chapter through factor analysis, represent a module on which the model is based. Each of these modules is also made up of sub-modules.

A module in the context of the current study, means a self-contained unit of study which has a standard size or a method of agreeing a standard value, also, each module has its own distinct aims and objectives, and can be assessed separately. Each sub-module is made up of a unit 'credit'. The satisfactory completion and attainment of the necessary credits result in a particular award/qualification.

Modularity, in essence, is the division of courses into separate elements/units, with each element/unit presented to a student with separate aims/objectives, and also a procedure for self-contained assessment.

To the best knowledge of the author, no official statistics exist in the U.K. which indicate the growing trend in modular schemes, both in the public and university sectors of higher education. However, Mansell et al. (1976<sup>340</sup>), Watson (1989<sup>488</sup>), CNAA (1989<sup>138</sup>, 1990<sup>139</sup>) and Theodossin (1990<sup>476</sup>) are of the view that modular programmes have been increasing in popularity since the 1970's. In the public sector of higher education, Oxford Polytechnic (now Oxford Brookes University) was one of the first institutions in the U.K. to adopt the modular course approach (Watson, 1989). Its undergraduate credit accumulation scheme - The Modular Course, began in September 1973 as a course in science, replacing the London University External Degree, enrolling 75 students.

In a survey of 200 large employers from different industrial sectors in the U.K., Thomson et al. (1987<sup>479</sup>) observed that modular programmes got by far the highest vote of all forms of general management education. Several reasons can be offered for the growing interest in 'modularity' since the 1970's. The enhanced interest in modular structures of the 1980's was in circumstances and for reasons different from those at the height of the 'container revolution' (Mansell et al., 1976<sup>340</sup>) in the mid-1970's.

In the 1970's, modular courses at the undergraduate level, were the outcomes in the U.K. of some of the interests in new pedagogical and curricular emphasis of the 1960's, rooted in what Watson (1989<sup>488</sup>) terms 'idealistic' and Squires (1990<sup>459</sup>) 'libertarian' approaches to knowledge and learning. The background, and also the need for colleges of education rapidly to diversify in the mid-1970's, resulted in a surge of modular proposals. Some of the polytechnics such as City of London and



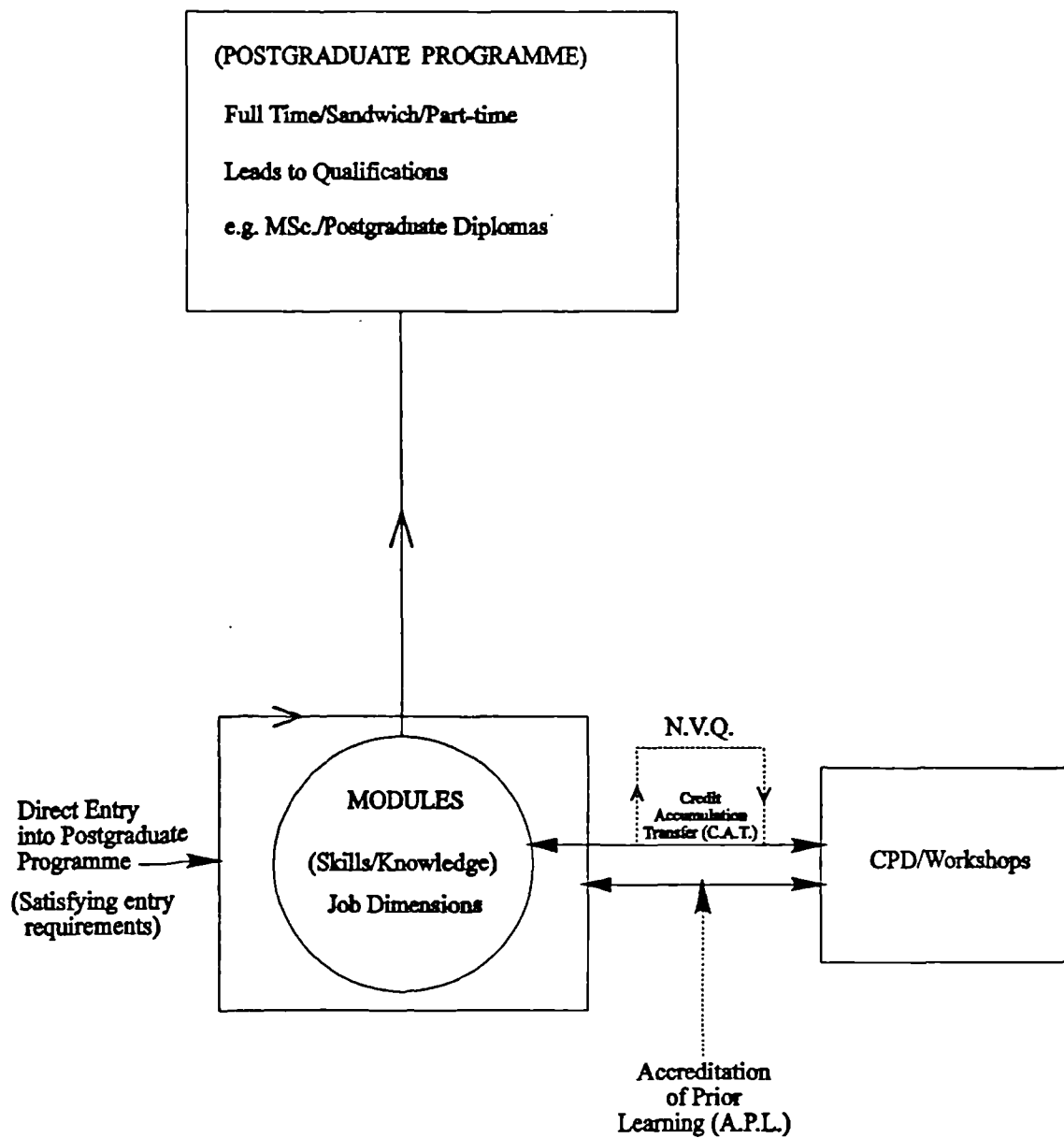
Oxford (earlier mentioned), had begun to seek flexibility in modular structures from the early 1970's.

Renewed interests in modular courses in the 1980's had its origins in a search, not so much for academic flexibility as for institutional economies (CNAA, 1990<sup>139</sup>). While student choice remained an important consideration, the paramount emphasis had become one of changes in the system, which required attention to be levelled at questions of administration, efficient deployment of resources and, according to CNAA (1990<sup>139</sup>), maximising opportunity within tighter management control. In the late 1980's and early 1990's, the government White Paper of 1987 (Secretary of state for education and science et al, 1987<sup>443</sup>) titled, 'Higher education: Meeting the challenge', and reports such as those of Handy et al. (1987<sup>244</sup>), Constable and McCormick (1987<sup>123</sup>) and CNAA (1988<sup>137</sup>) advocating modularity and credit accumulation and transfer, have helped to increase the trend in modular courses.

The above mentioned White Paper of 1987, welcomed the CNAA's and other credit accumulation and transfer developments, and the opportunities they provide for a wider range of entrants "... to pursue programmes of study tailored to their particular needs but within established academic standards", p. 11.

The model for postgraduate and continuing education for refurbishment is presented in Figure 24, and the eighteen modules/sub-modules on which the model is based are presented in Table 73.

**Figure 24: A Model for Postgraduate and Continuing Education in Refurbishment Management**



**Table 73: A List Of Modules And Sub-modules For Postgraduate And Continuing Education Programmes For Refurbishment Management.**

<u>Modules</u>	<u>Sub-modules</u>
<u>Module 1</u>	
Legal skills/knowledge for refurbishment management	Company law Planning law Construction law Employment legislation Client/consumer protection law Company strategic planning
<u>Module 2</u>	
Operational management skills/knowledge	Materials planning & control Productivity control & maintenance Manpower planning & control Plant planning & control Programme maintenance(update) Site organisation Quality control
<u>Module 3</u>	
Skills/knowledge associated with dismissal of labour force	Terminate/Dismissal: Supervisor Terminate/Dismissal: Management Terminate/Dismissal: Manual labour Terminate/Dismissal: Subcontractor
<u>Module 4</u>	
Financial management skills/knowledge	Costing and estimating Budgetary control

Module 5

Skills/knowledge associated with recruitment of labour force

Recruit/Select: Management  
Recruit/Select: Subcontractor  
Recruit/Select: Supervisor/Foreman  
Recruit/Select: Manual labour

Module 6

Skills/knowledge associated with employee training

Employee training: Supervisor/Foreman  
Employee training: Management  
Employee training: Manual labour

Module 7

Interpersonal or management of people skills

Motivation of others  
Leadership  
Supervision of others

Module 8

Skills/knowledge related to the market place

Market research  
Advertising and promotion

Module 9

Skill/knowledge associated with job analysis and specification

Job analysis and specification

Module 10

Skills/knowledge associated with managing in a changing environment

Managing conflict/crisis  
Managing change

Module 11

Skills/knowledge associated with the use of computer technology

Use of computer technology

Module 12

Skills/knowledge of creativity

Creativity

Module 13

Skill/knowledge associated with  
decanting of buildings

Decanting building

Module 14

Skills/knowledge related  
with competition to  
win work

Competitive tendering  
Negotiate client  
Setting objectives and goals

Module 15

Skill/knowledge of  
public relations and  
Conducting meetings

Conducting meetings  
Public relations

Module 16

Skills/knowledge associated  
with decision making

Decision making

Module 17

Skill/knowledge associated  
with employee welfare

Employee welfare

Module 18

Health and safety

Health and safety

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The eighteen modules and sub-modules on which the Model is based, are presented in Table 73. The modules (see Figure 24) can be used to form the basis of postgraduate programmes as well as programmes for Continuing Professional Development and workshops.

The requirements for an award will need to specify both the depth, in terms of content of sub-modules, and the number to be taken and passed. Some of the sub-modules may need to be made compulsory ( e.g. Health and safety, Quality control/assurance), while others remain optional.

There are important issues which need to be considered in a modular programme of this nature, and these are discussed below:

#### (i). Academic Quality Of Modular Courses

The issue of quality assessment in higher education is vastly documented (Watson, 1994<sup>489</sup>; Griffith, 1994<sup>233</sup>; and Sanders, 1994<sup>436</sup>). Watson (1994<sup>489</sup>) notes that "All institutions [and theoretically all departments] are now subject to review by academic and professional peers" p 24.

In the UK, the Higher Education Funding Council (HEFC) assesses quality, whilst the Higher Education Quality Council (HEQC) has the responsibility of auditing an institution's quality assurance mechanism. For example, all the Architectural schools in the UK are being asked to submit a claim of either satisfactory, or excellent for teaching. The schools which are claiming excellence are visited by the HEFC. The

Faculty of the Built Environment at the University College London (UCL) is the first school in the UK to submit a combined claim, and be awarded excellence in the teaching of building, architecture and planning.

Academic quality is central to the debate in modular schemes (CNAA, 1989<sup>138</sup>, 1990<sup>139</sup>; Watson, 1989<sup>488</sup>), especially as it relates to the questions of coherence, integration and progression. The CNAA (1990<sup>139</sup>) is of the view that a carefully designed modular programme can satisfy these questions, and the breadth of the study which they can provide across different areas of study, can offer intellectual challenges and insights in different areas of skills and knowledge.

Modular schemes are sometimes criticised on the basis that there is a danger that the student's knowledge may become fragmented and compartmentalised (CNAA, 1990<sup>139</sup>). The critics of the modular courses are also of the view that no one subject area is studied in sufficient depth and that frequent immediate assessment does not allow sufficient time for students to assimilate and reflect upon their studies (Watson, 1989<sup>488</sup>). With these criticisms, it is therefore important that for any modular scheme, the rationale for defining aims and objectives should not only show how these are to be achieved, they should also be able to demonstrate how the academic coherence and standard of student's programme can be safeguarded.

As earlier indicated, it is necessary that each sub-module has its own statements of objectives, in terms of skills/knowledge and how they can be taught and assessed.

### (ii). Flexibility/Wider Access Of Modular Courses

Modular courses should offer students considerable flexibility in their choice of modules. They should provide opportunities for combining different sub-modules, subject to designated 'compulsory' or 'core' modules, and pre-requisites.

Modular schemes can be made to offer a wide range of introductory modules/sub-modules, which can be taken by students with limited experience of a particular study area. In this respect, it provides flexible entry requirements, although this can make the task of ensuring appropriate standard for admissions more difficult (Watson, 1989<sup>488</sup>; CNA, 1990<sup>139</sup>). It is therefore necessary that there are means of assessing the ability of applicants to meet the demands of the programmes, and to reach the standard required for a given award.

### (iii). Skills/Knowledge Transfer

The current policy of higher education places emphasis on transferable skills (Government's White Paper- "Higher education: Meeting the challenge", 1987). In modular programmes, provisions for complementary studies can allow students from different backgrounds to have the opportunity of participating in appropriate programmes. The advantage of modular courses in this respect lies in the wide range of modules and sub-modules available in the curriculum, and also the potential for at least some of them to contribute to complementary studies providing 'transferable skills'. A heterogeneous group of students can bring a range of perceptions and methodologies to bear on the programme of study. A module or



sub-module may be part of a compulsory/core programme of study for some students, while for others it forms part of their complementary studies.

#### (iv). Adaptability Of Curriculum In Modular Schemes

Since each sub-module is 'self-contained', this can allow course planners to replace and modify individual sub-modules, thus updating the courses to keep pace with new academic developments. It can also allow for the experimentation of new teaching and assessment methods (Oxford Brooks University is the leader on innovative teaching methods).

The ability to introduce new sub-modules and new combinations of sub-modules, may allow for major studies in developing areas, providing pathways to new qualifications/degrees. The flexibility of the modular scheme will allow the job dimensions which are not in the factor 1 - 18 arrived at by factor analysis, but which constitute refurbishment management practice to be included in the model. The choice of these job dimensions will largely reflect the depth of coverage required, and tend to reside with course composition. The modular approach also makes it possible for changes to be made in available staff expertise and student numbers in a given area of study.

#### (v). Credit Accumulation And Transfer In Modular Courses

Modular courses are designed on the principle of credit accumulation, based on units of a standard size or equivalent study within each scheme. In this way, they facilitate participation in credit accumulation and transfer schemes (CAT) which, according to the CNAA (1988<sup>137</sup>), can operate within a single institution, locally, regionally or nationally. As an example, the CNAA (1988<sup>137</sup>), in their CAT schemes, has developed a credit tariff approach, to which other modular schemes can be related. A full time student's workload is defined as 120 credits per year, and modules can be related to this according to their content, size and duration.

As can be seen in Figure 24, the model designed in the present study allows for credit accumulation transfer. This approach makes the transfer of credits or advanced standing from one course to another possible. Similarly, managers who have to withdraw or suspend their studies are likely to have measured achievements to take away with them, and may easily rejoin the scheme at a later date.

The model for post-graduate programmes can accommodate full-time/sandwich and part-time studies. Managers who opt for the part-time mode can study at their own pace, and alter the amount of study they undertake by choice of suitable sub-modules. Credit can be built up over time to achieve an award or qualification.

The model for postgraduate education also allows direct entry into postgraduate programmes, providing applicants satisfy entry requirements.

For workshops and Continuing Professional Development (CPD), the modular approach allows managers to take individual sub-modules in areas of skills/knowledge which they need.

The model for education and training of refurbishment managers can also accommodate current trends in management education and training in areas of Accreditation of Prior Learning (APL) and National Vocational Qualifications (Level V for managers). The Business and Technical Education Council (BTEC, 1990<sup>84</sup>), London, sees APL as a process which enables the identification, assessment and certification of a person's vocationally relevant past achievements.

According to Jones (1991<sup>285</sup>), APL is a process of, "... achieving formal recognition and qualifications for competence you already possess and is achieved by assessment of experience and past training against national standards", p.23.

APL will be of benefit to candidates who have extensive experience without qualifications. Jones (1991<sup>285</sup>) and the BTEC (1990<sup>84</sup>) guidelines consider in detail how APL works. In the main, it works on the premise that managers with relevant experience, and who feel they have strengths in some skill/knowledge areas, present their achievements in the form of a portfolio (Hall, 1990<sup>239</sup>). An independent assessor then inspects the evidence, and if successful, the individual will be awarded a nationally recognised certificate of achievement for each area successfully completed.

At the time of writing, the Construction Standing Conference (CISC) and the Construction Industry Training Board (CITB) are working together to provide an integrated framework of new standards for National Vocational Qualifications for managers in the Construction Industry. The modules (skills/knowledge) derived in the present study may be useful in the national framework.

The model derived in this study only caters for management education and training programmes for postgraduate and continuing education. Research is needed into "how best" refurbishment management education can be successfully and widely introduced into undergraduate curricular. For undergraduate courses in construction management, especially those based on modular schemes, attempts should be made to enlighten students as to the nature of refurbishment works and the problems associated with management of such works.

### **8.7. Conclusions And Recommendations**

This chapter set out to establish a framework for educating and training refurbishment managers, through a thorough review of literature on learning theories and how adults learn. The framework also incorporated refurbishment managers' preferences on methods of delivery of education/training.

Refurbishment managers in the present study are of the view that management skills and knowledge for refurbishment are best developed through three main methods. These are:

- i. On-the-job (with guidance)
- ii. In-house courses
- iii. External courses.

These methods are accommodated in the framework.

A model for postgraduate and continuing education programmes for managers was also devised, based on a modular format. An eighteen factor model (skill/knowledge) derived in this study through a data reduction technique (factor analysis) formed the modules/sub-modules on which the model was based.

The flexible nature of the modular approach to management education, together with wider access and credit accumulation transfer allow managers to study at their own pace, and to alter the amount of study they undertake by choice of suitable modules/sub-modules.

With the continuing efforts being made in the U.K. Construction Industry to produce a framework of qualifications for construction managers, the sub-modules in the present study are useful, and may be incorporated in the national framework.

Finally, following the development of a model for postgraduate and continuing education for refurbishment management, together with the increasing trend in refurbishment work, research is needed into 'how best' refurbishment management education can be successfully and widely introduced into undergraduate curricular. By introducing refurbishment management at the undergraduate level, it may lead to a better calibre of person becoming a refurbishment manager.

## **CHAPTER NINE**

### **REFURBISHMENT MANAGEMENT AND THE FUTURE**

## **9.0. REFURBISHMENT MANAGEMENT AND THE FUTURE**

### **9.1. Introduction**

This chapter addresses the major factors that are likely to shape the future of refurbishment management.

For a relatively unresearched area like refurbishment management, deciding on what assumptions should be made about the future is indeed difficult. However, looking ahead to the year 2001, the Centre for Strategic Studies in Construction (CSSC, 1989<sup>99</sup>) is of the view that Building in the year 2001 will be different from the one that exists today. They identified essential changes which are likely to take place. Changes which "can be recognised as simply the application of modern management principles to the works of the building industry" (CSSC, 1989<sup>99</sup> : 24). Some of these changes include a greater need for construction organisations to meet the needs and expectations of clients/customers, as well as increasing challenges and competition between groups of companies within the UK and abroad. The CSSC (1989<sup>99</sup>) calls for significant changes in skills need to meet the needs of the future. Structured education and training is seen as paramount in tackling the skills/knowledge gap.

Lansley (1990<sup>320</sup>) also informs us that the construction industry requires a greater 'knowledge workers' than in the past. Lansley (1990) notes that "If the industry (construction) is to achieve a viable future then it must recognise that it has moved

from what was essentially a 'production industry' in the 1960's, through a 'management industry' in the 1970's, to a 'knowledge industry' in the 1980/1990's" p. 9 .

In a major research project sponsored by the Foundation for Management Education and Ashridge management College titled 'Management for the future', Barham et al (1988<sup>23</sup>) noted that 'organisations face a future of unprecedentedly rapid and complex change' p5. Such changes according to Barham et al (1988<sup>23</sup>) include, technological advancement, increasing competition both amongst organisations within the UK and abroad.

The importance of responding to changes within the construction industry is well pointed out in an extract from the CIOB (1982<sup>106</sup>) report. In offering advice to members of the institution, in recognition of the changes in construction, the CIOB (1982<sup>106</sup>) noted that:-

"All professional people recognise that in order to function effectively, they have to respond to change" p13.

The next section of this chapter attempts to draw the attention of readers to what are considered to be the sources of change and the major factors that are likely to affect the future of refurbishment management.



Quantitative and qualitative data obtained from training officers and refurbishment managers on future skills/knowledge, together with education and training needs for refurbishment will also be discussed in this chapter

## **9.2. The Major Factors That Are Likely To Shape The Future Of Refurbishment Management**

For the purpose of the discussion, the major factor which are likely to affect the future of refurbishment management will be considered under four main headings, namely:-

- (i). Increasing competition
- (ii). Increasing contract procurement systems
- (iii). Improving technology
- (iv). Demographic factors

### **(i). Increasing Competition**

The Building EDC, in 1984 is quoted as saying that "Given the condition of the national housing stock, there seems to be no reason to suppose that the volume of this kind of work (Refurbishment) will reduce significantly this century" (Building, 1984a<sup>72</sup> : 9). Similarly, In 1988, the English Housing Condition Survey (DOE, 1988<sup>156</sup>) indicated that in England and Wales, there were 1.11 million dwellings having 'serious' disrepair. These dwellings need upgrading and modernisation.

A recent Planning Policy Guidance (PPG Note 13) issued in March 1994, by the Department of the Environment (DOE), places restrictions on out of town proposals in local authority development plans. Although the main aim of the government is to reduce the need to travel by car, and ensure the vitality of town

centres (New builder, 1994b<sup>381</sup>), it also has the effect of increasing the volume of refurbishment work in town centres. This government's view on sustainable cities, targets schemes such as out of town superstores. Ian Martin, the campaigning Coordinator for the National Sensitive Sites Alliance (NSSA), a nationwide advisory group coordinating over 60 campaigns against out of town superstores is quoted as saying "Building new superstores cannot go on, ... the country has reached saturation point and that new stores breed new roads, as many are coupled with part-funding of a new bypass" (New builder, 1994b<sup>381</sup>: p4).

The restriction on the development of new out of town superstores means that emphasis will have to be levelled at updating and modernising existing town centre superstores, thus, increasing the volume of refurbishment work.

The forecast by the Joint Forecasting Committee (JFC, 1993<sup>284</sup>) is that the Repair, Maintenance and Improvement (RMI) sector will experience a growth of 6% between 1993 and 1995. All these indicate that the refurbishment sector will keep growing for many more years to come. According to Lawson (1985<sup>323</sup>, 1986<sup>324</sup>); and Whitely et al (1980<sup>498</sup>), the growth in the refurbishment sector helps to offset business losses elsewhere. Accompanying this growth, is competition in the market place.

The growth in the refurbishment market has led large contracting organisations, including new building contractors to seek work in refurbishment (Young and Egbu, 1993b<sup>519</sup>), a sector which has traditionally been the stronghold of smaller contractors (Griffith, 1992<sup>232</sup>; Hillebrandt, 1990<sup>259</sup>; and Quah, 1992b<sup>415</sup>).

Large contractors have entered into the refurbishment market through three main ways, namely:-

- i. Direct entry by creating subsidiary refurbishment divisions
- ii. Acquisition of smaller repair, maintenance and refurbishment organisations
- iii. Through different combinations of (i) and (ii) above.

The entry of large national contractors into the refurbishment market will in no doubt increase competition in the refurbishment market. Apart from competing to win work, refurbishment organisations would have to compete to obtain skilled labour force. Bresnen et al, (1985<sup>63</sup>) maintain that even with high unemployment many managers still find it difficult to obtain the skilled workforce they require.

In refurbishment operations carried out on buildings of high architectural and historical value, such as listed buildings, obtaining the skilled labour force can be fraught with difficulty. This point is well emphasised by David Pickford (1983<sup>401</sup>), Chairman of Haslemere Estates, a specialist refurbishment organisation based in London, as he noted about one of his projects,

"We brought out of retirement a number of octogenarians because they were the only men capable of executing fine plasterwork and wood carving" p.96.

Similarly, with refurbishment works, matching new construction with old demands high levels of crafts skill and attention. The problem of matching new material components with that of the existing building is well cited by a refurbishment specialist (Evamy, 1988<sup>183</sup>) as follows:-

"It's no secret that the business of blending new construction with old holds a unique stock of technical booby-traps" p.24.

As the large contractors enter into refurbishment, however, this should lead to better management expertise into "this traditionally less organised sector of building work" (Quah, 1992b<sup>415</sup>: p.91), since larger organisations tend to have a more structured and better management set-up than their smaller counterparts. For this to happen in any meaningful way, Young and Egbu (1993b<sup>519</sup>) argued that managers in refurbishment urgently need to acquire and develop the relevant management skills and knowledge which refurbishment demands, through appropriate management education and training.

From the discussions held with training officers and refurbishment managers who participated in the present study, it would appear that in the immediate future, the competition which refurbishment organisations are likely to face, will come from within, i.e from other refurbishment organisations in the UK and not from abroad. Being mainly national contractors, it is unlikely that the competition which will accrue, with the opening up of Europe, will form a major threat to refurbishment organisations. This supports the view of the Centre for Strategic Studies in Construction (CSSC, 1989<sup>99</sup>). Looking ahead into the kind of building industry needed in Europe in the future, together with the level of competition they are likely to face, the CSSC (1989<sup>99</sup>) is of the view that, "Most repairs and maintenance, alterations and small scale infill buildings will remain in the hands of local builders", p.20.

Foreign language and skills/knowledge associated with managing other national culture are not perceived by refurbishment managers in the present study as high order needs both in terms of importance in managers' jobs and in terms of education and training needs. With the situation in eastern Europe, especially in the former Yugoslavia, where repair and refurbishment works are likely to be plentiful, some contracting organisations may be short sighted.

The recent government's major shake-up in the Urban Regeneration Policy is likely to increase competition amongst contractors involved in refurbishment and renewal works. The mechanism for change has been to roll 20 existing aid programmes from five governments departments into one fund:- The Single Regeneration Budget. This came into being in April 1994, with a budget of £1.4bn for 1994/1995 (Chevin, 1994<sup>112</sup>). The government's view in introducing the single regeneration budget is to tailor grants more closely to local needs, make them more easier to obtain and increase value for money.

Also in April 1994, a new bidding guidance for local authorities, house builders and contractors (Bidding guidance: A guide to funding the single regeneration budget) was issued by the Department of the Environment (DOE). The bidding guidance sets out the types of schemes which qualify for the single budget. Two of the major criteria for qualification are:

- i. The scheme must improve housing through physical improvements, greater choice and better management.
- ii. Protect and improve the environment and infrastructure and promote good design.

In all, the schemes must build on good practice and present good value for money.

Contractors will have to compete for a slice of the single regeneration budget by forming partnership schemes with local authorities. Stephen Bennett, Deputy Managing Director of Bovis Urban Renewal is quoted in the Building Magazine (April, 1994<sup>74</sup>) as saying "... competition is intensifying among local authorities for funding and for contractors and developers to join in with them" p 20.

Chevin's (1994<sup>112</sup>) view is that "In future, every £1 of government money for rejuvenating towns and cities will be fiercely fought for in open competition, ... resources will be scarce and partnerships will be the name of the game" p 18.

In his advice to construction firms, regarding the single regeneration budget, David Ritchie, a Regional Director of the West Midlands office, one of the ten offices through which the single regeneration budget will be administered points out that "It would be in contractors' interest to find out what is happening in their area - look at the partnerships that are emerging and ask if they can make a contribution" (Building, 1994<sup>74</sup>: p 18).

However, the government's intention to replace the mandatory grant scheme, which is used by house owners to renovate their properties, by a discretionary scheme (Doyle, 1994<sup>166</sup>) may have the effect of reducing the amount of refurbishment work available for contractors, also, it may hinder the efforts being made by the Building Employers Confederation (BEC) and the Federation of Master Builders (FMB) to reduce the amount of houses classified by legislation as 'unfit' to live in (New builder, 1994a<sup>380</sup>).

The provision of quality services and meeting the needs and requirements of increasingly knowledgeable clients are likely to intensify competition amongst refurbishment organisations. Provision of reliable services, keeping pace with customers' preferences and tailoring products in response to changing patterns of demands are traits found in Peters and Waterman's (1982<sup>398</sup>) "excellent companies".

According to Atkinson (1986<sup>15</sup>), the competence of a firm to do a job well is just as important as the product which it is commissioned to build. The attention began to be levelled at the quality of buildings in the U.K. during the late 1970's, when many reports identified major failures to achieve acceptable levels of performance from the view-points of owners and users. Reports such as those of Freeman (1975<sup>205</sup>) and Bonshor and Harrison (1982<sup>50</sup>) have shown that faults in site workmanship cause about as many faults in design and materials specification. Faults generally result from a failure to comply with recognised and published good practices.

In the U.K. construction industry, initiatives for quality assurance in construction came both from government acting through the Property Services Agency (PSA, 1988<sup>407</sup>) and from large industrial clients (Cheetham and Lewis, 1993<sup>111</sup>).

The Quality Management approach now adopted, and most commonly in use by the construction industry, is the management system certification based on the experience of the manufacturing industry (Cheetham and Lewis, 1993<sup>111</sup>). In the manufacturing industry, there have been philosophical developments attributed to Deeming (1982<sup>152</sup>), Juran (1964<sup>289</sup>), but developed by the Japanese (Saski and Hutchins, 1984<sup>438</sup>, and Robson, 1986<sup>427</sup>).

The responsibility of the management of an enterprise is to establish a system of verification of work and to educate the workforce in its use (Cheetham and Lewis, 1993<sup>111</sup>). The management system of certification resulted in BS 5750 quality systems and its equivalent ISO 9000 series (British Standard Institution, 1979<sup>67</sup>). It can cover a wide range of products and include services such as design and contracting.

The purpose of a management system being assured based on BS 5750 is to ensure that the resulting product will comply with the specification. The BS 5750 offers three levels of quality management system:-

- Part 1:       Manufacturer accepts responsibility for the design production, installation and servicing of the product.
- Part 2:       Production or installation is to a set specification.
- Part 3:       Specifies a process of final inspection and test.

It is the third party assessment of management systems to BS 5750 part 2 which is currently attracting much attention, remarks Cheetham and Lewis(1993<sup>111</sup>). Cheetham and Lewis (1993<sup>111</sup>) also observed that "most contractors can only seek accreditation to Part 2 of BS 5750 but its limited scope and that it does not include accepting responsibility for design and specifying materials is not widely appreciated" p 126.



Since BS 5750 was developed for the manufacturing industry, a degree of interpretive licence is required to relate it to the construction industry (Cheetham and Lewis, 1993<sup>111</sup>). Ashford (1989<sup>13</sup>) in his publication on "The management of quality in construction", gives examples of its application to construction organisations. Similarly, Hughes and Williams (1991<sup>269</sup>) give detailed guidance for implementation by construction organisations.

Cheetham and Lewis (1993<sup>111</sup>) inform us that ".. many clients are insisting that in order to be included in tender lists, to be given the opportunity to bid for work, the contractors must be operating their business in a manner which has been certified by a third party as complying with BS 5750", p. 126.

For Rutland (1985<sup>434</sup>) and Finniston (1986<sup>196</sup>) quality management extends beyond the design office and construction sites. It is about winning contracts.

For managers and organisations involved in refurbishment, requisite skills and knowledge associated with quality control and assurance is vital for the future. When questioned about the future skills/knowledge in refurbishment management during the interview stage of this study, refurbishment organisations ranked Quality control/assurance highest, in terms of education/training.

Following on from the BS 5750 is the new BS 7750: Environmental Management Systems. Driven by legislation and pressures from the public and investors, contractors are expected to improve their environmental performance and disclose more information about it (CIRIA, 1993<sup>127</sup>).

The BS 7750 sets out a formal management framework to achieve good environmental practice. Achieving good environmental practice according to BS 7750 will depend on:-

- i. Awareness of relevant legislative and regulatory requirements.
- ii. Knowledge of the environmental effects of an organisation's activities, products and services.
- iii. Awareness of best practice and its relation to the company's present performance.
- iv. Formulation of objectives and targets to comply with legislation and achieve improved performance.
- v. Means of implementation and of monitoring achievement.

The Construction Industry Research and Information Association (CIRIA, 1993<sup>127</sup>) has developed a proposal in consultation with the government and industry which would provide guidance to construction organisations on the development of appropriate environmental management systems, with particular reference to BS 7750.

The Science Engineering Research Council (SERC) in a major research initiative designed to encourage greater innovation in the construction industry, published a paper titled "Construction as a manufacturing process" (New builder, 1994c<sup>382</sup>). The SERC's view is that the provision of buildings and civil engineering processes can be regarded as an assembly industry. The key objective of the SERC is to transfer the ideas and culture prevalent in main-stream manufacturing into construction. According to the SERC, this will help to improve quality, productivity, and place the UK construction organisations in a better position to compete effectively with their

counterparts in Europe.

With construction being regarded as a manufacturing process, the nature of the competition facing UK manufacturing is well detailed in a wide ranging report (Competitiveness of UK manufacturing industry, HMSO) by the all-party commons trade and industry select committee. Clear about the challenges facing the British industry, the committee is quoted as saying that "There is an unprecedented opportunity to leave behind decades of relative decline and restore UK manufacturing as a whole to a position as a world leader ... action therefore needs to begin urgently" (Bassett, 1994<sup>27</sup>).

#### (ii). Increasing Contract Procurement Systems

Over the last decade, the U.K. Construction Industry has witnessed a growing trend away from the traditional forms of procuring contracts to other relatively new forms (Franks, 1990<sup>203</sup>, 1992<sup>204</sup>; Griffith, 1989<sup>231</sup>; Swanton, 1990<sup>472</sup>; and Torrance, 1992<sup>481</sup>). There are a number of contributing factors to this decline in the traditional forms of contract, these include, problems associated with the separation of design from construction - e.g. poor communication, lack of integration (Emmerson, 1974<sup>175</sup>; Banwell, 1964<sup>22</sup>; Sidewell, 1979<sup>445</sup>); increasing project complexity (Bennett and Fine, 1980<sup>34</sup>); economic changes - i.e. inflation and recession (Nahapiet and Nahapiet, 1985a<sup>369</sup>, 1985b<sup>370</sup>, Rowlinson, 1986<sup>431</sup>); and better informed, more professional clients demanding that projects are completed within cost, time and quality criteria (Naoum and Langford, 1990<sup>372</sup>; Bennet and Flanagan, 1983<sup>35</sup>; Naoum and Coles, 1990<sup>373</sup>).

There is considerable evidence of clients dissatisfaction and widespread disputes and conflicts over apportionment of risks and time overrun of projects, arising from the type of contracts chosen (Fenn, 1991<sup>190</sup>, 1992<sup>191</sup>; Clegg, 1992<sup>117</sup>; NEDO, 1991<sup>379</sup>). Fenn (1991<sup>190</sup>) in his article on "Managing corporate conflict and settling disputes on construction projects", has shown that construction litigation had increased in recent years by way of actions commenced, and that the number of actions proceeding to trial is around 150 per year.

Clegg (1992<sup>117</sup>) notes that "contract causes conflict because they are the rational occasions whereby indexicality can be exploited by self interested professionals in the design and construction processes" (p. 7) , "indexicality" being a technical term which refers to a situation where the meaning of something is always contingent upon someone else interpreting it.

Apart from the traditional forms of contract where independent professionals (i.e. architects, engineers and quantity surveyors) are employed by the client to complete design, and the client entry into a separate contract with a building contractor to construct the designed building, other newer forms of contracts now exist. These include design and build, management contracting and project management.

Design and Build is the fastest growing procurement system in the U.K. (Franks, 1992<sup>204</sup>; Cheetham and Jaggar, 1990<sup>110</sup>; Contract Survey, 1989<sup>131</sup>). Franks (1992<sup>204</sup>) estimates that Design and Build contracts account for about 35% of non-industrial and non-housing turnover in the U.K. construction industry. This figure approaches

45% when industrial and housing turnover are included. Design and Build is therefore firmly established as a procurement option in the U.K. construction industry, and is expected to increase further. Recent reports (Frank, 1990<sup>203</sup>, 1992<sup>204</sup>; Griffiths, 1989<sup>231</sup>) have shown that Design and Build has been growing at an average rate of 15% per annum. Following this trend, these reports indicate that by the year 2000, over 50% of the construction workload in the U.K. will be procured through design and build.

With the Design and Build procurement system the contractor is, in effect, made responsible for the whole process of the works including the design and construction elements. Although there are a number of variants to Design and Build (CIOB, 1988<sup>108</sup>), the design and build form of contract is primarily structured in the interest of the client. It provides a single point responsibility and a clear line of redress if technological and contractual difficulties arise. It also increases efficiency through improved communication.

Griffith (1989<sup>231</sup>) informs us that Design and Build is not without its limitations. With the contractor being responsible for the Design and Construction elements of the building, Griffith (1989<sup>231</sup>) argues that the client is at risk where the contractor does not fully appreciate the full risk associated with design. Similarly, the client is at risk if the contractor does not have full indemnity insurance cover.

With the increasing trend toward Design and Build contracts, refurbishment managers and their organisations would need to be more knowledgeable about this procurement system if they are to remain competitive, and also, if they are to

provide the kind of services which clients demand.

In Management Contracting, while the contractor is involved in co-ordinating the design with the construction of the project, the contractor does not carry out the function of a designer. The role is strictly that of management (CSSC, 1991<sup>100</sup>). Unlike in design and build where the contractor is paid on a variable profit margin, the management contractor is appointed as the consultant to give a construction management service in return for reimbursement on a fee and prime cost basis (Naoum and Coles, 1990<sup>373</sup>). The management contractor is therefore part of the clients' team, carrying out total management function in partnership with other members of the client team, to the overall benefit of the client. One of the weaknesses of Management Contracting, according to Torrance (1992<sup>481</sup>), is that "there is no standard approach and there is no standard appreciation of the roles and responsibilities" p. 251. Where various parties do not fully understand their roles and responsibilities, it is not only likely to affect operation efficiency, but will also complicate dispute resolutions. Wilson (1983<sup>506</sup>) considers that it is the client who has to decide what the roles and responsibilities of the various parties to the contract are, in order to have a balanced team.

Naoum and Langford (1987<sup>371</sup>) in their study on Management Contracting suggested that few firms are operating management contracting successfully. The key to success in the management contracting market will be found by enhancing appropriate management skills/ knowledge. Bale (1985<sup>18</sup>) suggested that further improvements in the general level of competence are needed if management contracting is not discredited by poor application.

Moore (1985<sup>359</sup>), in his study on management contracting, involving 36 construction firms, concluded that serious repercussions of inadequate practice could be avoided if alteration is given to the acquisition of relevant construction management skills.

Project Management is another distinct procurement system, where the client employs an organisation to carry out all the necessary functions to procure the building. The project manager is invested by the client with all the necessary powers to achieve that aim (Hamilton, 1990<sup>242</sup>).

Bennett and Flanagan (1983<sup>35</sup>) have observed that project management is usually confined to complex or large projects with a high technological content, and also where the client lacks the experience or time to deal with the building industry. Hamilton (1990<sup>242</sup>) suggests that project management may be attractive to clients who choose not to be closely involved in the procurement process because of the single point of contact through the project manager.

Looking into the future direction of the U.K. project procurement, Hamilton (1990<sup>242</sup>) suggests that the client body is not yet fully satisfied with the services offered by the industry, and there are likely to be more variations in the basic range of procurement systems in the future.

Hughes (1992<sup>270</sup>) also notes that " The construction industry and its clients are still trying to sort out reliable methods of procuring construction", p. 105.

The selection of the "right" procurement option for the "right" project is vital. Several studies have been conducted, attempting to set out criteria and guidelines in choosing a procurement option for a given project (Ireland, 1985<sup>279</sup>; Hamilton, 1987<sup>241</sup>; Skitmore and Marsden, 1988<sup>454</sup>; BEC, 1987<sup>75</sup>). Expert systems have also been developed to provide guidance on the most suitable procurement system for a given circumstance (Brandon, 1990<sup>61</sup>; Brandon et al., 1988<sup>62</sup>). However, Ireland (1985<sup>279</sup>) in an extensive study of the factors affecting procurement selection, was forced to conclude that no mutually exclusive sets of criteria uniquely and completely determine the appropriate procurement arrangement for a specific project.

To have a competitive advantage in the marketplace, refurbishment organisations and their managers would need requisite skills/knowledge of the types of contract procurement options relevant in meeting the increasing needs and expectations of construction clients for the future.

### (iii). Improving Technology

Advancement in technology is now regarded by many construction writers as one of the factors likely to shape the future of construction management (CSSC, 1989<sup>99</sup>; Chow, 1989<sup>114</sup>; Brochner, 1990<sup>69</sup>).

Technology in the context of this study is to embrace information technology. It also incorporates management techniques.



Whistler (1970<sup>496</sup>), sees information technology as a generic name used in describing three aspects of technology, namely:-

- (i). Transmission of information (communication).
- (ii). Transformation of information (computation).
- (iii). Modelling (symbolic).

Several studies have been conducted looking at trends in the use of information technology, the impact of information technology on construction, and how the construction industry can make the best use of information technology.

It is generally accepted that the initial period of penetration of information technology (I.T.) into organisations is slow, each application having different diffusion rates depending on prevailing factors in each industry (Curnow, 1981<sup>147</sup>; Twiss, 1981<sup>484</sup>). When compared to other industrial sectors, such as manufacturing, travel, banking and insurance, the construction industry is trailing behind in accepting and employing information technology (Hollingworth, 1985<sup>264</sup>; Vickery, 1989<sup>485</sup>).

Young (1990<sup>511</sup>) suggests that the impact of I.T. on the construction industry depends on both the extent of use and the speed at which the industry accept new technology.

Four main factors are cited as limiting the speed of I.T. amongst potential users. These are : relative cost of software to hardware (Young, 1990<sup>511</sup>; Northcott, 1986<sup>385</sup>; Stoneman et al., 1982<sup>468</sup>; Barras and Swann, 1983<sup>24</sup>); attitudinal constraints such as management reactive attitudes towards computer technology (Bevington,

1984<sup>40</sup>; Kearney, 1984<sup>293</sup>); organisational size (Cousins, 1977<sup>140</sup>; Gershuny and Miles, 1983<sup>214</sup>; CICA, 1986<sup>124</sup>); and, fragmented nature of the industry (Building IT 2000, 1991<sup>76</sup>).

Barras and Swann (1983<sup>24</sup>) observed that small companies lack financial backing and are less able to compete. In contrast, larger organisations have financial backing and take advantage of technical innovation (Hollingworth, 1986<sup>265</sup>).

However, recent studies (Peat Marwick McLintock/ Construction Industry Computing Association (CICA), 1990<sup>395</sup>; France, 1993<sup>202</sup>; Building IT 2000, 1991<sup>76</sup>) have shown that firms are using more computer networks, and that contractors investment in I.T. is on the increase.

Although investment in I.T. in construction firms is on the increase, the Peat Marwick/ CICA (1990<sup>395</sup>) study shows that major contractors only spend 0.5% of turnover on I.T. while large consultants spend 1.5% of fees. Regarding this comparatively low investment in IT by the construction industry,

Betts et al. (1991a<sup>38</sup>) note that, "Construction needs to invest more heavily in I.T. resources" p. 511.

It is now becoming generally accepted that industries have a lot to gain from information technology, now, and in the future. Earl (1989<sup>171</sup>) suggests that we live in an information society at present, where the key resource is knowledge, and where information technology (I.T.) is the enabling mechanism.

The Centre for Strategic Studies in Construction (CSSC) (1988<sup>98</sup>) in their report on "Building Britain 2001" pointed out that information technology (I.T.) is "changing design and construction methods, even if only gradually" p. 14.

The National Economic Development Council's (NEDC) Construction Chairman, Sir Christopher Foster, was quoted in *New Builder* (4 April, 1993) as saying, "We have an instrument (I.T.) to revolutionise the Industry. But if we do not get a grip on it, we will fall behind those who do".

Porter (1985<sup>404</sup>) maintains that IT can help identify and win niche markets, and also add value to an otherwise standard product. Brochner (1990<sup>69</sup>) suggests that the use of information technology by construction firms leads to an improvement in co-ordination, inspection and translation; enabling organisations to offer greater employee incentives, and also reduce transaction costs.

However, Chow (1989<sup>114</sup>) and Peat Marwick/ CICA (1990<sup>395</sup>) have shown the impact on construction organisations to be small.

Although there seems to be a general agreement that interpersonal communication will increase as a result of IT (Greenburger et al. 1976<sup>230</sup>; Hirschheim, 1984<sup>260</sup>), opinions differ among writers as to the impact of IT on decision making within management levels.

Those who have control over information flow, maintains Whistler (1970<sup>496</sup>), will assert considerable influence. Decision making is likely to reside at the centre if

information systems are to be centrally located. This would have the effect of removing decision making from lower management positions, and increasing decision making in the middle and senior management positions.

Carroll (1967<sup>90</sup>) and Withington (1969<sup>507</sup>) are of the view that if information systems are centrally located, decentralised decision making, although reduced, will not necessarily be removed. Factors such as the nature of work, and one-off projects, require a flexible approach and can impose constraints on the option to centralise decision making.

According to Leavitt and Klahr (1967<sup>325</sup>) "effective" decision making will remain at the point of use, computer technology will only enhance decision making at existing level of management within the hierarchy.

For Warner (1984<sup>487</sup>), where participative decision making is the norm, computer technology will only extend the decision making process. Warner (1984<sup>487</sup>) maintains that computer literacy is essential for managers.

Harris and Mercer (1979<sup>249</sup>) inform us that if information technology is at all levels of management, head offices and sites, managers are able to take active role in decision making. Computer technology has the effect of raising level of awareness and improves decision making.

In 1983, a joint study by the Information Technology Group (1983<sup>276</sup>), Electronics EDC and the Employment and Technology Task force was conducted on the effects

of IT on all levels of management job content. Their study involved 15 companies from different industrial sectors. The study could not find any radical changes in the functions of managers as a result of computer technology. This tends to support Drucker's (1979<sup>167</sup>) view that the basic tasks of management will be unaltered. However, certain tasks such as decision making, handling of information and problem solving were enhanced. When routine tasks were removed, managers were able to maximise their time elsewhere.

The management of refurbishment work is a complex activity involving not only different individuals operating in a project environment, but also involves the mobilising and controlling of expenditure progress and standards of production. Such an activity demands not only a basic need to be usefully informed through the knowledge of people, but also through reference to current factual information. Refurbishment works therefore demand a flexible and effective management of information. However, Betts (1991<sup>37</sup>) informs us that there is a substantial information management problem in construction, and a need for greater flexibility in the way that project information can be retrieved and presented.

Several studies have attempted to address this issue by exploiting the technology available (Baxendale , 1987<sup>30</sup>; CCPI, 1987<sup>133</sup>; Betts, 1991<sup>37</sup>; Crow, 1990<sup>144</sup>; Edgil and Kirkham, 1987<sup>174</sup>; Bjork, 1992<sup>45</sup>; Aouad et al., 1993<sup>10</sup>).

A five year joint study in the U.K. between bodies representing building contractors, architects, surveyors and engineers (Co-ordinating Committee for Project Information, CCPI, 1987<sup>133</sup>) resulted in the development of a common arrangement

for project information that applies to drawings, specifications and quantities of project data within the construction industry. Although this work addressed the information management problem through co-ordination, Betts (1991<sup>37</sup>) noted that "it has not led to a more flexible project information retrieval", p.233.

Baxendale (1987<sup>30</sup>) recommends a classification system that incorporates information on elements, work sections and locations in a combined system.

Betts (1991a<sup>38</sup>) has argued that the way in which information technology is currently used in construction includes its use for producing standardised document formats, and for data retrieval from classification systems. According to Betts, all these imitate manual methods and do not strategically exploit IT to find a new solution to the problem. However, progress is being made to exploit Information Technology (IT) for new solutions (Hardcastle and Middleton, 1987<sup>247</sup>; Crow, 1990<sup>144</sup>). Crow (1990<sup>144</sup>) advocates Management Information Systems (MIS), to attempt to establish the different information of users and presenting project information reports to users.

Information modelling is also being employed in addressing the information management problems of flexibility, retrieval and presentation (Bjork, 1992<sup>45</sup>; Aouad et al., 1993<sup>10</sup>; Edgil and Kirkham, 1987<sup>174</sup>).

For refurbishment organisations to survive and remain competitive in what is an information era (Earl, 1989<sup>171</sup>), the skills and knowledge associated with information technology is vital.

Betts et al. (1991b<sup>39</sup>) have suggested that all levels of management in construction need to embrace IT. They also note that, "Professional institutions may influence this issue by identifying IT awareness and management skills as an important component of continuing professional development programmes", p. 37.

Regarding education and training for Information Technology in construction management, Young (1991a<sup>513</sup>) maintains that, "It is time the construction industry came to terms with the whole issue of education and training by implementing a fundamental strategy - that is investing in the education and training of its workforce", p. 129.

Young (1991a<sup>513</sup>) also maintains that for construction personnel, education and training for IT should be provided on two levels, i.e. strategic and operational level. Courses at the strategic level should provide managers with an understanding of how IT can be used to gain both competitive advantage and efficiency. Courses at the operational level would need to embrace areas such as keyboard skills, knowledge of computer language, and assessing and manipulating data.

#### (iv). Demographic Factors

The future of refurbishment organisations is likely to be affected by demographic factors. Discussions on the likely impact of demographic factors on refurbishment will be conducted at two levels, namely:-

- (i) Demographic changes and availability of potential workforce for refurbishment organisations.

(ii) Demographic changes and how they affect housing refurbishment.

Demographic factors include the rate of population change, and also, changes in age structure.

In recent years, reports have been published by government establishments (NEDO, 1988<sup>378</sup>; the Employment Department, 1988<sup>176</sup>); and by the Construction Industry (CSSC, 1988<sup>98</sup>; 1989<sup>99</sup>), describing the likely impact of demographic factors on organisations.

Both the NEDO (1988<sup>378</sup>) report, "Young people and the labour market - a challenge for the 1990's", and the Employment Department (1988<sup>176</sup>) report titled "Employment for the 1990's", inform us that the number of school leavers entering the labour market is declining. School leavers represent one of the largest sources of manpower in the U.K. labour market (NEDO, 1988<sup>378</sup>).

Between 1987 and 1995 the number of 16 - 24 year olds in the labour market is projected to fall by 1.2 million. This value is even greater if students with a part-time job are excluded.

Similarly, the labour force is ageing, containing many more 25 - 54 year olds, and almost as many over 55's as now. It is also projected that women will form a substantial proportion of the workforce. All these changes will mean that employers will face a variety of unfamiliar demands from the workforce, and will further fuel the demand for skilled and knowledgeable employees.



According to the Employment Department (1988<sup>176</sup>), employers cannot expect to recruit as many young and well-qualified people as they have in the past. Competition will be more intense for better qualified people (Employment Gazette, 1988a<sup>178</sup>).

Lansley (1990<sup>320</sup>) maintains that if the Construction Industry is to attract, recruit and retain its workforce, a concerted effort is urgently needed. Similarly, as the Centre for Strategic Studies in Construction (CSSC, 1988<sup>98</sup>) pointed out, there will be a need for companies to reassess attitudes towards older employees and retraining.

According to Bowcott (1990<sup>54</sup>) and the CBI (1990<sup>121</sup>), continuous education will be an accepted practice, and the issues regarding quality of working life will have to be taken seriously.

Refurbishment organisations need to start planning ahead if they are to adjust to the changing circumstances. Their managers will also need to be educated and trained for relevant skills/ knowledge associated with the kind of work they do.

Demographic changes in house hold composition in the U.K. is likely to have an impact on housing refurbishment. The Department of the Environment (DOE, 1991<sup>157</sup>) projected an increase in one person households and a decrease in married couples households (see Table 74). One person households are expected to increase from just over 5 million in 1991 to 6.4 million in 2001 and 7.6 million in 2011. Similarly, lone-parent households will increase from 1.9 million in 1991 to 2.3 million in 2001 and 2.5 million in 2011.

In contrast, married couple households will decline from 10.6 million in 1991, to 10.1 million in 2001 and then 9.8 million in 2011. Average household size is also decreasing, see Table 74.

According to Fleming and Nellis (1992<sup>199</sup>), the increase in the number of both single-person households and one-parent families is a combined result of a rise in divorce, later marriage, an ageing population ( and thus more widows and widowers) and a higher propensity for unmarried people to live alone.

The growing number of single parent households and one-parent families have implications to the refurbishment sector. According to Fleming and Nellis (1992<sup>199</sup>), "These trends have important implications for the structure of the housing stock and the house building industry with the increased needs they generate for small dwellings and the conversion of existing stock to accommodate many more one-person and smaller families", p. 20.

**Table 74: Household Composition In England And Wales: 1989 - 2011**

<u>Household Types*</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1996</u>	<u>2001</u>	<u>2006</u>	<u>2011</u>
	(Thousands: 000)						
One person household	4,832	4,947	5,093	5,756	6,354	6,941	7,559
Lone parent household	1,785	1,836	1,891	2,148	2,336	2,463	2,542
Married couple household	10,646	10,613	10,572	10,342	10,142	9,964	9,811
Average household size	2.52	2.50	2.48	2.41	2.37	2.32	2.27

**\* Definitions**

One person household: A person living alone who shares neither housekeeping nor a living room with anyone else.

Lone-parent household: A household headed by a parent living with one (or more) never married child(ren).

Married couple household: A household headed by a married couple with or without children.

\* Source: Department of the Environment (DOE) Household Projections, England 1989 - 2011, HMSO, 1991

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For organisations specialising in housing refurbishment, the future would appear to look promising. For organisations seeking to diversify into the refurbishment market, there would appear to be opportunities in the conversion of large dwellings into smaller flats.

### **9.3. Perceived Importance Of Future Skills/Knowledge : Refurbishment Managers' Views.**

Refurbishment managers' perceptions were sought regarding the important skills/knowledge for the future. Managers who participated in the postal questionnaire were asked to indicate from a list of 75 skills/knowledge those which they perceive to be "very important", "important", "fairly important" and "not important" for the future ( see Questionnaire in Appendix A). Managers were also reminded to consider how their jobs will change, if at all, within the next five years. Average scores were computed from the data received. Table 75 presents the full list of 75 management skills/knowledge for the future. As mean score increases, this signifies decreasing importance attached to the skill/knowledge.

From an inspection of Table 75, refurbishment managers ranked communication and leadership, first and second respectively in order of importance. Quality control and assurance, ranked 11th in importance in managers' present jobs, rises to 5th place as future skills/knowledge, indicating a greater requirement for the knowledge of quality management in the future. Budgetary control assumes equal standing now, and in the future (ranked 8th).

Analysis of project risks/uncertainty ranked 26th in importance at present, rises to 18th place in the future, whereas, forecasting and planning which was not considered as one of the most important skills/knowledge at the present time is ranked 13th for the future. These comparisons are shown in Table 76. The categories "very important" and "important" are combined to form the "most important" skills/knowledge.

**Table 75: Management Skills And knowledge Perceived As Most Important In Managing Refurbishment Work In The Future: Refurbishment Managers**

<b><u>Skills/Knowledge (Job dimensions)</u></b>	<b><u>Mean Scores (N=142)</u></b>	<b><u>Rank</u></b>
Communication (oral/written)	1.028	1
Leadership	1.042	2
Health and safety	1.070	3
Supervision of others	1.077	4
Quality control and assurance	1.016	5
Team building	1.127	6
Decision making	1.162	7
Budgetary control	1.169	8
Motivation of others	1.190	9
Setting objectives and goals	1.211	10
Site organisation	1.289	11
Managing time	1.296	12
Forecasting and planning	1.303	13
Conducting meetings	1.314	14
Employee training: supervisor/foreman	1.324	15
Delegating responsibilities	1.359	16
Employee training: management	1.366	17
Analysis of project risks/uncertainty	1.373	18
Materials planning and control	1.394	19
Managing change	1.408	20
recruit/select: supervisor/foreman	1.423	21
Manpower planning and control	1.430	22
Programme design	1.430	23
Recruit/select: subcontractor	1.430	24
Negotiate: client	1.444	25
Negotiate subcontractor	1.472	26
Recruit/select: management	1.472	27
Programme maintenance (update)	1.472	28
Tenant welfare	1.479	29
Productivity maintenance and control	1.493	30
Costing and estimating	1.514	31
Competitive tendering	1.521	32
Identifying personal strength and weaknesses	1.542	33
Public relations	1.570	34
Managing conflict/crisis	1.592	35
Competitor awareness	1.634	36
Employee training: manual labour	1.655	37
Site security	1.676	38
Negotiate: main contractor	1.690	39
Career development/appraisal	1.697	40
Recruit/select: manual labour	1.704	41
Organisation of communication systems	1.739	42
Employee welfare/counselling	1.754	43
Managing job stress	1.768	44

Negotiate: supplier	1.866	45
Company (strategic) planning	1.880	46
Use of computer technology	1.887	47
Organisation structure	1.915	48
Creativity	1.923	49
Construction law	1.937	50
Plant planning and control	1.951	51
Job analysis/specification	1.958	52
Client/consumer protection law	1.993	53
Employment legislation	2.007	54
Contract drafting	2.014	55
Code of practice/working rule agreement	2.014	56
Termination/dismissal: subcontractor	2.042	57
Promotion and transfer	2.056	58
Company accounting	2.113	59
Termination/dismissal: management	2.162	60
Decanting buildings	2.169	61
Termination/dismissal: supervisor/foreman	2.169	62
Sources of finance	2.176	63
Planning law	2.239	64
Advertising and promotion	2.246	65
Negotiate: government bodies	2.268	66
Property insurance	2.289	67
Termination/dismissal: manual labour	2.296	68
Market research	2.338	69
Company law	2.380	70
Organisation culture	2.472	71
Negotiate: trade unions	2.493	72
Managing other national culture	2.732	73
Demotion and retirement	2.732	74
Foreign language	2.859	75

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**Table 76: A Comparison Of The Rank Order Of Most Important Skills And Knowledge For Refurbishment (Present And Future): Refurbishment Managers**

<u>Rank</u> <u>(N=142)</u>	<u>Present</u>	<u>Future</u>
1.	Leadership	Communication (oral/written)
2.	Communication (oral/written)	Leadership
3.	Motivation of others	Health and safety
4.	Health and safety	Supervision of others
5.	Decision making	Quality control and assurance
6.	Forecasting and planning	Team building
7.	Site organisation	Decision making
8.	Budgetary control	Budgetary control
9.	Supervision of others	Motivation of others
10.	Team building	Setting objectives and goals
11.	Quality control and assurance	Site organisation
12.	Managing time	Managing time
13.	Materials planning and control	Forecasting and planning
14.	Manpower planning and control	Conducting meetings
15.	Setting objectives and goals	Employee training: supervisor/foreman
16.	Conducting meetings	Delegating responsibilities
17.	Managing conflict/crisis	Employee training: management
18.	Recruit/select: supervisor/foreman	Analysis of project risks/uncertainty
19.	Delegating responsibilities	Materials planning and control
20.	Programme maintenance (update)	Managing change
21.	Tenant welfare	Recruit/select: supervisor/foreman
22.	Public relations	Manpower planning and control
23.	Recruit/select: subcontractor	Programme design
24.	Employee training: supervisor/foreman	Recruit/select: subcontractor
25.	Competitive tendering	Negotiate: client
26.	Analysis of project risks/uncertainty	Negotiate: subcontractor
27.	Programme design	Recruit/select: management
28.	Identifying personal strength & weaknesses	Programme maintenance (update)
29.	Employee training: management	Tenant welfare
30.	Site security	Productivity maintenance and control
31.	Productivity maintenance and control	Costing and estimating
32.	Negotiate: client	Competitive tendering
33.	Costing and estimating	Identifying personal strength & weaknesses
34.	Competitor awareness	Public relations
35.	Managing change	Managing conflict/crisis

Table 77 compares the rank order of skills/knowledge which respondents in the study perceived as not important for refurbishment at present, and for the future.

An inspection of Table 77 suggests that, in the main, managers are in agreement as to the skills which are not important for refurbishment now, and in the future.

**Table 77: A Comparison Of The Rank Order Of 'Not Important' Skills And Knowledge For Refurbishment (Present And Future): Refurbishment Managers.**

<u>Rank</u> <u>(N=142)</u>	<u>Present</u>	<u>Future</u>
1.	Foreign language	Foreign language
2.	Demotion and retirement	Demotion and retirement
3.	Managing other national culture	Managing other national culture
4.	Planning law	Negotiate: trade unions
5.	Organisation culture	Organisation culture
6.	Use of computer technology	Company law
7.	Company law	Market research
8.	Termination/dismissal: manual labour	Termination/dismissal manual labour
9.	Negotiate: trade unions	Property insurance
10.	Termination/dismissal: management	Negotiate: government bodies
11.	Market research	Advertising and promotion
12.	Advertising and promotion	Planning law
13.	Negotiation: government bodies	Sources of finance
14.	Employee welfare/counselling	Termination/dismissal: supervisor/foreman
15.	Promotion and transfer	Decanting buildings

Foreign language is ranked highest as the skill/knowledge which is perceived as not important for refurbishment (present and future). Demotion and retirement, and managing other national culture are ranked second and third respectively. These results further lend support to the view that refurbishment organisations do not anticipate operating in foreign markets, in which case the need for foreign language, and an understanding of other countries' national cultures is minimal.

Interestingly, whilst the use of computer technology was ranked as not important in managers' present jobs, this is not the case for the future. In terms of relative ranking of the 75 management skills and knowledge for refurbishment, the use of computer technology is ranked 70th in order of importance for present job (see Table 1 Appendix B), whereas for the future it is ranked 47th (see Table 75 in the text).



Young (1988<sup>510</sup>) in her study on 'Career development in construction management' observed that the use of computer technology is becoming increasingly relevant for construction management.

The result of the present study would also indicate that refurbishment managers are becoming aware of the importance of the use of computer technology, and the likely impact of information technology (IT) on their organisations.

At the dis-aggregate level, senior, mid-level and junior managers' ratings on the most important skills/knowledge for the future will be considered. Comparisons will also be made with the skills/knowledge which managers at each level perceive to be important in their present jobs.

Senior managers' ratings on the most important skills/knowledge for the future are presented in Table 78. Prominently placed at the top three positions, are leadership, communication (oral/written), and health and safety. These are ranked 1st, 2nd and 3rd respectively as the most important skills/knowledge for the future (see Table 78). These three skills/knowledge are also perceived as the most important at present, although there is variation in their rank order (see Table 79).

**Table 78: Senior Managers' Ratings On The Most Important Skills And Knowledge (Job Dimensions) For The Future**

<u>Skills/Knowledge(Job dimensions)</u>	<u>Mean Scores(N=23)</u>	<u>Rank</u>
Leadership	1.000	1
Communication (oral/written)	1.000	2
Health and safety	1.000	3
Quality control and assurance	1.000	4
Managing change	1.087	5
Budgetary control	1.087	6
Supervision of others	1.087	7
Employee training: management	1.087	8
Decision making	1.174	9
Team building	1.174	10
Setting objectives and goals	1.174	11
Analysis of project risks/uncertainty	1.261	12
Tenant welfare	1.304	13
Employee training: supervisor/foreman	1.304	14
Programme maintenance (update)	1.348	15
Recruit/select: management	1.348	16
Forecasting and planning	1.391	17
Competitive tendering	1.435	18
Costing and estimating	1.435	19
Competitor awareness	1.435	20
Programme design	1.435	21
Site organisation	1.435	22
Productivity maintenance and control	1.478	23
Recruit/select: supervisor/foreman	1.478	24
Motivation of others	1.522	25
Managing time	1.522	26
Delegating responsibilities	1.522	27
Identifying personal strength & weaknesses	1.522	28
Use of computer technology	1.522	29
Organisation of communication systems	1.565	30
Negotiate: client	1.565	31
Recruit/select: subcontractor	1.565	32
Negotiate: subcontractor	1.609	33
Manpower planning and control	1.609	34
Career development and appraisal	1.609	35

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**Table 79: A Comparison Of The Rank Order Of Most Important Skills And Knowledge For Refurbishment (Present And Future): Senior Managers**

<u>Rank</u> <u>(N=23)</u>	<u>Present</u>	<u>Future</u>
1.	Communication (oral/written)	Leadership
2.	Health and safety	Communication (oral/written)
3.	Leadership	Health and safety
4.	Decision making	Quality control and assurance
5.	Budgetary control	Managing change
6.	Motivation of others	Budgetary control
7.	Forecasting and planning	Supervision of others
8.	Costing and estimating	Employee training: management
9.	Supervision of others	Decision making
10.	Team building	Team building
11.	Managing conflict/crisis	Setting objectives and goals
12.	Identifying personal strength/weaknesses	Analysis of project risks/uncertainty
13.	Managing time	Tenant welfare
14.	Site organisation	Employee training: supervisor/foreman
15.	Analysis of project risks/uncertainty	Programme maintenance (update)
16.	Recruit/select: supervisor/foreman	Recruit/select: management
17.	Quality control and assurance	Forecasting and planning
18.	Conducting meetings	Competitive tendering
19.	Manpower planning and control	Costing and estimating
20.	Recruit/select: subcontractor	Competitor awareness
21.	Materials planning and control	Programme design
22.	Employee training: management	Site organisation
23.	Setting objectives and goals	Productivity maintenance and control
24.	Delegating responsibilities	Recruit/select: supervisor/foreman
25.	Employee training: supervisor/foreman	Motivation of others
26.	Tenant welfare	Managing time
27.	Competitor awareness	Delegating responsibilities
28.	Managing change	Identifying personal strength/weaknesses
29.	Recruit/select: management	Use of computer technology
30.	Organisation of communication systems	Organisation of communication systems
31.	Competitive tendering	Negotiate: client
32.	Programme maintenance (update)	Recruit/select: subcontractor
33.	Programme design	Negotiate: subcontractor
34.	Public relations	Manpower planning and control
35.	Productivity control and maintenance	Career development and appraisal

Quality control which was ranked 17th by senior managers in their present job, rises to 4th in terms of importance for the future. Senior managers will increasingly have to take the lead on safety issues, and make their sub-ordinates aware of the implications to the organisation of a lapse in health and safety matters.

Budgetary control is ranked 6th in terms of importance for the future, marginally lower than in present job (ranked 5th).

The use of computer technology is ranked 29th by senior managers in terms of importance for the future. In the current study, in terms of relative position of all 75 management skills/knowledge in managers' present jobs, refurbishment managers place the use of computer technology in 54th position (see section 6.4). Again, this indicates that managers are becoming aware of the importance of computers and information technology for the future.

A closer observation of Table 79 suggests that, in the main, the skills/knowledge which senior managers perceive as most important for the future, are similar to those considered as most important at the present time, although their relative positions vary.

Table 80 records data on middle managers ratings regarding the most important skills/knowledge for the future. The interpersonal skills of leadership and communication are ranked 1st and 2nd respectively, as the most important skills for the future. Health and Safety also received high weighting. This is ranked 3rd in importance for the future, marginally lower than at present (ranked 1st, see Table 81).

Quality control and assurance which was ranked 15th in terms of importance for their present job, rises to 6th position for the future, again indicating the increasing significance of quality control in managing refurbishment work in the future.

**Table 80: Middle Managers' Ratings On The Most Important Skills And Knowledge (Job Dimensions) For The Future**

<b><u>Skills/Knowledge (Job Dimensions)</u></b>	<b><u>Mean Scores (N=59)</u></b>	<b><u>Rank</u></b>
Leadership	1.068	1
Communication (oral/written)	1.068	2
Health and safety	1.068	3
Supervision of others	1.068	4
Team building	1.102	5
Quality control and assurance	1.119	6
Budgetary control	1.136	7
Setting objectives and goals	1.203	8
Employee training: supervisor/foreman	1.203	9
Motivation of others	1.220	10
Decision making	1.237	11
Managing time	1.254	12
Negotiate: client	1.288	13
Analysis of project risks/uncertainty	1.288	14
Site organisation	1.288	15
Employee training: management	1.305	16
Forecasting and planning	1.322	17
Conducting meetings	1.322	18
Delegating responsibilities	1.322	19
Recruit/select: supervisor/foreman	1.339	20
Costing and estimating	1.373	21
Recruit/select: management	1.407	22
Negotiate: subcontractor	1.407	23
Materials planning and control	1.424	24
Manpower planning and control	1.441	25
Competitive tendering	1.441	26
Identifying personal strength/weaknesses	1.441	27
Managing change	1.441	28
Recruit/select: subcontractor	1.458	29
Managing conflict/crisis	1.542	30
Competitor awareness	1.559	31
Programme design	1.559	32
Employee training: manual labour	1.559	33
Tenant welfare	1.576	34
Public relations	1.593	35

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At the bottom of the Table 80 are job dimensions of tenant welfare and public relations. These job dimensions will still be of relevance for the future, as they are at present.

**Table 81: A Comparison Of The Rank Order Of Most Important Skill And Knowledge For Refurbishment (Present And Future): Middle Managers**

<u>Rank</u> <u>(N=59)</u>	<u>Present</u>	<u>Future</u>
1.	Health and safety	Leadership
2.	Leadership	Communication (oral/written)
3.	Motivation of others	Health and safety
4.	Communication (oral/written)	Supervision of others
5.	Budgetary control	Team building
6.	Decision making	Quality control and assurance
7.	Forecasting and planning	Budgetary control
8.	Site organisation	Setting objectives and goals
9.	Team building	Employee training: supervisor/foreman
10.	Supervision of others	Motivation of others
11.	Recruit/select: supervisor/foreman	Decision making
12.	Conducting meetings	Managing time
13.	Delegating responsibilities	Negotiate: client
14.	Recruit/select: subcontractor	Analysis of project risks/uncertainty
15.	Quality control and assurance	Site organisation
16.	Managing time	Employee training: management
17.	Programme maintenance (update)	Forecasting and planning
18.	Setting objectives and goals	Conducting meetings
19.	Managing conflict/crisis	Delegating responsibilities
20.	Manpower planning and control	Recruit/select: supervisor/foreman
21.	Employee training: supervisor/foreman	Costing and estimating
22.	Recruit/select: management	Recruit/select: management
23.	Analysis of project risks/uncertainty	Negotiate: subcontractor
24.	Site security	Materials planning and control
25.	Negotiate: client	Manpower planning and control
26.	Negotiate: subcontractor	Competitive tendering
27.	Materials planning and control	Identifying personal strength/weaknesses
28.	Programme design	Managing change
29.	Public relations	Recruit/select: subcontractor
30.	Competitive tendering	Managing conflict/crisis
31.	Competitor awareness	Competitor awareness
32.	Negotiate: main contractor	Programme design
33.	Employee training: management	Employee training: manual labour
34.	Identifying personal strength/weaknesses	Tenant welfare
35.	Tenant welfare	Public relations

For junior managers, again, the interpersonal skills are prominently placed in the top positions. Communication, leadership, motivation of others, and supervision of others are ranked 1st, 2nd, 3rd, and 4th respectively in terms of the most important job dimensions for the future ( see Table 82). Quality control which was ranked 12th in terms of importance at present, rises to 7th position for the future (see Table 83).

**Table 82: Junior Managers' Ratings On The Most Important Skills And Knowledge (Job Dimension) For The Future**

<u>Skills/Knowledge (Job dimension)</u>	<u>Mean Scores (N=60)</u>	<u>Rank</u>
Communication (oral/written)	1.000	1
Leadership	1.033	2
Motivation of others	1.033	3
Supervision of others	1.083	4
Decision making	1.083	5
Health and safety	1.100	6
Quality control and assurance	1.133	7
Team building	1.133	8
Site organisation	1.233	9
Budgetary control	1.233	10
Setting objectives and goals	1.233	11
Forecasting and planning	1.250	12
Managing time	1.250	13
Materials planning and control	1.250	14
Programme design	1.300	15
Conducting meetings	1.300	16
Delegating responsibilities	1.333	17
Manpower planning and control	1.350	18
Recruit/select: subcontractor	1.350	19
Productivity maintenance and control	1.367	20
Programme maintenance (update)	1.400	21
Employee training: supervisor/foreman	1.450	22
Tenant welfare	1.450	23
Public relations	1.467	24
Negotiate: subcontractor	1.483	25
Recruit/select: supervisor/foreman	1.483	26
Managing change	1.500	27
Analysis of project risks/uncertainty	1.500	28
Employee training: management	1.533	29
Negotiate: client	1.550	30
Employee welfare/counselling	1.567	31
Recruit/select: management	1.583	32
Managing conflict/crisis	1.600	33
Organisation of communication systems	1.617	34
Competitive tendering	1.633	35

**Table 83: A Comparison Of The Rank Order Of Most Important Skills And Knowledge For Refurbishment (Present And Future): Junior Managers**

<u>Rank</u> <u>(N=60)</u>	<u>Present</u>	<u>Future</u>
1.	Leadership	Communication (oral/written)
2.	Communication (oral/written)	Leadership
3.	Motivation of others	Motivation of others
4.	Health and safety	Supervision of others
5.	Forecasting and planning	Decision making
6.	Materials planning and control	Health and safety
7.	Supervision of others	Quality control and assurance
8.	Site organisation	Team building
9.	Decision making	Site organisation
10.	Team building	Budgetary control
11.	Manpower planning and control	Setting objective and goals
12.	Quality control and assurance	Forecasting and planning
13.	Managing time	Managing time
14.	Productivity control and maintenance	Materials planning and control
15.	Budgetary control	Programme design
16.	Tenant welfare	Conducting meetings
17.	Setting objectives and goals	Delegating responsibilities
18.	Public relations	Manpower planning and control
19.	Managing conflict/crisis	Recruit/select: subcontractor
20.	Programme maintenance (update)	Productivity maintenance and control
21.	Competitive tendering	Programme maintenance (update)
22.	Programme design	Employee training: supervisor/foreman
23.	Conducting meetings	Tenant welfare
24.	Employee training: supervisor/foreman	Public relations
25.	Delegating responsibilities	Negotiate: subcontractor
26.	Site security	Recruit/select: supervisor/foreman
27.	Analysis of project risks/uncertainty	Managing change
28.	Identifying personal strength and weaknesses	Analysis of project risks/uncertainty
29.	Employee training: management	Employee training: management
30.	Recruit/select: supervisor/foreman	Negotiate: client
31.	Negotiate: client	Employee welfare/counselling
32.	Managing job stress	Recruit/select: management
33.	Managing change	Managing conflict/crisis
34.	Costing and estimating	Organisation of communication systems
35.	Recruit/select: subcontractor	Competitive tendering



The skills/knowledge associated with operational management also received high weighting for the future. Site organisation, materials planning and control, and programme design are ranked 9th, 14th and 15th respectively (see Table 82).

Tenant welfare, and public relations are ranked 23rd and 24th respectively, although lower than in managers' present jobs, site management will in future still have to liaise and respond to the needs of tenants and the public.

In summary, the interpersonal skills of leadership, communication, motivation of others and supervision of others will be most important in the future for all levels of management as they are at present. Quality control and assurance is increasingly recognised as important for the future at all levels of management.

The financial management skill of budgetary control still remains more important in senior rather than in middle and junior management positions.

There is also an increasing awareness of the importance of computer and information technology. This is more so for senior rather than for junior management.

The last section of this chapter will consider refurbishment management education and training needs for the future from both the organisational and managerial perspectives. Comparisons will also be made between present and future education and training needs.

#### **9.4. Refurbishment Management Education And Training Needs For The Future: Managers' Perspective.**

Refurbishment managers who participated in the postal questionnaire were asked to indicate from a list of 75 job dimensions, those job dimensions for which they will need education/training in the future: "very much need", "much need", "need", and "not need" training (see Questionnaire in Appendix A).

Refurbishment managers were reminded to give due consideration on how their jobs will change, if at all, within the next five years. Average scores were computed from the data received. Table 84 presents the full list of 75 job dimensions. As means score increases, this signifies decreasing need for education and training.

An observation of Table 84 shows that health and safety, and quality control and assurance are ranked 1st and 2nd in terms of need for education and training for the future. Quality control which was ranked 6th in terms of present need for education and training, rises to 2nd place for the future (see Table 85).

**Table 84: Refurbishment Managers' Education And Training Needs For The Future**

<b><u>Job Dimensions</u></b>	<b><u>Mean Scores (N=142)</u></b>	<b><u>Rank</u></b>
Health and safety	1.317	1
Quality control and assurance	1.415	2
Use of computer technology	1.458	3
Communication (oral/written)	1.521	4
Leadership	1.528	5
Forecasting and planning	1.739	6
Analysis of project risks/uncertainty	1.739	7
Budgetary control	1.754	8
Motivation of others	1.775	9
Supervision of others	1.782	10
Employee training: supervisor/foreman	1.789	11
Managing time	1.803	12
Setting objectives and goals	1.803	13
Employee training: management	1.803	14
Team building	1.852	15
Negotiate: client	1.852	16
Conducting meetings	1.859	17
Managing conflict/crisis	1.866	18
Costing and estimating	1.866	19
Decision making	1.915	20
Negotiate: subcontractor	1.915	21
Managing change	1.923	22
Public relations	1.923	23
Programme design	1.951	24
Negotiate: main contractor	1.972	25
Construction law	1.972	26
Competitive tendering	1.986	27
Materials planning and control	1.986	28
Manpower planning and control	2.000	29
Career development and appraisal	2.042	30
Identifying personal strength/weaknesses	2.049	31
Recruit/select: management	2.056	32
Employee training: manual labour	2.058	33
Recruit/select: subcontractor	2.070	34
Recruit/select: supervisor/foreman	2.077	35
Managing job stress	2.092	36
Programme maintenance (update)	2.099	37
Delegating responsibilities	2.120	38
Site organisations	2.127	39
Organisation of communication systems	2.134	40
Productivity maintenance and control	2.176	41
Tenant welfare	2.190	42
Company (strategic) planning	2.204	43
Employment legislation	2.246	44
Client/consumer protection law	2.246	45

Contract drafting	2.268	46
Job analysis/specification	2.268	47
Competitor awareness	2.275	48
Company accounting	2.275	49
Negotiate: supplier	2.310	50
Recruit/select: manual labour	2.310	51
Creativity	2.324	52
Employee welfare/counselling	2.324	53
Company law	2.359	54
Termination/dismissal: subcontractor	2.366	55
Site security	2.380	56
Code of practice/working rule agreement	2.387	57
Negotiate: government bodies	2.401	58
Planning law	2.401	59
Termination/dismissal: supervisor/foreman	2.423	60
Sources of finance	2.458	61
Organisation structure	2.458	62
Plant planning and control	2.472	63
Termination/dismissal: management	2.493	64
Promotion and transfer	2.542	65
Property insurance	2.556	66
Advertising and promotion	2.592	67
Termination/dismissal: manual labour	2.676	68
Decanting buildings	2.690	69
Foreign language	2.711	70
Market research	2.725	71
Negotiate: trade unions	2.732	72
Organisation culture	2.746	73
Managing other national culture	2.880	74
Demotion and retirement	2.979	75

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Table 85 compares data on job dimensions for which managers need education/training at present, and for the future. The categories "very much need", and "much need" are combined to form "most need" education and training.

The use of computer technology remains unchanged at 3rd position. For refurbishment managers, education and training is needed in the skills and knowledge associated with computers and information technology if they are to remain competitive in an information society (Earl, 1989<sup>171</sup>).

**Table 85: A Comparison Of The Rank Order Of Job Dimensions For Which There Is Most Need For Education And Training (Present And Future): Refurbishment Managers**

<u>Rank</u> (N=142)	<u>Present</u>	<u>Future</u>
1.	Forecasting and planning	Health and safety
2.	Analysis of project risks/uncertainty	Quality control and assurance
3.	Use of computer technology	Use of computer technology
4.	Employee training: supervisor/foreman	Communication (oral/written)
5.	Health and safety	Leadership
6.	Quality control and assurance	Forecasting and planning
7.	Employee training: management	Analysis of project risks/analysis
8.	Budgetary control	Budgetary control
9.	Competitive tendering	Motivation of others
10.	Negotiate: client	Supervision of others
11.	Managing time	Employee training: supervisor/foreman
12.	Setting objectives and goals	Managing time
13.	Costing and estimating	Setting objectives and goals
14.	Managing conflict/crisis	Employee training: management
15.	Leadership	Team building
16.	Construction law	Negotiate: client
17.	Career development and appraisal	Conducting meetings
18.	Communication (oral/written)	Managing conflict/crisis
19.	Motivation of others	Costing and estimating
20.	Recruit/select: subcontractor	Decision making
21.	Recruit/select: supervisor/foreman	Negotiate: subcontractor
22.	Organisation of communication systems	Managing change
23.	Programme design	Public relations
24.	Employee training: manual labour	Programme design
25.	Team building	Negotiate: main contractor
26.	Manpower planning and control	Construction law
27.	Managing job stress	Competitive tendering
28.	Managing change	Materials planning and control
29.	Public relations	Manpower planning and control
30.	Supervision of others	Career development and appraisal
31.	Recruit/select: management	Identifying personal strength/weaknesses
32.	Productivity maintenance and control	Recruit/select: management
33.	Conducting meetings	Employment training: manual labour
34.	Tenant welfare	Recruit/select: subcontractor
35.	Job analysis/specification	Recruit/select: supervisor/foreman

Forecasting and planning, and analysis of project risks/uncertainties are rated highly in terms of need for education and training. Although displaced from 1st and 2nd positions (present job) to 6th and 7th (future) respectively, the high rating of these two job dimensions indicate the nature of the works. Refurbishment work is difficult

to forecast and plan, and full of inherent risks/ uncertainties. It is therefore not surprising that these are two areas for which managers most need education and training.

Interpersonal skills also received high weighting for the future. Communication, leadership, motivation of others, and supervision of others are ranked 4th, 5th, 9th and 10th respectively. Refurbishment managers in the current study perceive their need for education/training in interpersonal skills to be higher in the future than in their present job (see Table 85).

This could be explained in part by the increasing subcontract labour (CSSC, 1988<sup>98</sup>; Clarke, 1992<sup>115</sup>) and the increasing complexity of projects (CSSC, 1989<sup>99</sup>; Bufaied, 1987<sup>71</sup>; Mustapha and Langford, 1990<sup>368</sup>). Communication and leadership skills are necessary where there is an increase in fragmented specialised works, and also where there are difficulties in locating labour on site.

From inspection of Table 85, refurbishment managers ranked budgetary control 8th in order of need for education and training for the future. In effect there is no distinction between present and future need for budgetary control.

Midway down Table 84, the job dimensions associated with operational management are evident. Programme maintenance (update), and productivity maintenance and control are ranked 37th and 41st respectively.

Further down Table 84, foreign language, managing other national culture, and demotion/retirement received low rating, being ranked 70th, 74th and 75th respectively. This result further supports the view that refurbishment organisations do not anticipate participating in foreign markets, where an understanding of foreign languages and other countries' national cultures are needed.

At the dis-aggregate level, senior, middle, and junior managers' ratings on job dimensions for which they most need education/training for the future will be considered. At each level of management, comparisons will be made between present and future needs.

Table 86 presents data on senior managers' ratings on the job dimensions for which there is most need for education/training in the future. An observation of Table 86 shows that for senior managers, quality control/assurance, health and safety, and the use of computer technology are the highest ranked job dimensions for which there is most need for education and training for the future.

Analysis of project risk/uncertainty, and forecasting and planning which were ranked 1st and 2nd as present needs, are displaced into 6th and 7th positions respectively, for the future, by quality control/assurance and health and safety. (see Table 87)

**Table 86: Senior Managers' Ratings On The Job Dimensions For Which There Is Most Need For Education And Training In The Future**

<b><u>Job Dimensions</u></b>	<b><u>Mean Scores (N=23)</u></b>	<b><u>Rank</u></b>
Quality control and assurance	1.304	1
Health and safety	1.348	2
Use of computer technology	1.391	3
Leadership	1.478	4
Budgetary control	1.522	5
Analysis of project risks/uncertainty	1.609	6
Forecasting and planning	1.826	7
Communication (oral/written)	1.826	8
Employee training: management	1.870	9
Supervision of others	1.870	10
Team building	1.957	11
Managing conflict/crisis	2.000	12
Managing time	2.000	13
Employee training: supervisor/foreman	2.043	14
Motivation of others	2.087	15
Competitive tendering	2.087	16
Managing change	2.087	17
Costing and estimating	2.087	18
Setting objectives and goals	2.130	19
Identifying personal strength/weaknesses	2.130	20
Managing job stress	2.174	21
Public relations	2.174	22
Negotiate: subcontractor	2.217	23
Organisation of communication systems	2.217	24
Negotiate: client	2.217	25
Manpower planning and control	2.261	26
Negotiate: main contractor	2.304	27
Programme design	2.304	28
Materials planning and control	2.304	29
Conducting meetings	2.348	30
Recruit/select: management	2.348	31
Productivity maintenance and control	2.348	32
Decision making	2.348	33
Tenant welfare	2.391	34
Programme maintenance (update)	2.391	35



**Table 87: A Comparison Of The Rank Order Of Job Dimensions For Which There Is Most Need For Education And Training (Present And Future): Senior Managers**

<u>Rank</u> <u>(N=23)</u>	<u>Present</u>	<u>Future</u>
1.	Analysis of project risks/uncertainty	Quality control and assurance
2.	Forecasting and planning	Health and safety
3.	Use of computer technology	Use of computer technology
4.	Health and safety	Leadership
5.	Budgetary control	Budgetary control
6.	Employee training: management	Analysis of project risks/uncertainty
7.	Competitive tendering	Forecasting and planning
8.	Employee training: supervisor/foreman	Communication (oral/written)
9.	Quality control and assurance	Employee training: management
10.	Negotiate client	Supervision of others
11.	Managing time	Team building
12.	Costing and estimating	Managing conflict/crisis
13.	Setting objectives and goals	Managing time
14.	Managing conflict/crisis	Employee training: supervisor/foreman
15.	Motivation of others	Motivation of others
16.	Leadership	Competitive tendering
17.	Communication (oral/written)	Managing change
18.	Career development and appraisal	Costing and estimating
19.	Managing change	Setting objectives and goals
20.	Recruit/select: subcontractor	Identifying personal strength/weaknesses
21.	Recruit/select supervisor/foreman	Managing job stress
22.	Construction law	Public relations
23.	Recruit/select: management	Negotiate: subcontractor
24.	Manpower planning and control	Organisation of communication systems
25.	Supervision of others	Negotiate: client
26.	Conducting meetings	Manpower planning and control
27.	Team building	Negotiate: main contractor
28.	Managing job stress	Programme design
29.	Identifying personal strength/weaknesses	Materials planning and control
30.	Programme design	Conducting meetings
31.	Productivity maintenance and control	Recruit/select management
32.	Public relations	Productivity maintenance and control
33.	Organisation of communication systems	Decision making
34.	Decision making	Tenant welfare
35.	Contract drafting	Programme maintenance (update)

In terms of ranking positions, there is no distinction between present and future needs for education and training in the use of computer technology, being ranked 3rd. For future needs, the interpersonal skills of leadership, communication, and supervision of others, also received high weighting, being ranked 4th, 8th and 10th respectively (see Table 86).

The knowledge of tendering competitively in order to win work is seen by senior managers to be necessary for the future. With increasing competition amongst organisations, and larger organisations moving into the refurbishment sector, it is not surprising that competitive tendering is ranked 16th (Table 86). The job dimensions of public relations, and negotiating with clients are also needed for the future. These are ranked 22nd and 25th respectively.

Table 88 presents data on middle managers' ratings on the job dimensions for which there is most need for education and training in the future. In middle managers' perceptions, the future need for education and training regarding health and safety, and Quality control/assurance issues increases in importance in comparison with current needs.

Health and safety, and quality control/assurance which were ranked 3rd and 5th respectively for present needs, rise to 1st and 2nd respectively, for refurbishment management, in the future (see Table 89)

There is no distinction between present and future needs for the use of computer technology, and budgetary control, being placed at 4th and 7th positions respectively.

Lower down Table 88, the future needs for operational management skills and knowledge are evident. Productivity maintenance & control, manpower planning/control, programme design, and programme maintenance (update) are ranked 21st, 24th, 25th and 28th respectively.

**Table 88: Middle Managers' Ratings On The Job Dimensions For Which There Is Most Need For Education And Training In The Future**

<b><u>Job Dimensions</u></b>	<b><u>Mean Scores (N=59)</u></b>	<b><u>Rank</u></b>
Health and safety	1.322	1
Quality control and assurance	1.424	2
Forecasting and planning	1.559	3
Use of computer technology	1.593	4
Analysis of project risks/uncertainty	1.661	5
Leadership	1.678	6
Budgetary control	1.696	7
Employee training: supervisor/foreman	1.695	8
Managing time	1.695	9
Communication (oral/written)	1.712	10
Supervision of others	1.746	11
Managing conflict/crisis	1.780	12
Recruit/select: supervisor/foreman	1.780	13
Team building	1.797	14
Negotiate: client	1.797	15
Setting objectives and goals	1.797	16
Conducting meetings	1.831	17
Employee training: management	1.847	18
Costing and estimating	1.864	19
Decision making	1.881	20
Productivity maintenance and control	1.915	21
Career development and appraisal	1.915	22
Identifying personal strength/weaknesses	1.915	23
Manpower planning and control	1.932	24
Programme design	1.966	25
Negotiate: subcontractor	1.966	26
Motivation of others	1.966	27
Programme maintenance update	1.983	28
Negotiate: main contractor	2.017	29
Recruit/select: subcontractor	2.034	30
Site organisation	2.034	31
Delegating responsibilities	2.051	32
Employee training: manual labour	2.051	33
Construction law	2.051	34
Termination/dismissal: supervisor/foreman	2.051	35

**Table 89: A Comparison Of The Rank Order Of Job Dimensions For Which There Is Most Need For Education And Training (Present And Future): Middle Managers**

<u>Rank</u> (N=59)	<u>Present</u>	<u>Future</u>
1.	Forecasting and planning	Health and safety
2.	Analysis of project risks/uncertainty	Quality control and assurance
3.	Health and safety	Forecasting and planning
4.	Use of computer technology	Use of computer technology
5.	Quality control and assurance	Analysis of project risks/uncertainty
6.	Employee training: supervisor/foreman	Leadership
7.	Budgetary control	Budgetary control
8.	Employee training: management	Employee training: supervisor/foreman
9.	Setting objectives and goals	Managing time
10.	Managing time	Communication (oral/written)
11.	Competitive tendering	Supervision of others
12.	Negotiate: client	Managing conflict/crisis
13.	Recruit/select: subcontractor	Recruit/select: supervisor/foreman
14.	Costing and estimating	Team building
15.	Managing conflict/crisis	Negotiate: client
16.	Recruit/select: supervisor/foreman	Setting objectives and goals
17.	Recruit/select: management	Conducting meetings
18.	Construction law	Employee training: management
19.	Employee training: manual labour	Costing and estimating
20.	Team building	Decision making
21.	Leadership	Productivity maintenance and control
22.	Motivation of others	Career development and appraisal
23.	Manpower planning and control	Identifying personal strength/weaknesses
24.	Public relations	Manpower planning and control
25.	Communication (oral/written)	Programme design
26.	Programme design	Negotiate: subcontractor
27.	Managing change	Motivation of others
28.	Materials planning and control	Programme maintenance (update)
29.	Career development and appraisal	Negotiate: main contractor
30.	Supervision of others	Recruit/select: subcontractor
31.	Programme maintenance (update)	Site organisation
32.	Tenant welfare	Delegating responsibilities
33.	Productivity maintenance and control	Employee training: manual labour
34.	Organisation of communication systems	Construction law
35.	Managing job stress	Termination/dismissal: supervisor/foreman

Health & safety, and quality control also occupy top positions in terms of need for education/training for junior management (see Table 90). The interpersonal skills such as communication, supervision of others and Leadership, also received high weighting by junior management, being ranked 3rd, 4th and 5th respectively.

**Table 90: Junior Managers' Ratings On The Job Dimensions For Which There Is Most Need For Education And Training In The Future**

<b><u>Job Dimensions</u></b>	<b><u>Mean Score (N=60)</u></b>	<b><u>Rank</u></b>
Health and safety	1.300	1
Quality control	1.300	2
Communication (oral/written)	1.317	3
Supervision of others	1.450	4
Leadership	1.467	5
Use of computer technology	1.483	6
Forecasting and planning	1.533	7
Motivation of others	1.667	8
Employee training: supervisor/foreman	1.667	9
Managing time	1.667	10
Analysis of project risks/uncertainty	1.683	11
Team building	1.717	12
Programme maintenance (update)	1.733	13
Programme design	1.733	14
Productivity maintenance and control	1.750	15
Manpower planning and control	1.750	16
Tenant welfare	1.767	17
Public relations	1.767	18
Site organisations	1.783	19
Managing conflict/crisis	1.783	20
Materials planning and control	1.783	21
Setting objectives and goals	1.783	22
Managing change	1.800	23
Budgetary control	1.867	24
Negotiate: subcontractor	1.883	25
Decision making	1.883	26
Organisation of communication systems	1.900	27
Conducting meetings	1.900	28
Employee training: manual labour	1.917	29
Negotiate: client	1.933	30
Site security	1.933	31
Costing and estimating	1.933	32
Career development and appraisal	1.950	33
Recruit/select: subcontractor	1.967	34
Managing job stress	1.967	35

In junior management's estimation, there is a marginal increase in the need for education and training regarding computer technology in comparison with current needs (see Table 91). The use of computer technology which was ranked 8th for present need for training, rises to 6th position for refurbishment management in the future (see Table 91).

The skills/knowledge associated with operational management also received high weighting for the future. Programme maintenance (update), programme design, productivity maintenance/control, and manpower planning and control are ranked 13th, 14th, 15th and 16th respectively (see Table 90). The need for operational management skills/knowledge are higher for junior managers rather than for middle or senior managers.

Lower down Table 90, the skills/knowledge of tenant welfare, public relations and site organisation are evident. Being able to relate and respond to the needs of tenants, and the general public will also be important for the future in refurbishment management.

Further down Table 90 are the job dimensions associated with site security, costing and estimating, and managing job stress. It is the responsibility of site management to secure construction sites in order to prevent theft, pilfering, and vandalism.

**Table 91: A Comparison Of The Rank Order Of Job Dimensions For Which There Is Most Need Education And Training (Present And Future): Junior Managers**

<b><u>Rank</u></b> <b><u>(N=60)</u></b>	<b><u>Present</u></b>	<b><u>Future</u></b>
1.	Forecasting and planning	Health and safety
2.	Health and safety	Quality control
3.	Analysis of project risks/uncertainty	Communication (oral/written)
4.	Employee training: supervisor/foreman	Supervision of others
5.	Quality control and assurance	Leadership
6.	Managing time	Use of computer technology
7.	Employee training: manual labour	Forecasting and planning
8.	Use of computer technology	Motivation of others
9.	Public relations	Employee training: supervisor/foreman
10.	Construction law	Managing time
11.	Recruit/select: supervisor/foreman	Analysis of project risks/uncertainty
12.	Communication (oral/written)	Team building
13.	Team building	Programme maintenance (update)
14.	Supervision of others	Programme design
15.	Manpower planning and control	Productivity maintenance and control
16.	Motivation of others	Manpower planning and control
17.	Managing conflict/crisis	Tenant welfare
18.	Recruit/select: manual labour	Public relations
19.	Setting objectives and goals	Site organisation
20.	Programme design	Managing conflict/crisis
21.	Costing and estimating	Materials planning and control
22.	Budgetary control	Setting objectives and goals
23.	Materials planning and control	Managing change
24.	Tenant welfare	Budgetary control
25.	Competitive tendering	Negotiate: subcontractor
26.	Productivity maintenance and control	Decision making
27.	Managing change	Organisation of communication systems
28.	Leadership	Conducting meetings
29.	Site organisation	Employee training: manual labour
30.	Programme maintenance (update)	Negotiate: client
31.	Managing job stress	Site security
32.	Conducting meetings	Costing and estimating
33.	Organisation of communication systems	Career development and appraisal
34.	Recruit/select: subcontractor	Recruit/select: subcontractor
35.	Identifying personal strength/weaknesses	Managing job stress

In summary, refurbishment managers at all levels are in agreement that the need for education and training in health and safety issues is vital for the future. Quality control/assurance, an important factor predicted by practitioners (Beard, 1987<sup>31</sup>; Atkinson, 1986<sup>15</sup>), government agencies (PSA, 1988<sup>407</sup>) and construction writers (Cruikshank, 1985<sup>146</sup>; Stewart, 1987<sup>462</sup>), for expanding managers' job content in the future, received the same recognition.

Refurbishment managers at all levels anticipate a greater need for computer technology, the need for education and training being greater for senior management rather than for middle, and junior management.

Future education and training needs in operational management skills/knowledge is greater for junior management rather than for middle and senior management.

The next section of this chapter will consider the future education and training needs of refurbishment organisations. Comparisons will also be made between present and future training needs of organisations.

#### **9.5. Refurbishment Management Education And Training Needs For The Future: Organisations' Perspective.**

Information regarding future education and training needs of refurbishment organisations was sought through interviews with 32 training officers. Below in Table 92, in decreasing order of importance, are 10 most cited areas for which there is most need for education and training.



**Table 92: Future Education And Training Needs Of Refurbishment Organisations**

<b><u>Rank (N=32)</u></b>	<b><u>Job Dimensions</u></b>
1.	Quality management
2.	Health and safety
3.	Contract law
4.	Communication (oral/written)
5.	Leadership
6.	Programming of the works
7.	Public relations/tenant liaison
8.	Pricing of the works
9.	Presentation/tender interview skills
10.	Language skills

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An inspection of Table 92 reveals that quality management, and health and safety are prominently placed in 1st and 2nd positions respectively. Refurbishment organisations, and refurbishment managers are in agreement as to the two areas of most need for education and training in the future. Education and training programmes designed with the future of refurbishment management in mind, would have to consider these two important job dimensions.

Contract law which was ranked 7th in terms of present need for education and training, rises to 3rd place for the future (see Table 93). With the proliferation of contract procurement systems, an understanding of their benefits and limitations are necessary for the future, if refurbishment organisations are to compete successfully in the market place, and also, if they are to meet the demands of increasingly knowledgeable clients.

**Table 93: A Comparison Of Rank Order Of Job Dimensions For Which Refurbishment Organisations Most Need Education And Training (Present And Future)**

<u>Rank</u> <u>(N=32)</u>	<u>Present</u>	<u>Future</u>
1.	Health and safety	Quality management
2.	Programming of the works	Health and safety
3.	Public relations/tenant liaison	Contract law
4.	Managing time	Communication (oral/written)
5.	Communication (oral/written)	Leadership
6.	Security	Programming of the works
7.	Contract law	Managing time
8.	Pricing of the works	Public relations/tenant liaison
9.	Quality management	Presentation/tender interview skills
10.	Leadership	Foreign language

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The interpersonal skills also received high weighting by refurbishment organisations. Leadership skills, which was ranked 10th in terms of present needs, rises to 5th as future need for education and training. Communication is ranked 4th, marginally higher than Leadership in terms of need for the future (Table 92).

Ranked least on Table 92 is Foreign language. The low degree of importance attached to an understanding of foreign languages further reinforces the fact that refurbishment organisations do not anticipate entering foreign markets.

#### **9.6. Conclusions And Recommendations.**

The purpose of this chapter was to provide a scenario of managing in a refurbishment environment in the future. It attempted to identify the major factors which are likely to affect refurbishment management, and how these factors impinge on relevant skills/knowledge, as well as education/training needs for refurbishment management in the future.

There are four factors that are apparent from examining emerging trends, which are likely to affect the management of refurbishment work in the future. These are:-

- (i) Increasing competition.
- (ii) Increasing contract procurement systems.
- (iii) Improving technology.
- (iv) Demographic factors.

Refurbishment managers and their organisations must be prepared to acquire the relevant skills and knowledge to contend with the changes that are likely to emerge in the future.

For refurbishment managers, the skills and knowledge of:-

- \* Managing people (interpersonal skills)
- \* Health and safety
- \* Quality control
- \* Forecasting & planning
- \* Analysis of project risks/uncertainty

are vital for the future. Educationalists designing courses with the future of refurbishment management in mind will need to consider these important areas.

In terms of education/ training needs, the job dimensions of:-

- \* Health and safety
- \* Quality control
- \* Use of computer technology
- \* Interpersonal skills

are necessary for refurbishment managers. Refurbishment organisations are also of the view that contract law is equally necessary for the future.

From a manager's perspective, the acquisition and development of these relevant skills and knowledge may facilitate career progress. For refurbishment organisations, to survive in an increasingly competitive market demands an effective management with the appropriate skills and knowledge which refurbishment work demands.

Ultimately, as effective management begins to permeate the labour market, this will help raise the image of the refurbishment sector.

## **CHAPTER TEN**

### **SUMMARY CONCLUSIONS AND RECOMMENDATIONS**

## **10.0. SUMMARY CONCLUSIONS AND RECOMMENDATIONS**

### **10.1. Introduction**

A study of management education and training for refurbishment within the construction industry has been undertaken. This chapter summarises the main conclusions of the study. It also re-states the main objectives of the study. In addition, recommendations are made to direct research efforts into other potential areas of refurbishment management.

### **10.2. Summary Of Conclusions**

The study commenced with a review of literature which suggested that management education and training in the United Kingdom is deficient, both in content and processes, and that UK organisations make less provisions for the education and training of their managers than those of our major competitors. Educators are also guilty of under-provision of courses.

There is no widely used, understood, and accepted framework for educating managers in the construction industry, and courses do not bear resemblance to the needs of industry.

From a review of literature, a discovery was made of the meagre amount of studies conducted in the refurbishment management domain. Evidence has also shown that the management education that exist in construction, are directed towards new build with little or nothing in the area of refurbishment.

Regarding the direction of management education and training in construction, previous studies and opinion suggested that:-

- (i). Construction management education and training should mirror the industry's needs, and that management skills/knowledge should be research based, taking into account the particular problems and special nature of sector differences.
- (ii). The structure of construction management education and training programmes should be modular, and the contents transferable, and geared to work based learning at a pace to meet the needs of individual managers.
- (iii). Education and training of managers should be throughout their working lives (Continuing Professional Development).

Management education and training for refurbishment work was chosen as the theme of the study. Following a systematic approach, literature on the general areas of refurbishment, management education and training, management skills and knowledge, and in construction management, was extensively studied. Within this framework, interviews were conducted with thirty-two (32) training officers of both large specialist and general refurbishment organisations. In addition, postal questionnaires were distributed to refurbishment managers of the same organisations. In all, one hundred and forty-two (142) managers responded positively to the questionnaires. Subsequent to that, follow-up interviews were conducted with twenty-two (22) refurbishment managers who had earlier participated in the postal questionnaire phase of the study.

Analysis of literature, discussions with authorities in the fields of construction management, and in management education and training, together with data collected at interviews, and from postal questionnaires, enable the following conclusions to be drawn.

Commencing with the importance and growth of the refurbishment sector, the main conclusions are:-

- (i). The refurbishment sector will keep contributing significantly to the overall UK construction output for many years to come.
- (ii). The large stock of redundant, and ageing buildings needing repair and modernisation; social, economic, political, planning constraints and technology are the major factors that give impetus to the growth in the refurbishment sector.

The study proceeded by analyzing the characteristics and difficulties associated with managing refurbishment work. The main conclusions are as follows:-

- (i). The major characteristics and difficulties which confront managers in carrying out refurbishment work are established. Cost control, dust control, influence of tenants on regular progress of the works, pricing of the works, and variation/change orders to the works are the most difficult refurbishment characteristics.



The least difficult characteristics are employee stress & absenteeism, building regulations/statutory controls, and plant supply.

(ii). Refurbishment work is complex, highly specialised, and contains elements of work which are unique to the refurbishment sector.

(iii). Evidence suggests that specialist refurbishment organisations find refurbishment characteristics less difficult than general refurbishment organisations. Clients may prefer to appoint a specialist refurbishment contractor where managers with a wide range of experience in refurbishment processes are less likely to find difficulties in carrying out refurbishment operations. Also, for those individuals wishing to embark upon a career in refurbishment, a specialist contractor may provide a rich vein of opportunity when compared to a general refurbishment contractor.

(iv). There is significant negative correlation between:-

\* The length of time a manager has spent working in the construction industry and the degree of difficulty of refurbishment characteristics.

\* The length of time a manager has been involved in managing refurbishment work and degree of difficulty of refurbishment characteristics.

\* The age of managers and the degree of difficulty of refurbishment characteristics.

(v). Refurbishment managers perceive refurbishment work to be more difficult than new build work. Work on occupied buildings are also more difficult to manage than work on un-occupied buildings.

(vi). When refurbishment projects are considered, hospitals, hotels and Ministry of Defence buildings (MOD) are the most difficult to manage, whilst recreational, industrial and agricultural buildings are the least difficult.

Contractors involved in refurbishment work would need to staff the most difficult projects with managers of relevant experience.

Educational background of refurbishment managers was the central theme of the following chapter. The main conclusions are as follows:-

(i). The majority of refurbishment managers have had a trades background. The three main trades being joinery, bricklaying and steel fixing.

(ii). Evidence suggests that refurbishment managers are less qualified than their counterparts in construction management. This means that more efforts would have to be made by both organisations and educators in order to improve the level of qualifications of managers involved in refurbishment work. In addition, courses for refurbishment would need to be structured so as to lead to qualifications.

(iii). Refurbishment managers in senior positions have obtained higher qualifications than their junior counterparts. Obtaining higher qualifications (preferably degrees ) are beneficial in attaining higher management positions.

The study progressed to analyze the skills and knowledge needed for refurbishment work, and to devise and appropriate management skills/knowledge for refurbishment. The qualities and attributes associated with successful accomplishment of refurbishment projects were also considered. In addition, the degree of difficulty in handling refurbishment tasks were analyzed.

The main conclusions to be drawn are:-

(i). A skills and knowledge inventory for managing refurbishment work is derived.

The most important skills/knowledge which managers need in their present jobs, for refurbishment, are:-

- \* Leadership
- \* Communication (oral/written)
- \* Motivation of others
- \* Health and safety
- \* Decision making
- \* Forecasting and planning

(ii). Refurbishment management skills and knowledge are, on the whole, homogenous. Evidence suggests that there is similarity in refurbishment tasks across levels of management. Where there is differentiation of skills and knowledge, this arises from management application. There is also similarity in refurbishment tasks across types of refurbishment organisations (specialists and general).

(iii). When the most important skills and knowledge for refurbishment are compared to those in construction management, it was observed that for refurbishment, the skills and knowledge of:-

- \* Forecasting and planning
- \* Managing conflict and crisis
- \* Tenant welfare
- \* Team building
- \* Decision making

are needed, over and above those required for construction management. For individual managers and contractors seeking work in the refurbishment market, these skills and knowledge are vital.

(iv). The personal qualities and attributes associated with successful accomplishment of refurbishment projects are established. The most important qualities and attributes are:

- \* Ability to relate and work with people
- \* Patience
- \* Visionary/forward thinking.
- \* Flexibility/adaptability
- \* Logical thinking
- \* Innovativion/creativity

(v). The degree of difficulty in handling refurbishment tasks is established. The most difficult management tasks to handle are:-

- \* Forecasting and planning
- \* Analysis of project risks/uncertainty
- \* Competitive tendering
- \* Budgetary control
- \* Managing time
- \* Quality control and assurance

This suggests that refurbishment work is risky, and difficult to plan and forecast.

The nature, and extent of management education and training which exist within refurbishment organisations, together with management education and training needs of managers and organisations were the objectives of the following chapter.

The main conclusions to be drawn are:-

(i). There is little, if any, management courses, in-house or external, directly geared towards refurbishment, yet evidence suggests that for both organisations and managers, there is an urgent need for appropriate management education and training for refurbishment.

(ii). Refurbishment managers and their organisations prefer short courses of not more than 2 - 3 days duration.

(iii). Refurbishment managers and their organisations prefer in-house courses to external course. The reasons are primarily to do with cheapness and relevance in meeting organisational needs.

For refurbishment managers, also, courses must be convenient in location and timing. The preference is for courses to be available locally, and nearer the place of work in order to avoid taking managers away from work more than is absolutely necessary. Winter months are preferred to summer months for attending management courses.

(iv). Course contents, and the methods of training delivery are the two most influential factors for course selection.

(v). Management education and training needs for refurbishment, both at managerial and organisational levels are established.

The following are job dimensions for which managers most need education and training in their present jobs.

- \* Forecasting and planning
- \* Analysis of project risk/uncertainty
- \* Use of computer technology
- \* Employee training: supervisor/foreman
- \* Health and safety
- \* Quality control and assurance

The job dimensions currently needed for refurbishment organisations are:-

- \* Health and safety
- \* Programming of works
- \* Public relations/tenant liaison
- \* Managing time
- \* Communication
- \* Security

These important areas of need would have to be accommodated in management education and training programmes geared towards refurbishment.

The penultimate chapter of the study was primarily concerned with devising a framework for management education and training. The main conclusions to be drawn are as follows:-

(i). A framework for educating and training refurbishment managers is set out, incorporating managers' preferences for the methods of education/training delivery. The framework also incorporates the principles associated with how adults learn, and a combination of learning theories.

(ii). A model for postgraduate and continuing education is devised. The model is based on a modular format. The flexibility of a modular scheme, together with wider access and credit accumulation transfer, would allow a manager to study at his/her own pace.

The factors which are likely to shape the future of refurbishment management, and their implications on both management skills & knowledge, and education/training needs, are the main objectives of the final part of the study. The main conclusions are summarised as follows:-

(i). From examining emerging trends, the following factors are likely to shape the future of refurbishment management:-

- \* Increasing competition (especially amongst refurbishment organisations within the UK).
- \* Increasing methods of procuring contracts
- \* Improving technology (information technology, and the use of computers)
- \* Demographic factors

(ii) Regarding the future management skills/knowledge for refurbishment, the following are most important for managers.

- \* Managing people (interpersonal skills)
- \* Health and safety
- \* Quality control
- \* Forecasting and planning
- \* Analysis of project risks/uncertainty

(iii). In terms of future education and training needs, the following job dimensions are vital for managers.

- \* Health and safety
- \* Quality control
- \* Use of computer technology
- \* Interpersonal skills

The acquisition of relevant skills and knowledge for refurbishment would contribute to labour efficiency, and effective management of construction resources. In addition, as effective management permeates the labour market, this may help raise the image of the refurbishment sector.

### **10.3. Recommendations For Further Research**

(i). With the establishment of the major characteristics and difficulties associated with refurbishment work, it was revealed that hospitals, hotels, and MOD buildings are the most difficult refurbishment projects to manage. It is suggested that guidelines advocating 'how best' to overcome refurbishment problems and difficulties, for different types of refurbishment work across the health service, hotels, and defence sectors, be produced.



(ii). Following the derivation of an appropriate body of skills/knowledge for managing refurbishment work, it is suggested that further research be conducted to establish 'core' management skills/knowledge associated with successful management of various types of refurbishment projects, and projects across industrial sectors (especially the health service, hotels and defence sectors).

Similarly, further studies need to be conducted on personal qualities and attributes of refurbishment managers who are associated with successful accomplishment of different types of refurbishment projects. Results from such studies would assist contractors in resourcing refurbishment operations with the 'right' calibre of managers for the 'right' types of projects.

(iii). It was revealed that refurbishment managers at all levels are closer to the work face in comparison with new build work. Research is needed to establish the extent, and the degree of involvement of clients, contractors, and the rest of the design team, especially refurbishment managers, in carrying out refurbishment work.

(iv). Having considered large refurbishment organisations in the present study, research is needed to establish management education and training provisions, and also education and training needs of medium and small size refurbishment organisations. This should allow a comparative analysis to be made across all sizes of refurbishment organisations.

(v). Following the development of a model for postgraduate and continuing education for refurbishment management, it is proposed that research be conducted on 'how best' refurbishment education can be successfully and widely introduced into undergraduate curricular.

## APPENDIX A

## **APPENDIX A**

### **Semi-structured Interview Sheet : Training Officers**

Name of Company:

Company Address:

Name of Training Officer:

Date:

Commencement of Interview (Time):

End of Interview (Time):

Total Interview Time:

### **Section A: Characteristics Of Company/General Information**

1. History of company:      Year of establishment, founder, how long the company has been involved with refurbishment work.
2. Company size:              Number of employees, average annual turnover of company, average annual turnover of refurbishment and other works.
3. Market structure:          Is your company a specialist or general contractor? (Definition of terminology), % of work on Building, Civil engineering, Work on refurbishment (including housing, offices).
4. Ascertain company:        Request for company structure and discuss as appropriate, career structure bearing in mind that Directors/Managers associated with the production function are relevant to the study.
5. Company strategy          The place of management education and training in the overall corporate strategy of the company. Is there any defined education and training policy for management generally, and refurbishment in particular?. If a policy exist for refurbishment, how long has this been in operation.

### **Section B: Management Education And Training: Current Provisions**

1. Expenditure on education and training as a percentage of turnover.
2. Expenditure on education and training per manager (last five years)
3. Average number of days spent per manager per year on education/training (last five years)
4. Education and training expenditure in (£) and as a percentage of:
  - (i). On-the job training
  - (ii). Other In-house education/training provisions
  - (iii). External education/training (last five years).
5. How is education and training needs of managers assessed and evaluated in your company? Is there any systematic evaluation of the cost effectiveness of, and/or benefits flowing from your current education/training activities?
6. Your assessment of the amount and quality of education/training in your company (Excellent, Good, Average, Poor, Very poor).

### **Section C: Management Education And Training (Current And Future Needs)**

1. What management skills and knowledge for refurbishment does your company see as being of most need now, and for the future (next five years)?
2. What changes (if any, within the next five years) does your company intend to make to the provisions of management education and training?

### **Section D: Relevance And Preferences On Education And Training Provisions**

1. What are the most cited management job dimensions (skills/knowledge) for which managers request to attend education/training courses (Differences if any across management levels)?
2. Preferences on education/training methods and delivery [on-the-job, formal & informal in-company training, External courses (including short courses), types of institutions/training providers, CPD., postgraduate programmes].

### **Section E: Factors Affecting The Provisions Of Management Education And Training**

1. What factors (i) promote and (ii) inhibit the provisions of management education and training in your company?.

**Semi-structured Interview Sheet: Refurbishment Managers**

Name of Company:

Company Address:

Name of Manager:

Date:

Commencement of Interview (Time):

End of Interview (Time):

Total Interview Time:

**Section A: Structure Of Organisation \***

1. Ascertain organisation structure: Request for organisation structure and discuss as appropriate bearing in mind that senior, mid-level and junior managers associated with the production function are relevant to the study. Request for organisation career chart.

2. How many managers involved in refurbishment work report to you in your present job ?

3. How many managers do you report to within your present job in your organisation ?

4(i). On average, how many sites do you manage at any one time?

(ii) What is the highest number of sites you have managed at any one time in the last 2 years?

5. How frequently do you visit site and why?.

(a) Very frequent (b) Frequent (c) Less frequent (d) Not frequent

6. In your perception, how frequently does the senior manager visit site and why?

(a) Very frequent (b) Frequent (c) Less frequent (d) Not frequent

### **Section B: Refurbishment Characteristics**

1(i). Rank order (1 - 15) the types of refurbishment works which you perceive to be most difficult to manage. With 1, being the most difficult and 15, the least difficult.

- |   |   |
|---|---|
| <input type="checkbox"/> Offices                | <input type="checkbox"/> Housing                |
| <input type="checkbox"/> Hotels                 | <input type="checkbox"/> Educational buildings  |
| <input type="checkbox"/> Religious buildings    | <input type="checkbox"/> Industrial buildings   |
| <input type="checkbox"/> Listed buildings       | <input type="checkbox"/> Hospitals              |
| <input type="checkbox"/> MOD buildings          | <input type="checkbox"/> Recreational buildings |
| <input type="checkbox"/> Agricultural buildings | <input type="checkbox"/> Airports               |
| <input type="checkbox"/> Banks                  | <input type="checkbox"/> Prisons                |
| <input type="checkbox"/> Shopping centres       |   |

(ii). What are the most difficult characteristics associated with these types of works.

2. Are the difficulties of refurbishment characteristics greater with occupied buildings than with un-occupied buildings?

(a) Yes (b) No. If yes, to what extent is this so ?

3. To what extent does the nature of refurbishment work affect employee stress and why? How do managers cope with it ?

(a) Very difficult (b) Difficult (c) Fairly difficult (d) Not difficult

4. What impact does the nature of refurbishment work have on employee absenteeism?

5(i). Does Building regulations/ other statutory control pose any difficulty for refurbishment? To what extent is this so?

(a) Very difficult (b) Difficult (c) Fairly difficult (d) Not difficult

(ii). How frequent does this occur?

(a) Very frequent (b) Frequent (c) Fairly frequent (d) Not frequent

6. How do managers cope with the supply of plant and machinery for refurbishment work and why ?

(a) Very difficult (b) Difficult (c) Fairly difficult (d) Not difficult

7. In refurbishment work, do you consider plant usage to be restricted? If so, how frequent does this occur ?

(a) Very frequent (b) Frequent (c) Fairly frequent (d) Not frequent

**Section C: Importance Of Management Skills And Knowledge (Present And Future)**

1(i). How important is the task of Recruiting/selecting a supervisor/foreman in your present job ?.

(ii). To what extent are you involved in recruiting/selecting supervisors/foremen ?

2(i). How important is Employee training for supervisor/foreman in your present job?

(ii). To what extent are you involved with the training of supervisors/foremen ?

3. Is the skill and knowledge of site organisation important in your present job and why?

(a) Very important (b) Important (c) Fairly important (d) Not important

4. How important is the skill/knowledge of organisation culture in:

(i) your present job and

(ii) the job you are currently doing, in the future. Why is this so ?

5. How important is the skill/knowledge of Foreign language in: (i) your present and

(ii) the job you are currently doing, for the future and why ?

6. How important is the skill/knowledge of Other national culture in:

(i) your present job and

(ii) the job you are currently doing, for the future and why?

**Section D: Management Education And Training Needs )Present And Future)**

1. What is your degree of need for management training/education for the skills/knowledge of Forecasting & planning in:

(i) your present job and

(ii) the job you are currently doing, for the future and why?

2. What is your degree of need for management training/education for the skill/knowledge of Analysis of project risk and uncertainty in:

(i) your present job and

(ii) the job you are currently doing, for the future and why?

(a) Very much need training (b) Much need training (c) Need training (d) Not need training



3. How do you perceive your degree of need for management training/education in the use of computer technology, in:

- (i) your present job and
- (ii) the job you are currently doing, for the future and why ?

4. Have you in the past two years attended any in-house/external management training/education directly geared towards refurbishment? If so,

- (i) how many courses have you attended and
- (ii) what are the main themes of the courses ?

### **Section E: Miscellaneous**

1. What qualities/attributes would you say a manager needs to possess in order to effectively accomplish a refurbishment project at a given cost time and quality ?

2. In your perception, to what extent does the training/educational background of a manager impact on his/her ability to manage refurbishment work ?

3. Have you had experience of new build? (a) Yes (b) No

4. In your estimation, do you think that refurbishment work is more difficult to manage than new build? (a) Yes (b) No

5. To what extent do you agree with the following statements:

(i) A refurbishment manager finds it relatively easy to manage new build.

(a) Strongly agree (b) Agree (c) Disagree (d) Strongly disagree

(ii) A manager with new build experience finds it relatively difficult to manage refurbishment work.

(a) Strongly agree (b) Agree (c) Disagree (d) Strongly disagree

6. In your perception, How important to managing refurbishment is organisational ethos in terms of interest, sense of belonging and the 'feel' for refurbishment.

(a) Very important (b) Important (c) Fairly important (d) Not important

**Note: Organisation Structure \***

Organisational structure is made up of the reporting relationships and lines of authority and communication between different offices and positions in the organisation. This can vary in formality and degree of centralisation.

1. To what extent is your organisation's structure formally defined?

- a. Very formal structure: All reporting relationships and lines of authority are formally defined.
- b. Formal structure: Most of the reporting relationships and lines of authority are formally defined.
- c. Slight formal structure: Reporting relationships are undefined but are informally understood.
- d. No formal structure: Reporting relationships and lines of authority are not formally defined.

2. To what extent would you say that members of your organisation adhere to formal structure?

- (a) Always                      (b) Frequently                      (c) Seldom                      (d) Never

3. To what extent would you say that your organisation structure is centralised or decentralised

In centralised structure, decisions, authority and flow of communication are directed and referred up the hierarchy.

In decentralised structure, decisions, authority and flow of communication are mostly balanced between upper and lower levels. Upper level (senior) management set guidelines for decisions to be made at lower levels of the organisation.

- (a) Centralised
- (b) Slightly more centralised than decentralised
- (c) Slightly more decentralised than centralised
- (d) Decentralised

**Letter Accompanying Questionnaire**

Department of Civil Engineering & Construction,  
University of Salford,  
Salford,  
M5 4WT

Dear

**Management Education And Training For Refurbishment Work Within The Construction Industry**

The Department of Civil Engineering and Construction is currently conducting a research programme funded by the Science and Engineering Research Council, the subject of which concerns management of refurbishment within the construction industry.

The main research objectives focus on identifying management difficulties, core management skills/knowledge and management education and training needs for refurbishment. It is our view that ascertaining the management skills/knowledge and management education and training needs for refurbishment, from managers who are directly involved with refurbishment, will greatly assist in the provision of the most appropriate and relevant courses for refurbishment and will be of value to the construction industry.

How will you personally benefit from this research? The core management skills/knowledge which are relevant to your job will be established and how best they can be acquired and developed. Obtaining the relevant skills and knowledge for refurbishment should be of value to your day to day job activities as well as to your career development.

However, for such a research programme to be successful, we need your support. Your company approval has already been sought prior to circulation of the questionnaires.

A questionnaire is attached for completion within four weeks of receipt and should be forwarded directly to Mr. Charles O. Egbu at the University of Salford.

Please be assured that both your identity and that of the organisation you work for shall remain strictly confidential.

Your assistance and co-operation in this research programme will be welcome and gratefully received and if you would like a summary of the survey results, free of charge, please indicate on the last page of the questionnaire.

Yours faithfully,

Charles O. Egbu  
Researcher

**Reminder Letters For Completion Of Questionnaire**

Department of Civil Engineering & Construction,  
University of Salford,  
Salford,  
M5 4WT

Dear

**Management Education And Training For Refurbishment Work Within The Construction Industry**

About two weeks ago, we sent you a questionnaire seeking your assistance and asking for information concerning management skills/knowledge and management education and training needs for refurbishment. We regret very much that we have not received your reply.

We are very much aware of how difficult it is for busy managers like yourself to take the time out of your work schedule in order to fill a questionnaire of this nature. However, the information which you can provide is essential for our current research programme.

How will this research benefit you? The core management skills/knowledge which are relevant to your job will be established and how best they can be acquired and developed. Obtaining the relevant skills and knowledge for refurbishment should be of value to your day to day job activities as well as to your career development.

Therefore, may we earnestly request your co-operation and your very valuable assistance in completing and returning the questionnaire. The completed questionnaire should be forwarded directly to Mr. Charles O. Egbu at the University of Salford.

Please be assured that both your identity and that of the organisation you work for shall remain strictly confidential.

Your assistance and co-operation in this research programme will be welcome and gratefully received and if you would like a summary of the survey results, free of charge, please indicate on the last page of the questionnaire.

Yours faithfully,

Charles O. Egbu  
Researcher

Department of Civil Engineering & Construction,  
University of Salford,  
Salford,  
M5 4WT

Dear

**Management Education And Training For Refurbishment Work Within The Construction Industry**

About four weeks ago, we sent you a questionnaire seeking your assistance and asking for information concerning management skills/knowledge and management education and training needs for refurbishment. We regret very much that we have not received your reply.

As you will see, we have enclosed a copy of the original letter sent to you together with a second copy of the questionnaire.

We are very much aware of how difficult it is for busy managers like yourself to take the time out of your work schedule in order to fill a questionnaire of this nature. However, the information which you can provide is essential for our current research programme.

How will this research benefit you? The core management skills/knowledge which are relevant to your job will be established and how best they can be acquired and developed. Obtaining the relevant skills and knowledge for refurbishment should be of value to your day to day job activities as well as to your career development.

Therefore, may we earnestly request your co-operation and your very valuable assistance in completing and returning the questionnaire. The completed questionnaire should be forwarded directly to Mr. Charles O. Egbu at the University of Salford.

Please be assured that both your identity and that of the organisation you work for shall remain strictly confidential.

Your assistance and co-operation in this research programme will be welcome and gratefully received and if you would like a summary of the survey results, free of charge, please indicate on the last page of the questionnaire.

Yours faithfully,

Charles O. Egbu  
Researcher

**Postal Questionnaire**Ref. 

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**SURVEY QUESTIONNAIRE ON MANAGEMENT TRAINING AND EDUCATION NEEDS AND JOB/SKILL PROFILES FOR REFURBISHMENT WITHIN THE CONSTRUCTION INDUSTRY****Return Address**

C.O. Egbu  
 Researcher  
 Department of Civil Engineering and Construction  
 University of Salford  
 Salford M5 4WT  
 Telephone: 061 - 745 5000 Ext: 4465

**Note about the Questionnaire:**

As is the case with many questionnaire surveys, there may be some questions which appear irrelevant or impertinent. However, it is necessary in this study that all questions are answered, as the questionnaire is designed to achieve particular research objectives, and it is hoped not to offend respondents in any way. If there are any questions which you are unwilling or unable to answer, then it is our wish that you continue to answer the remainder of the questionnaire.

**Remember that both your identity and that of the company you work for will remain strictly confidential.**

Refurbishment in this context, refers to all works carried out on existing building, such as modernisation, conversion, renovation, rehabilitation, retrofit and repair. However, this excludes regular maintenance works such as painting, decoration and cleaning.

**SECTION A: GENERAL INFORMATION.** In each of questions 1 - 5, please tick one box only [✓].

1. Is your firm a refurbishment specialist?    ☐ Yes    ☐ No
2. Please state your current job title  
       ☐ Director/Area manager    ☐ Contract/Project manager  
       ☐ Site Agent                    ☐ Other (please specify)
3. How long have you been in your present job?  
☐ Less than 1 year    ☐ 1 - 5 yrs    ☐ 6 - 10 yrs  
☐ 11 - 15 yrs        ☐ 16 - 20 yrs    ☐ More than 20 yrs
4. How long have you worked with the construction industry?  
☐ less than 1 year    ☐ 1 - 5 yrs    ☐ 6 - 10 yrs  
☐ 11 - 15 yrs        ☐ 16 - 20 yrs    ☐ More than 20 yrs
5. How long have you been involved with managing refurbishment work in the construction industry?  
☐ Less than 1 year    ☐ 1 - 5 yrs    ☐ 6 - 10 yrs  
☐ 11 - 15 yrs        ☐ 16 - 20 yrs    ☐ More than 20 yrs

6. Career structure: In the space provided below, please list in chronological order, the positions you have held in the construction industry since you first joined it, and how long you have held the posts for. Eg. Site Foreman (5 yrs.)

- |    |    |    |    |
|----|----|----|----|
| 1. | 2. | 3. | 4. |
| 5. | 6. | 7. | 8. |

7. Please indicate below which of the listed qualifications you have obtained to date:- by entering in the appropriate box, the year of achievement. Also, state in full, your main area of study in the adjoining box (e.g. Building, Civil Engineering, Quantity Surveying).

Qualifications	Year	Main Area of Study
O Levels or equivalent		
A levels or equivalent		
Ordinary National Certificate (ONC)		
Ordinary National Diploma (OND)		
Higher National Diploma (HND)		
Higher National Certificate (HNC)		
City & Guilds		
B. Tech		
First Degree		
Higher Degree (MSc, MA, MBA, PhD)		
Diploma in Management Studies (DMS)		
Membership of Professional Institute (by examination)		
Other(s) please indicate		

8. Please write your year of birth 19 [ \_ \_ ]

9. What is your sex?    ☐ Male    ☐ Female

**SECTION B: CHARACTERISTICS OF REFURBISHMENT MANAGEMENT**

10. The characteristics of refurbishment management are listed below.

In Section 1B: Indicate the degree of difficulty of refurbishment characteristic (please tick ✓ one box only)

In Section 2B: Indicate the frequency of occurrence of the characteristic in carrying out refurbishment (please tick ✓ one box only)

CHARACTERISTICS OF REFURBISHMENT MANAGEMENT	SECTION 1B				SECTION 2B			
	DEGREE OF DIFFICULTY OF REFURBISHMENT CHARACTERISTICS				FREQUENCY OF OCCURRENCE OF REFURBISHMENT CHARACTERISTICS			
	DIFFICULT		VERY NOT		FREQUENT		VERY NOT	
	1	2	3	4	1	2	3	4
Contract documentation/ arrangement								
Cost control								
Coping with employee stress and absenteeism								
Decanting building for commencement of work								
Dust control								
Handling and disposal of hazardous/toxic substances								
Influence of tenants on regular progress of the works								
Maintaining existing services								
Maintaining site safety and welfare standards								
Materials supply								
Materials handling								
Building regulations and other statutory control								
Noise control								
Plant supply								
Restriction in plant usage								
Pricing of the works								
Productivity control and maintenance								
Programming and scheduling of the works								
Liaison with tenant/occupier								
Quality control and assurance								
Restrictions on working hours								
Selection and recruitment of workforce								
Site access								
Site security								
Storage of building materials and plant								
Handling and disposal of site rubbish								
Supervision of the works								
Keep site tidy								
Time prediction for completion of the works								
Long and unsociable working hours								
Variation/change order to the works								
Protecting the general public								
Protecting the works and adjacent buildings								

11. From the list of refurbishment characteristics in question 10 above, please select 3 most difficult characteristics and indicate how you consider them to be best overcome. With rank 1 assigned to the most difficult, rank 2 to the next most difficult, etc.

REFURBISHMENT CHARACTERISTICS

HOW I CONSIDER THE CHARACTERISTICS TO BE BEST OVERCOME

RANK 1. \_\_\_\_\_:

RANK 2. \_\_\_\_\_:

RANK 3. \_\_\_\_\_:





Question 12 (Contd.)

[illegible]

**SECTION D: MANAGEMENT TRAINING AND EDUCATION NEEDS IN REFURBISHMENT**

In questions 13 - 18 below, are lists of factors that you may consider before deciding which course to attend. Please rate your preference to these, by circling (O) the appropriate number. With 1, much preferred factor and 4, not preferred.

	<u>P R E F E R R E D</u>					<u>P R E F E R R E D</u>									
	M	U	C	H	N	O	T		M	U	C	H	N	O	T
<b>13. <u>Duration of Course</u></b>								<b>14. <u>Time of Year</u></b>							
One day	1	2	3	4				Autumn	1	2	3	4			
2 - 3 days	1	2	3	4				Winter	1	2	3	4			
4 - 5 days	1	2	3	4				Spring	1	2	3	4			
1 week	1	2	3	4				Summer	1	2	3	4			
1 - 2 weeks	1	2	3	4											
<b>15. <u>Training Providers</u></b>								<b>16. <u>Type of Course Delivery</u></b>							
University/Polytechnic	1	2	3	4				In-house course	1	2	3	4			
Further education colleges	1	2	3	4				External course	1	2	3	4			
Management consultants	1	2	3	4				<b>17. <u>In-House Training/Education Methods</u></b>							
Professional/Trade associations	1	2	3	4				On-the-job (with guidance)	1	2	3	4			
CITB.	1	2	3	4				On-the-job (without guidance)	1	2	3	4			
<b>18. <u>Place of Training</u></b>								Off-the-job (In-house)	1	2	3	4			
Within the company premises	1	2	3	4											
Within 20 miles travel distance from company	1	2	3	4											
20 - 50 miles from company	1	2	3	4											
More than 50 miles from company	1	2	3	4											

19. Please indicate to what extent you agree or disagree with the following statements, by circling (O) the appropriate number. Management skills and knowledge for refurbishment are best developed through:-

	Strongly Agree	Agree	Disagree	Strongly Disagree
Learning from experience (no guidance)	1	2	3	4
On-the-job training/education (with guidance)	1	2	3	4
In-house courses	1	2	3	4
External courses	1	2	3	4

20. How many management training/education courses have you attended within the last two years. Please tick ✓ one box only.

☐ None
 ☐ 1 - 2
 ☐ 3 - 4
 ☐ 5 - 6
 ☐ More than 6

21. How satisfied are you with both the amount and quality of training/education you have received within the last two years. Please circle (O) the appropriate number.

	Very Satisfied	Satisfied	Fairly Satisfied	Not Satisfied
Amount of training/education	1	2	3	4
Quality of training/education	1	2	3	4





23. Please rate the degree of importance you attach to the factors below, which may influence your course selection. Please circle (O) the appropriate number. With 1, very important and 4, not important.

<u>Factors Influencing Course Selection</u>	I	M	P	O	R	T	A	N	T
	V	E	R	Y	N	O	T		
Course content	1		2		3		4		
Course timing	1		2		3		4		
Cost of attending course	1		2		3		4		
Training provider	1		2		3		4		
Place of education/training	1		2		3		4		
Duration of course	1		2		3		4		
Qualification/expertise of course presenter	1		2		3		4		
Method of delivery of education/training	1		2		3		4		

24. Please rate the degree of importance you attach to the factors below, which may influence your attendance to management training and education courses. Please circle (O) the appropriate number. With 1, very important and 4, not important.

<u>Factors Influencing Course attendance</u>	I	M	P	O	R	T	A	N	T
	V	E	R	Y	N	O	T		
Obtaining qualifications	1		2		3		4		
Obtaining the respect of peers	1		2		3		4		
Promotion/career development	1		2		3		4		
Willingness to learn	1		2		3		4		

25. How likely are you to attend training and education courses for refurbishment management, if suitable and relevant courses are available? Please tick [✓] one box only.

[ ] Most likely                      [ ] Likely                      [ ] Unlikely                      [ ] Most unlikely

If you have any comments concerning the contents of this questionnaire or wish to express an opinion regarding a related topic; then you are welcome to do so in the space provided below.

Thank you very much for taking part in this survey. We anticipate that, with your help, the results will assist greatly in the future provision of the most appropriate courses of management training and education for refurbishment. If you would like a summary of the results, free of charge, please enter your name and contact address below.

Name:

Contact address:

## Respondent's Comments Concerning The Content Of The Questionnaire And Related Topics

### Characteristics And Difficulties Associated With Refurbishment Work

(i). "Coping with the daily changes and their effects on programme and cost are extremely difficult especially in terms of getting extension of time granted by the architect. It would be useful if some kind of method of quantifying effects of change would be drawn up that would be acceptable by the client" - (Site Agent)

(ii). " To work on refurbishment, you have to have special qualities - tight supervision is very important because you are dealing with tenants. Also, you come across a lot of changes, because until you start work, you don't know what to expect, as every job is different. More training is needed for supervision" - (Site Agent).

(iii). "I would say that the most important things to develop are team work and safety, with negotiation rather than confrontation between contractor and client being a prime objective. Refurbishment needs to be flexible because of the restraints imposed by the nature of the industry" - (Site Agent).

(iv). " Time should be spent on site to see the degrees of difficulty encountered" - (Site Agent).

### Education And Training For Refurbishment Management

(i). Refurbishment can only be learnt at source i.e. hands on experience. In the present climate, companies cannot afford to apply this to the site works" - (Site Agent).

(ii). "I feel that a lot of the skills/expertise associated with refurbishment work, especially in connection with tenanted properties need to be gained in on-the-job training. But bearing in mind that on the majority of refurbishment sites, there is only a site manager. It is therefore not really a practical solution. In conclusion, I think that a lot of the skills etc. are learnt through experience 'on site'" (Contracts Manager).

(iii). "I feel that in this uncertain time, where work is rather slack, training should be the utmost priority in preparation for an upturn in the markets" - (Project Manager).

(iv). "Good practical training and skills are also very important and must go hand in hand with management education and training" - (Contracts Manager).

#### Other related Topics

(i). "I would have like to see an item which related the questions to sizes of refurbishment contracts. I am involved with refurbishment contracts ranging from £1,000 to £ 1/2 m, and there is a vast difference in the way we approach the contracts based on value and duration" - (Contracts Manager).

(ii). "If this survey is directed at 'Builders', would it not be beneficial to have the views of consultants and other professionals linked to the industry of refurbishment. Often, conflict is caused by other parties' lack of awareness of provisions encountered on such contracts" - (Contracts Manager).

(iii). " In considering future courses, Mechanical, Public Health & Electrical is a must. Clients are demanding more and more of the building environment. Although on major projects, the builder will employ an M & E co-ordinator, there is still a general lack of knowledge/awareness on the subject (this is reflected in your survey as not one question related to M & E and associated problems was raised). It has been my experience that many of the problems faced by the contractor are M & E generated. General training for managers on the subject could be useful. Also training for the M & E co-ordinator" -( Site Agent).

(iv). "It is my belief that management training within the construction industry in general is sadly lacking" - (Project Manager).

(v). "I personally would like the younger generation in the construction industry to be able to attend any courses available, for the betterment of the industry and the country as a whole" - (Site Agent).

(vi). "Surveys of this type are much needed, provided they are passed on to the people following in our foot prints, so they can gain from our achievements/mistakes" - (Site Agent).

**Letter Accompanying Summary Conclusions And Recommendations**

Department of Civil Engineering & Construction,  
University of Salford,  
Salford,  
M5 4WT.

Dear sir,

**Re: Management Education And Training Needs And Job/Skill Profiles For Refurbishment Within The Construction Industry**

May I seize this opportunity to thank you most sincerely for participating in the research study on refurbishment management. Your assistance and co-operation have been of great value, without which it would have been extremely difficult to undertake this task.

Please find enclosed a copy of the results relating to the summary conclusions that stem from the study. The main text is contained in the Ph.D thesis "Management Education And Training For Refurbishment Work Within The Construction Industry", C.O. Egbu (1994), University of Salford.

I hope you will find these results of interest and value in your career in refurbishment management.

Yours faithfully,

CHARLES O. EGBU,  
RESEARCHER



### Glossary Of Formulae

Chi - square (R x C Tables)

$$X^2 = \sum \frac{(O - E)^2}{E}$$

Chi - square (Multi-dimensional Tables)

$$X^2 = \sum_{i=1}^r \sum_{j=1}^c \sum_{k=1}^1 \frac{(n_{ijk} - E_{ijk})^2}{E_{ijk}}$$

Coefficient of Concordance

$$W = \frac{S}{\frac{1}{12} K^2 (N^3 - N)}$$

df. For Chi-square (R x c Tables)

$$df = (r - 1)(c - 1)$$

df. For Chi-square (Multi-dimensional Tables)

$$df = rcl - r - c - 1 + 2$$

df. For Chi-square (Partial Independent Tables)

$$df = clr - cl - r + 1$$

Expected Frequency

$$\frac{\text{column marginal} \times \text{row marginal}}{N}$$

Kaiser Meyer-Olkin

$$KMO = \frac{\sum_{i \neq j} \sum_{\bar{ij}} r^2}{\sum_{i \neq j} \sum_{\bar{ij}} r^2 + \sum_{i \neq j} \sum_{\bar{ij}} a^2}$$

Mean

$$\mu = \sum \frac{X}{N}$$

Measure Of Sampling Adequacy

$$MSA = \frac{\sum_{j \neq i} \sum_{\bar{ij}} r^2}{\sum_{j \neq i} \sum_{\bar{ij}} r^2 + \sum_{j \neq i} \sum_{\bar{ij}} a^2}$$

$\text{Tau}_c$

$$= \frac{2 \ m \ S}{N^2 \ (m - 1)}$$

Test For  $\text{Tau}_c$  (No Ties)

$$\sigma^2 = \text{Var} S = \frac{1}{18} \ n \ (n - 1) \ (2n + 5)$$

Test For  $\text{Tau}_c$  (With Ties)

$$\sigma^2 = \text{Var} S = \frac{1}{18} \ [n \ (n - 1) \ (2n + 5) - \sum t(t - 1) \ (2t + 5)]$$

Variance

$$X_i = \sum_{k=1}^m 1^2_{ik} + \sigma^2_i$$

## APPENDIX B

## **APPENDIX B**

### **Managers' Perceptions On How Best To Overcome Refurbishment Difficulties**

#### **Noise Control**

- Careful choice of plant/machinery
- Use noise control materials such as mufflers on tools; ear defenders and sound acoustic sheets
- Close liaison with tenants; and working out of hours
- Tight control over labour force

#### **Site Security**

- Employ a security/night watchman
- Maintain perimeter fencing on site
- Train site employees on the importance of site security
- Tight control of labour force; and maintain honest workforce

#### **Storage of Building Materials and Plant**

- Careful scheduling of requirements. Bring in small quantities as and when required

#### **Site Access**

- Close liaison with the police and other authorities; and with adjacent tenants
- Careful scheduling of requirements; and use of correct plant/machinery
- Deliveries to be made outside normal work hours

#### **Time Prediction for Completion of the Work**

- Better investigative work; and site visits prior to commencement of work
- Weekly short term planning with realistic time scales
- Regular progress reports; and meetings with staff
- Tight control and monitoring of the work
- Close liaison between design and construction teams

#### **Handling and Disposal of Hazardous Substances**

- Work strictly under the COSHH regulations
- Selection of a reputable specialist subcontractor

**Keep Site Tidy**

- Provide labour to tidy up site regularly
- Continuous monitoring and supervision of the activities of operatives and subcontractors
- Educate workforce on cleanliness and tidiness

**Maintaining Existing Services**

- Careful selection of Mechanical & Electrical (M&E) contractors
- Close liaison with statutory authorities

**Productivity Control and Maintenance**

- Careful selection and recruitment of skilled workforce
- Efficient bonus systems
- Close supervision of the works
- Regular site meetings with the workforce

**Maintaining Site Safety and Welfare Standards**

- Regular training to all staff and workforce on site safety issues
- Give No. 1 priority to site safety at all times
- One member of the site management team to be in total control of safety issues
- Educate, visit local schools, talk to children and emphasize danger on refurbishment sites
- Thorough supervision of the works, enforcing safety standards

**Decanting Building for Commencement of Work**

- Close liaison with tenants and clients' representatives
- More input from the client. client should initiate any action on decanting tenants
- Provide alternative/temporary accommodation to tenants

**Protecting The General Public**

- Put up clear signs, barriers and notices of dangers, and the nature of the work undertaken
- Maintain good housekeeping
- Keep up-to-date with safety regulations, especially the COSHH regulations
- Make sure the workforce move all hazardous substances to safe positions and make site safe at the end of the working day

### **Programming and Scheduling of the Works**

- Conduct site visits to building site before commencement of the works. this should help clarify certain issues about the site layout
- Close liaison between site management team and the planning department
- constant monitoring of construction programme
- Make realistic allowances of "float" in programmes to cope with numerous hidden variations that inevitably occur
- close liaison between site management team and tenants

### **Quality Control and Assurance**

- Ensure adequate supervision at all stages of the work
- Select suitable workforce and reputable sub-contractors
- Have a "Quality Control Officer" to implement BS 5750 if it exists
- Produce project quality plan and audit
- Educate and train workforce on the importance of quality requirements

### **Contract Documentation and Arrangement**

- Early, and a great deal of involvement of the site management team on contract documentation and arrangement
- More time for preparation of contract documentation
- All parties to work closely together
- More warranties and collateral agreements
- Bills of quantities and specification are rarely good because it cannot cover a whole range of "hidden" works

### **Restriction and Working Hours**

- Careful planning and close liaison with tenants
- Consider weekend working
- Piecemeal working around "siting" occupants
- Consider decanting building and provide temporary accommodation

### **Protecting the works and Adjacent Building**

- Employ good working methods, using quality materials, skilled labour force and suitable plant/machinery
- Use dust and noise control measures

### **Materials Handling**

- Bring materials as and when required to site in order to avoid double handling
- Close liaison with buying department

### **Handling and Disposal of Site Rubbish**

- Use close skips to keep tighter control of wastes
- Constant cleaning of site, including out of hours cleaning
- Close liaison with police and other statutory authorities

### **Long and Unsociable Working Hours**

- Efficient bonus schemes and better pay conditions
- Sharing over-time work and split shift supervision
- Close liaison with tenants

### **Restriction in Plant Usage**

- Use suitable plant/machinery
- Consider increasing labour hours

### **Supervision of the Works**

- Regular site rounds
- Employ skilled trades supervisors
- Careful scheduling of the work packages
- Sub-contractors work must be closely monitored

### **Liaison with Tenants/Occupiers**

- Employ a Tenant Liaison Officer/Public Relations Officer
- Open door policy with genuine commitment
- Hold regular meetings with tenants
- Make allowance with one-to-one counselling with tenants

### **Selection and Recruitment of Workforce**

- Obtain references from previous employers/agencies
- Formal procedures for selection of specialist sub-contractors
- Site management must be involved with the head-office in selection of labour force



**Materials Supply**

- Careful scheduling and control of materials supply in relation to the works
- Close liaison with buying department
- Deal with reputable materials suppliers
- Conduct weekly materials reconciliation exercise; and document all materials receipt sheets

**Coping with employee Stress and Absenteeism**

- Provide an organised counselling system
- Employ efficient bonus schemes
- Shift work to be employed if long working hours are needed

**Building Regulations & Other Statutory Controls**

- Enforce and monitor the COSHH regulations
- Close liaison with statutory authorities

**Plant Supply**

- Deal with reputable plant suppliers
- conduct weekly plant reconciliation exercise; and document all plant/machinery receipt sheets

**Table 1: The Relative Importance Of Management Skills And Knowledge For Refurbishment**

<u>Skills/Knowledge (Job dimensions)</u>	<u>Mean Scores (N=142)</u>	<u>Very Impt. (%)</u>	<u>Imp (%)</u>	<u>Fairly Impt (%)</u>	<u>Not Impt (%)</u>
1. Leadership	1.197	81.0	18.3	0.7	0.0
2. Communication (oral/written)	1.197	82.4	15.5	2.1	0.0
3. Motivation of others	1.218	79.6	19.0	1.4	0.0
4. Health and safety	1.246	78.9	19.0	1.4	0.7
5. Decision making	1.338	71.8	23.9	3.5	0.7
6. Forecasting and planning	1.359	66.9	30.3	2.8	0.0
7. Site organisation	1.394	68.3	25.4	4.9	1.4
8. Budgetary control	1.408	63.4	33.1	2.8	0.7
9. Supervision of others	1.415	63.4	32.4	3.5	0.7
10. Team building	1.423	62.0	33.8	4.2	0.0
11. Quality control and assurance	1.528	58.5	31.7	8.5	1.4
12. Managing time	1.542	54.2	37.3	7.7	0.7
13. Materials planning and control	1.549	57.0	33.1	8.5	1.4
14. Manpower planning and control	1.563	51.4	41.5	6.3	0.7
15. Setting objectives and goals	1.592	52.1	37.3	0.6	0.0
16. Conducting meetings	1.606	43.7	52.1	4.2	0.0
17. Managing conflict/crisis	1.606	50.7	39.4	8.5	1.4
18. Recruit/select: supervisor/foreman	1.627	53.5	31.7	13.4	1.4
19. Delegating responsibilities	1.634	45.8	44.4	9.9	0.0
20. Programme maintenance (update)	1.641	53.5	31.7	12.0	2.8
21. Tenant welfare	1.676	47.2	40.8	9.9	2.1
22. Public relations	1.676	50.0	34.5	13.4	2.1
23. Recruit/select: subcontractors	1.683	50.0	34.5	14.1	1.4
24. Employee training: supervisor/foreman	1.683	44.4	45.1	8.5	2.1
25. Competitive tendering	1.690	52.1	31.0	13.4	3.5
26. Analysis of project risks/uncertainty	1.690	43.0	46.5	9.2	1.4
27. Programme design	1.711	49.3	33.8	12.7	5.6
28. Identifying personal strength/weaknesses	1.725	45.1	40.1	12.0	2.8
29. Employee training: management	1.739	43.7	43.0	9.9	3.5
30. Site security	1.746	43.0	41.5	13.4	2.1
31. Productivity maintenance and control	1.754	43.7	39.4	14.8	2.1
32. Negotiate: client	1.761	47.9	33.8	12.7	5.6
33. Costing and estimating	1.789	47.9	31.7	16.2	4.9
34. Competitor awareness	1.810	47.9	30.3	15.5	6.3
35. Managing change	1.831	35.2	47.9	15.5	1.4
36. Recruit/select: management	1.831	48.6	28.9	14.1	8.5
37. Negotiate: main contractor	1.859	38.7	42.3	13.4	5.6
38. Negotiate: subcontractor	1.894	38.0	40.8	14.8	6.3
39. Organisation of communication systems	1.923	40.1	35.9	16.9	7.0
40. Managing job stress	1.951	33.8	42.3	19.0	4.9
41. Recruit/select: manual labour	1.993	32.4	39.4	22.5	5.6
42. Employee training: manual labour	2.021	29.6	43.0	22.5	4.9
43. Plant planning and control	2.028	31.0	38.7	26.8	3.5
44. Negotiate: supplier	2.077	26.8	45.8	20.4	7.0
45. Creativity	2.077	28.9	39.4	26.8	4.9
46. Career development and appraisal	2.077	33.8	32.4	26.1	7.7
47. Decanting buildings	2.183	23.2	40.8	31.0	4.9
48. Company accounting	2.218	27.5	33.1	29.6	9.9

49. Company (strategic) planning	2.239	28.2	30.3	31.7	9.9
50. Construction law	2.246	23.9	35.9	31.7	8.5
51. Property insurance	2.246	35.9	21.1	25.4	17.6
52. Organisation structure	2.261	24.6	33.1	34.5	7.7
53. Termination/dismissal: subcontractor	2.282	23.2	35.9	30.3	10.6
54. Job analysis/specification	2.303	19.0	40.1	31.7	9.2
55. Code of practice/working rule agreement	2.331	21.8	34.5	31.7	12.0
56. Termination/dismissal: supervisor/foreman	2.352	22.5	34.5	28.2	14.8
57. Contract drafting	2.373	18.3	37.3	33.8	10.6
58. Sources of finance	2.387	26.8	27.5	26.1	19.7
59. Employment legislation	2.415	16.2	34.5	41.5	7.7
60. Client/consumer protection law	2.472	20.4	25.4	40.8	13.4
61. Promotion and transfer	2.472	16.9	27.5	45.8	9.9
62. Employee welfare/counselling	2.479	13.4	36.6	38.7	11.3
63. Negotiate: government bodies	2.507	19.7	29.6	31.0	19.7
64. Advertising and promotion	2.521	19.7	27.5	33.8	18.3
65. Market research	2.521	26.7	18.3	33.1	22.5
66. Termination/dismissal: management	2.542	15.5	32.4	33.8	18.3
67. Negotiate: trade unions	2.577	19.7	23.9	35.2	21.1
68. Termination/dismissal: manual labour	2.592	12.0	32.4	39.4	16.2
69. Company law	2.592	16.2	28.2	35.9	19.7
70. Use of computer technology	2.599	15.5	25.4	43.0	16.2
71. Organisation culture	2.634	15.5	21.8	45.8	16.9
72. Planning law	2.761	13.4	20.4	42.3	23.9
73. Managing other national culture	2.873	12.0	19.7	37.3	31.0
74. Demotion and retirement	3.049	4.2	19.7	42.3	33.8
75. Foreign language	3.507	1.4	9.2	25.4	64.1

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**Table 2: Degree Of Difficulty In Handling Management Job Dimensions (Skills/Knowledge) In Refurbishment**

<u>Job dimensions (Skills/Knowledge)</u>	<u>Mean Scores (N=23)</u>	<u>Very Diff. (%)</u>	<u>Diff (%)</u>	<u>Fairly Diff (%)</u>	<u>Not Diff (%)</u>
1. Forecasting and planning	1.782	40.8	41.5	16.2	1.4
2. Analysis of project risks/uncertainty	1.852	34.5	47.9	15.5	2.1
3. Competitive tendering	1.894	35.2	42.3	20.4	2.1
4. Budgetary control	2.155	23.9	42.3	28.2	5.6
5. Managing time	2.162	27.5	37.3	26.8	8.5
6. Quality control and assurance	2.218	21.1	41.5	31.7	5.6
7. Health and safety	2.232	26.8	32.4	31.7	9.2
8. Site security	2.338	24.6	30.3	31.7	13.4
9. Use of computer technology	2.345	21.1	35.9	30.3	12.7
10. Managing conflict/crisis	2.352	18.3	36.6	36.6	8.5
11. Motivation of others	2.359	16.2	43.0	29.6	11.3
12. Tenant welfare	2.366	16.2	39.4	35.9	8.5
13. Communication (oral/written) .	2.373	16.2	39.4	35.2	9.2
14. Costing and estimating	2.373	17.6	37.3	35.2	9.9
15. Manpower planning and control	2.380	17.6	39.4	30.3	12.7
16. Recruit/select: management	2.401	23.2	30.3	29.6	16.9
17. Recruit/select: subcontractor	2.430	19.0	34.5	31.0	15.5
18. Recruit/select: supervisor/foreman	2.430	19.0	32.4	35.2	13.4
19. Supervision of others	2.444	12.7	42.3	33.1	12.0
20. Employee training;supervisor/foreman	2.444	10.6	43.7	36.6	9.2
21. Materials planning and control	2.444	14.8	38.7	33.8	12.0
22. Programme design	2.451	17.6	33.8	34.5	14.1
23. Negotiate: client	2.458	12.0	41.5	35.2	11.3
24. Employee training; management	2.486	8.5	43.7	38.7	9.2
25. Construction law	2.486	15.5	31.0	43.0	10.6
26. Leadership	2.507	12.7	38.7	33.8	14.8
27. Productivity control and maintenance	2.514	12.0	39.4	33.8	14.8
28. Setting objectives and goals	2.521	14.1	32.4	40.8	12.7
29. Managing change	2.521	12.7	33.1	43.7	10.6
30. managing job stress	2.528	14.8	33.1	36.6	15.5
31. Negotiate: government bodies	2.535	16.9	31.0	33.8	18.3
32. Decanting buildings	2.549	10.6	39.4	34.5	15.5
33. Public relations	2.556	10.6	35.9	40.8	12.7
34. Site organisation	2.563	11.3	37.3	35.2	16.2
35. Programme maintenance (update)	2.563	16.2	30.3	34.5	19.0
36. Company (strategic) planning	2.577	12.0	29.6	47.2	11.3
37. Negotiate: subcontractor	2.596	9.9	35.5	39.7	14.9
38. Job analysis/specification	2.606	10.6	32.4	43.0	14.1
39. Team building	2.606	8.5	33.8	46.5	11.3
40. Competitor awareness	2.627	8.5	38.0	35.9	17.6
41. Employee training: manual labour	2.648	7.0	38.8	46.5	12.7
42. Contract drafting	2.648	10.6	29.6	44.4	15.5
43. Client/consumer protection law	2.655	8.5	31.7	45.8	14.1
44. Recruit/select: manual labour	2.662	13.4	28.2	37.3	21.1
45. Organisation of communication systems	2.669	6.3	35.2	43.7	14.8
46. Company accounting	2.676	7.7	34.5	40.1	17.6
47. Creativity	2.676	9.2	30.3	44.4	16.2
48. Negotiate: main contractor	2.683	7.7	32.4	43.7	16.2

49. Identifying personal strength/weaknesses	2.690	9.2	27.5	48.6	14.8
50. Career development and appraisal	2.704	4.9	35.2	44.4	15.5
51. Termination/dismissal: subcontractor	2.711	14.8	23.2	38.0	23.9
52. Company law	2.718	9.9	32.4	33.8	23.9
53. Decision making	2.732	7.7	30.3	43.0	19.0
54. Termination/dismissal: supervisor/foreman	2.739	13.4	23.9	38.0	24.6
55. Conducting meetings	2.746	3.5	31.0	52.8	12.7
56. Delegating responsibilities	2.775	7.0	26.8	47.9	18.3
57. Organisation structure	2.796	7.7	21.8	53.5	16.9
58. Employment legislation	2.803	6.3	24.6	51.4	17.6
59. Managing other national culture	2.859	7.7	25.4	40.1	26.8
60. Negotiate supplier	2.859	5.6	25.4	46.5	22.5
61. Plant planning and control	2.859	3.5	26.8	50.0	19.7
62. Promotion and transfer	2.859	5.6	20.4	56.3	17.6
63. Sources of finance	2.866	7.0	23.9	44.4	24.6
64. Termination/dismissal: management	2.873	12.7	19.0	36.6	31.7
65. Foreign language	2.894	20.4	14.1	21.1	44.4
66. Planning law	2.915	5.6	22.5	46.5	25.4
67. Negotiate: trade unions	2.951	6.3	19.7	46.5	27.5
68. Organisation culture	2.958	4.2	14.8	62.0	19.0
69. Code of practice/working rule agreement	2.986	3.5	23.2	44.4	28.9
70. Employee welfare/counselling	2.986	4.2	19.0	50.7	26.1
71. Market research	2.993	8.5	19.0	37.3	35.2
72. Property insurance	3.007	6.3	16.9	41.5	35.2
73. Termination/dismissal: Manual labour	3.056	6.3	17.6	45.1	31.0
74. Advertising and promotion	3.063	2.1	20.4	46.5	31.0
75. Demotion and retirement	3.085	5.6	16.2	42.3	35.9

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**Table 3: Job Dimension For Which Senior Managers Need Education And Training In Their Present Jobs**

<b><u>Job Dimensions</u></b>	<b><u>Mean Scores (N=23)</u></b>	<b><u>Need Training (%)</u></b>
Tenant Welfare	2.652	30.4
Company law	2.652	30.4
Company accounting	2.652	26.1
Delegating responsibilities	2.696	26.1
Planning law	2.696	39.1
Negotiate: subcontractor	2.696	30.4
Job analysis/specification	2.696	47.8
Creativity	2.739	34.8
Code of practice/working rule agreement	2.739	34.8
Termination/dismissal: subcontractor	2.739	34.8
Negotiate: government bodies	2.783	17.4
Materials planning and control	2.783	43.5
Programme maintenance (update)	2.783	43.5
Company (strategic) planning	2.783	39.1
Employee welfare/counselling	2.783	39.1
Site security	2.783	30.4
Employee training: manual labour	2.783	43.5
Negotiate: main contractor	2.783	56.5
Negotiate supplier	2.826	26.1
Termination/dismissal: supervisor/foreman	2.826	34.8
Employment legislation	2.870	30.4
Termination/dismissal: management	2.870	26.1
Site organisation	2.870	47.8
Advertising and promotion	2.913	39.1
Recruit/select: manual labour	2.957	26.1

**Table 4: Senior Managers' Perceptions On The Job Dimension For Which They Do Not Need Education And Training In Their Present Jobs**

<b><u>Job Dimensions</u></b>	<b><u>Mean Scores (N=23)</u></b>	<b><u>Need Training (%)</u></b>
Organisation culture	3.348	52.2
Promotion and transfer	3.304	47.8
Decanting building	3.261	43.5
Demotion and retirement	3.261	47.8
Foreign language	3.261	56.5
Property insurance	3.217	39.1
Sources of finance	3.174	39.1
Managing other national culture	3.130	43.5
Organisation structure	3.087	34.8
Plant planning and control	3.087	39.1
Termination/dismissal: manual	3.087	43.5
Negotiate: trade unions	3.087	47.8
Competitor awareness	3.043	39.1
Market research	3.000	34.8
Client/consumer protection law	3.000	34.8

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**Table 5: Job Dimension For Which Middle Managers Need Education And Training In Their Present Jobs**

<u>Job Dimensions</u>	<u>Mean Scores (N=59)</u>	<u>Need Training (%)</u>
Client/consumer protection law	2.441	28.8
Decision making	2.441	37.2
Job analysis/specification	2.458	33.9
Company (strategic) planning	2.458	32.2
Identifying personal strength/weaknesses	2.475	37.3
Conducting meetings	2.508	25.4
Company law	2.508	37.3
Site organisation	2.525	32.2
Negotiate: government bodies	2.542	32.2
Contract drafting	2.542	42.4
Recruit/select manual labour	2.542	42.4
Company accounting	2.542	40.7
Delegating responsibilities	2.559	37.3
Negotiate: subcontractor	2.559	30.5
Employment legislation	2.559	42.4
Competitor awareness	2.576	27.1
Promotion and transfer	2.576	35.6
Negotiate: trade unions	2.576	35.6
Negotiate: main contractor	2.593	28.8
Termination/dismissal: subcontractor	2.610	16.9
Termination/dismissal: supervisor/foreman	2.627	28.8
Termination/dismissal manual labour	2.644	44.1
Sources of finance	2.644	40.7
Organisation structure	2.661	40.7
Termination/dismissal: management	2.695	30.5



**Table 6: Middle Managers' Perceptions On The Job Dimension For Which They Do Not Need Education And Training In Their Present Jobs**

<b><u>Job Dimensions</u></b>	<b><u>Mean Scores (N=59)</u></b>	<b><u>Need Training (%)</u></b>
Foreign language	3.186	57.6
Demotion and retirement	3.034	33.9
Managing other national culture	2.949	30.5
Organisation culture	2.881	27.1
Property insurance	2.847	27.1
Site security	2.814	28.8
Plant planning and control	2.780	27.1
Creativity	2.780	23.7
Employee welfare/counselling	2.780	23.7
Advertising and promotion	2.763	30.5
Decanting building	2.763	27.1
Code of practice/working rule agreement	2.763	27.1
Negotiate: supplier	2.746	28.8
Market research	2.746	27.1
Planning law	2.729	20.3

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**Table 7: Job Dimension For Which Junior Managers Need Education And Training In Their Present Jobs**

<b><u>Job Dimensions</u></b>	<b><u>Mean Scores (N=59)</u></b>	<b><u>Need Training (%)</u></b>
Negotiate: client	2.533	25.0
Employee training: management	2.533	31.7
Job analysis/specification	2.533	36.1
Negotiate: supplier	2.550	26.7
Negotiate: government bodies	2.550	30.0
Company law	2.567	25.0
Negotiate: main contractor	2.567	36.7
Contract drafting	2.583	41.7
Company (strategic) planning	2.600	30.0
Negotiate: subcontractor	2.617	35.0
Decision making	2.617	30.0
Site security	2.617	45.0
Career development and appraisal	2.617	40.0
Client/consumer protection law	2.633	43.3
Employment legislation	2.633	43.3
Company accounting	2.650	26.7
Negotiate: trade unions	2.667	35.0
Code of practice/working rule agreement	2.717	36.7
Recruit/select: management	2.717	41.7
Competitor awareness	2.733	38.3
Organisation structure	2.733	48.3
Delegating responsibilities	2.767	36.7
Promotion and transfer	2.767	48.3
Managing other national culture	2.783	31.7
Creativity	2.800	35.0

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**Table 8: Junior Managers' Perceptions On The Job Dimension For Which They Do Not Need Education And Training In Their Present Jobs**

<b><u>Job Dimensions</u></b>	<b><u>Mean Scores (N=60)</u></b>	<b><u>Need Training (%)</u></b>
Demotion and retirement	3.250	48.3
Foreign language	3.150	46.7
Termination/dismissal: management	3.133	41.7
Termination/dismissal: manual labour	3.117	38.3
Termination/dismissal: supervisor/foreman	3.117	38.3
Advertising and promotion	3.067	41.7
Market research	3.050	36.7
Organisation culture	3.000	25.0
Decanting buildings	3.000	26.7
Property insurance	2.983	35.0
Plant planning and control	2.900	30.0
Employee welfare/counselling	2.850	23.3
Termination/dismissal: subcontractor	2.817	30.0
Sources of finance	2.817	30.0
Planning law	2.800	25.0

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