

## **Factors for Implementation of Affordable Housing in Saudi Arabia**

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### **Abstract**

The study on Affordable Housing is unique because the definition and measurement of 'Affordability' is very subjective according to geographic, demographic, cultural and economic differences. Since Saudi Arabia has its own socio-economic peculiarities, it would be imperative to look at the public housing scenario from the consumers' affordability point of view. This research will ascertain the concept and the state of Affordable Housing in different developed and developing countries where affordable housing has been successfully implemented. Based on this research some factors necessary for successful implementation of affordable housing in Saudi Arabia are identified.

### **Keywords**

Affordable Housing, Affordability, Saudi Arabia

## **1. Introduction**

Housing affordability ranks among the most persistent of national issues. It is one of the biggest expenses in the budget of most families and individuals. For this reason and due to government's influence on housing affordability, it has long been prominent on agendas of policy makers at all levels of government.

This study provides a review of the affordable housing initiatives in developed and developing countries. The countries chosen here are U.S.A., U.K. and Australia from the developed and Malaysia, Indian Subcontinent, China and countries from Sub-Saharan African Continent from the developing countries. It was found from literature review that the implementation of Affordable Housing was most successful in these countries. This is the reason that these countries were chosen for the purpose of this study.

### **1.1 Affordability**

The definition, measurement, and interpretation of housing affordability are ultimately subjective. There is no single answer to the question of how much households of different incomes can "afford" to spend on housing. Nonetheless, for purposes of housing program design and implementation, it is necessary to adopt specific definitions that are quantifiable with data available for local areas nationwide.

The definition of affordability generally accepted in the developed world is “housing that can be purchased by families, using 30% of the median income”. ‘Affordability’ must be determined by making comparisons at the local level between the cost of housing and the incomes of households (Chatfield, 2000).

## **2. Affordable Housing in Developed Countries**

### **2.1 Case of United States of America:**

In 1980, the average existing home price was \$ 62,200. Two decades later, the price had risen to \$ 166,100. Considering this and other factors, it is no surprise that a March 2000 report by the U.S. Department of Housing and Urban Development to the U.S. Congress has this key finding: “Despite Continued economic expansion, worst case housing needs have reached an all time high. Households with worse case housing needs are unassisted renters with income below 50% of the local median. These households pay more than half of their income for rent or live in substandard housing.”

In the early 1990s, research focused on housing goals relative to laws and regulations. Rubin, Seneca and Stotsky (1990) discuss the Fair Housing Act that established affordable housing goals in relation to exclusionary zoning in New Jersey. They point out that communities generally seek to minimize the costs of meeting housing objectives while meeting their housing obligations.

Stegman (1995) provides a discussion of urban policy initiatives and global change and the effect on economic and social life. He also discusses the strategies of Clinton Administration to address issues such as homelessness and expansion of affordable housing. Asabere and Huffman (1997) provide empirical analysis showing huge price discounts associated with apartments in non conforming areas. Wallace (1995) examines the gap in affordable housing in the U.S. by focusing on issues such as the forms of financial support for affordable housing and the roles of profit and non profit organizations. Schwartz (1999) point out the benefits of providing affordable housing by showing that housing development reduces not only vacancy but also violent crimes.

Overall housing policies have encompassed a number of issues:

1. Land use regulation such as zoning
2. the effect of preservation and property rehabilitation laws
3. the role of profit versus non profit organizations in providing affordable housing
4. the changing role of state and local government

Various housing acts in the U.S. have been designed to promote homeownership. For example, the Housing Act of 1949 provided housing for low income families through public housing program and its redevelopment program. National Affordable Act of 1990 outlines the federal housing program requirements.

Bast (2002) extols the low income housing tax credit part of the 1986 Tax Act as being one of the most powerful tools for providing incentives for private industry to work with State and Local governments.

- Community Reinvestment Act of 1977 and Low Income Housing Tax Credit (1986) program are designed to deliver tax credits to selected developers who must contract to maintain a low to moderate income occupancy of dwellings built, for a period of thirty years (Lea, 1996).

### **2.2 Case of United Kingdom:**

In Britain the post world war-II period saw a great shortage in affordable housing. By 1961 this shortage was fulfilled but again in late 1970s and 1980s there was a large deficit in supply of housing. London was faced with huge problem of homelessness. This resulted in the construction of housing by non profit organizations with subsidies from the central government.

Building societies with a cooperative kind of outlook helped investors build houses on mortgage loans; the surplus supply from the societies was later to be sold to home-seekers. The main lessons to be learned from these implementations is the effectiveness of the private housing industry in providing low income (affordable) housing without massive government funding (Harloe, 1990).

Currently, local planning authorities are responsible for setting out their land use planning policies, to aid affordable housing provision sustainability. The policy has seen a shift towards landowners and developers for affordable housing provision from the traditional policy of burdening tenants and taxpayers.

Historically, affordable housing in U.K. has been directly provided by the state, financed by the central government and managed by the local councils. A survey in 1999 conducted to examine investment in private rental housing suggested that institutional investors are still questioning the government to provide them with reasons for investing. The survey also revealed that between 1994 and 1999, investor's interest in residential property had risen significantly accompanied by greater market activity (Berry, 2002)

### **2.3 Case of Australia:**

Even from a restrained perspective, the facts that emerge are disturbing. They show that since 1986 the number of low-income urban households in dwelling stress across Australia has grown from 90,000 to over one quarter of a million households. This covers only the major capital cities; the number is higher when regional figures are included. The overall picture of the private rental sector is one of a disparate and fragmented 'cottage industry', with low barriers to entry and frequent movement of both investors and dwellings into and out of the sector, around a more stable core with longer-term views. In addition, the virtual absence of rent controls has encouraged small investors to lock their savings into these properties, secure in the knowledge that future contingencies and cost increases can be met by raising the rent to what the market will bear. In practice, this has meant that landlords have been able to regain possession of their dwellings at the end of short leases to sell re-let, redevelop or use them.

This predominantly 'petty landlord' character of the Australian private rental housing sector is underscored by the virtual absence of large corporate investors, especially the major financial institutions. With the exception of a few one-off schemes, large investors have continued to shun investment in low-cost housing. These investors have shied away from this type of investment on account that it typically provides lower returns, higher property risks and low liquidity. Poor detailed market information and the dearth of examples of successful investments only add to the drawbacks and fuel's the lack of interest in the sector.

Rent Assistance is defined as a non-taxable cash payment to Commonwealth clients who rent accommodation in the private rental market. The payment is available to all pensioners, beneficiaries and family payment recipients who pay rent above minimum threshold levels. This assistance is provided at the rate of 75c per dollar of rent paid above these thresholds up to specific maximum rates of assistance. Both the rent thresholds and the maximum rates of assistance are indexed twice yearly and vary with both family type and the presence and number of children.

The Commonwealth-State Housing Agreement is the other key mechanism through which federal and state governments provide housing assistance through funding public housing. This provision by State Housing

Authorities has been central to this agreement, which has evolved from one renewal and extension to the next.

Recent Commonwealth State Housing Agreements have supported a number of housing assistance activities including:

1. Capital grants to State Housing Authorities to provide public housing and community housing organizations to provide social housing
2. Funding for crisis accommodation
3. Grants or loans to private renters to assist them defray initial set up costs, and
4. Subsidized home lending products aimed at those with particular needs. In the past many States have accessed private funds either directly or through their central borrowing authorities to debt finance their home ownership programs

Under the First Home Owner Grant scheme, Australian citizens or permanent residents who are buying or building their first home in Australia are entitled to a one-off \$7,000 payment. The first home must be intended as a principal place of residence and occupied within a reasonable period. The extended First Home Owner Grant provides for an additional \$7,000 grant, in addition to the existing \$7,000 grant, for the construction or purchase of eligible new homes where a contract is made (or in the case of owner-builders where construction starts). This means that during the prescribed period, eligible first home buyers, buying or building new homes receive \$14,000 assistance, regardless of their income level, and regardless of the area in which they are planning to buy or the value of their first home.

### **3. Affordable Housing in Developing Countries**

#### **3.1 Case of Malaysia**

With a population growth between 2.2% and 2.3% per annum, there is a clear impact on the demand for housing in Malaysia especially by the low income group. The situation became more critical in urban areas where there was tremendous rate of urbanization in major towns from 13.8% in 1970 to 60% in the year 2000. This situation has worsened with an influx of migration from rural areas and foreign workers.

The action on housing implementation can be associated with the proclamation of a home-owning democracy by the second Prime Minister in 1968 and it became an important landmark for the housing program in Malaysia. It established the goal of providing low cost houses based on basic needs. This commitment became the task of the government to ensure that all Malaysians, especially the low-income group in both urban and rural areas, benefited from the infrastructure and were able to own a house.

The construction of low-cost housing in Malaysia is conducted by the public and private sectors. It has been the goal of the public and private sector to provide the physical development with an intention of promoting unity and harmony for social development. In the 4<sup>th</sup> Malaysia Plan, the policy on housing is extended to the construction of flats and apartment with condominium concept in order to optimized the utilization of land especially in urban areas.

The Government housing programs are not solely concentrated in urban areas. In rural areas the Traditional Village Regrouping Program and the Village Rehabilitation Program were introduced with the intention of improving the quality of life of the rural community. Under these programs the areas which are prone to natural disaster such as flood or coastal erosion were regrouped into socio-economic clusters.

The house price became an endless issue and outcry of the developer where the ceiling price of R.M. 25,000 is considered as static and the minimum built-up area of 450 square feet (41 sq. m) has not been changed since the beginning of the program.

The government has given options for the low-income group to own a house through various incentives such as lowering the interest rate from six per cent to four per cent per annum and lowering the age of eligibility for the loan. It has increased the allocations for housing development and also introduced an employee provident fund scheme where a withdrawal from these funds helps to settle the down payment and part of the loan.

### **3.2 Case of Indian Subcontinent**

The urban challenge, facing countries of the sub-continent, including Bangladesh, India and Pakistan is immense. The UN projects that, large cities like Jakarta in Indonesia will absorb 5 million or more additional residents, in the next 15 years. The challenges faced by these countries are obvious.

In Pakistan, after independence, there was no institutionalized housing policy. A number of agencies were involved in the effort to improve housing stock, but most of their efforts were focused on slum-clearance and resettlement of households. A national housing policy evolved in the form of a set of objectives and recommendations regarding low income housing. The policy statements were not implemented as the actual actors were the local bodies with limited resources. This resulted in 25 percent of the urban population in the high and middle income groups receiving about 64 percent resources available for housing and services.

The policies in the 1970s and 80s aided the better off classes of the society; low income housing was almost entirely at the mercy of illegal commercial sector and few NGO's (Linden, 1990).

South Asian Association for Regional Co-operation's (SAARC) housing indicators range from 5 years annual household income required to own a medium house in Dhaka to 10.6 in Katmandu, 12.0 in Delhi, 13.4 in Mumbai, 16.0 in Lahore and as high as 36.0 in Colombo. Some of the contributory factors for housing non-affordability are too many regulations, antiquated legal provisions and planning norms, lack of low cost land, easily accessible credit, appropriate technology, access to materials and access to information. Some innovations include integrated development of housing and income generating programs, levels of income and people's participatory approach (Lall, 2001).

These innovative government and non-governmental approaches to overcome the larger crises have not been scaled up to provide technical and financial assistance to the informal sector (Hasan, 2001). Thus their effectiveness on a large scale may require tremendous effort from both the government and the non-government players.

Formal construction in the cities of developing countries principally serves moderate to upper income groups, leaving lower income populations to address their housing needs through informal means. Widespread unauthorized housing disregards building regulations and may not come with legal titles. Some of those dwellings are built by the prospective occupants, some by formal sector developers and the rest by 'slum-lords' for rent to low income people. Often these units are of poor quality and located in hazardous areas off-limits to legal housing.

### **3.3 Case of China**

Unlike the previous examples from south Asia, the modern Chinese history (post 1949) has been dominated by the socialist system. This system assumes housing to be social welfare and income subsidy, so housing is supplied by the state. The percentage of income spend on housing by the Chinese is very low. Most of the urban population lives in public housing provided by the state apart from the very poor and socio-politically segregated who live in squatter- settlements (Chu, 1990).

The Chinese government's Open Door Policy, in its quest of modernization, was aimed to commercialize the Housing Reform Policy, decrease housing subsidies and stimulate China's construction industry. The goals were to establish an equitable and efficient system to solve the housing shortage and convert the heavily subsidized house building industry into a self financing business.

The process of making housing a commodity from a state subsidiary has lately been accompanied by a policy of housing subsidy reduction and increasing rents in the state owned housing. Over the years, the housing reforms have been slowly implemented, but low wages and lack of aid in the form of bank loans or mortgages have hampered the successful implementation of the commercialization scheme.

The Chinese government through divestment of public and private enterprises encouraged home owning among employees. These efforts were bolstered by measures to promote the supply of affordable housing through private builders and encouraging people to buy homes by provisions of housing mortgages. Additional measures included increases in rents to encourage people to move away from public housing and even guarantees to developers to buy any leftover units (Rosen, 2000).

### **3.4 Case of Africa**

All of the countries in Sub-Saharan Africa (SSA) face formidable housing problems. Almost without exception they have poorly developed housing institutions and markets, stock which are in poor condition, a huge backlog of housing need and weak policy responses.

Policies for the provision of housing also need to be seen within the context of urbanization and the nature of urban development. The level of urbanization in SSA is modest by global standards, but because of this limited urban base, African cities are experiencing some of the fastest rates of urbanization in the world (UNCHS, 1996a). The development of African cities is also distinctive. The striking feature of most African cities is the extent of informal development. In many cities the informal sector predominates, (UNCHS, 1996a). Renaud (1999) attributes this form of development to "incremental forms of housing investment where owners become 'self-developers' and rely on small crafts and trades to build their own units." He also adds that this is why many such cities have the appearance of "endless, almost permanent, construction sites". The implications of these circumstances are that it is not only the poor who are unable to access housing of reasonable quality, but also the average income group faces the same situation.

One of the principal difficulties associated with the provision of housing is the problem of ensuring land supply. Traditional or 'customary' land ownership in many African countries is held on a tribal basis. Under these circumstances, decisions about the use of land are made according to the customs of the tribe. The concept of any kind of Legal Ownership' may be entirely alien.

The principal outcome of these constraints on the operation of the land market is that access to formal land ownership in many African cities is restricted to all but a minority of affluent and influential people.

Current policy thinking by the United Nations Human Settlements Program has resulted in a commitment through its Millennium Declaration to improve the lives of 100 million slum dwellers by 2020. This is to be achieved through a global initiative entitled 'Cities without Slums' and accompanied by a campaign

advocating action plans to ensure the extension, where possible, of security of tenure to the inhabitants of such areas, (Erguden,2002).

#### **4. Case of Saudi Arabia**

Since 1970s till date the Saudi government through the Ministry of Housing, Public Works and Planning, and Real Estate Development Fund – REDF has made a significant contribution to fulfilling housing demands (Hassan, 2001). Three parties participate in the housing development process- Government, private sector and citizens.

Through the Free Land Plots project and the REDF, Easy term and interest free loans were given to Saudi Citizens. Concurrently, loans were given to Saudi Investors to build housing compounds with no less than six units (MOMRA, 2003)

The General Housing Department established in 1971 under the Ministry of Finance and National Economy, which later developed to become Ministry of Housing and Public Works, implemented public housing programs. The Ministry undertook the program of designing and constructing low income houses, selecting recipients of houses, collecting payments of interest free loans repayable over a 25 year period and maintenance of public spaces and services of the projects.

Housing projects by private companies and government ministries played an important role in Saudi Arabia. In 1953, ARAMCO introduced a new Home Ownership Program for its employees. Company developed building plots on land provided by the government for free distribution to employees. Similarly they launched a Housing Loan Plan to assist its Saudi employees in securing funds to build or purchase family housing in their local communities. ARAMCO also established a Guarantee Rental Plan, to encourage local contractors to build housing for sale to its employees. The company guaranteed to pay the rent for a five year period on any property the contractor failed to sell.

Saudi Real Estate Company is joint stock Company established by the Government with a capital of SR 600 Million. The company has built many housing complexes which have been sold to Saudi Citizens. They have contributed significantly to the housing stock.

#### **5. Conclusions**

The main factors that would affect the successful implementation of Affordable Housing in Saudi Arabia are:

**Finance:** Housing Finance is the most difficult obstacle facing most households desirous of owning house. This is primarily because of high capital investment needed, which is exorbitant compared to the household's average monthly income. There is a necessity for average household to borrow the investment for the house and repay it in installments over a long period.

**Land Supply:** The main players that influence supply of land for affordable housing include private and public landowners, Deed registry offices, real estate firms, Ministry of Municipal and Rural Affairs (MOMRA), Legal courts etc. MOMRA tries to influence landowners to utilize plots that are within the serviced neighborhoods by declaring an urban growth boundary for settlements.

**Labor:** Most of the skilled labor and almost all unskilled labor are foreign. This reflects the participation of the local manpower in the Construction Industry. There is almost no regulation of workforce and work; foreign standards are adopted in essential cases, this point to lack of Saudi Standards. Municipalities

perform a limited role in the local construction scenario, in issuing permits and regulating measures such as material storage and in certain places implementing bylaws such as exterior finishes.

**Building Materials:** Numerous issues and players are related to quality control, building materials manufacturing sector, material retailers. The extent of making material affordable and easily available has to be explored as this is an important area.

**Services:** Municipalities manage Services to housing units such as paved roads, street lightning etc. Fresh water and sewage system are managed by the Ministry of Agriculture, electric power by SCECO etc. Measures such as recycling of water need to be adopted to make services more affordable.

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## **The New Scottish Parliament Building – A Critical Examination Of The Lessons To Be Learned**

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### Abstract

The design and construction of the new Scottish Parliament building, which was initiated in 1997, has been an immense challenge aiming to create a *landmark building that would identify that particular moment in Scotland's history*. It was finally opened for business in September 2004 with a reported final cost of £431 million (Euro 647million.)

The aim of this research is to critically analyse the project management of the Scottish Parliament building using the 22 hypotheses identified in Morris & Hough's book *The Anatomy of Major Projects* as a template. The hypotheses will be tested using the extensive published material including *The Spencely Report*, two major reports from the *Auditor General* and the Lord Fraser's judicial review *The Holyrood Inquiry*, in order that lessons can be learned and best practice identified and disseminated.

The research has established that the Scottish Parliament building project could not be considered a success when tested against the Morris and Hough 22 hypotheses; however it is a high-quality iconic building that may well stand the test of time.

### **Keywords:**

Scottish Parliament building, project management

### **1. Introduction**

The project management of large, complex projects is often poorly understood and inadequately executed, yet often of great importance to society. The Scottish Parliament Holyrood project was an extremely difficult and complex building project designed to accommodate 129 MSPs together with 1000 civil servants, The finished project comprised ten buildings varying between one and six storeys in height, eight are new and two are historic; seven are curvilinear in plan and three are rectilinear, and they are all packed tightly together on a 4.5 acre (1.8 hectare) site.

The Parliament building was designed by a Barcelona/Edinburgh joint venture of EMBT/RMJM with lead designer Enric Miralles, cost consultants Davis Langdon & Everest (DLE) and construction manager Bovis Lend Lease (Scotland) Ltd. The project was bedeviled throughout by uncertainty on the client's requirements, over-optimistic cost estimates and completion date.

The project has generated a vast amount of information, not normally freely available to the public. In April 2000, an independent review for the client (*the Spencely Report*) identified that the costs would be significantly greater than originally envisaged. Two further detailed reports on the management of the project were compiled by the Auditor General (September 2000 and June 2004). In September 2004 Lord Fraser produced his judicial review *The Holyrood Inquiry* into the project which included a dedicated website containing actual project documents.

## **2. Research Methodology**

The aim of this research is to critically analyse the project management of the Scottish parliament building using the 22 hypotheses identified in Morris & Hough's book *The Anatomy of Major Projects: A Study of Reality in Project Management (1987)* as a template. These hypotheses will be tested based on a thorough review of the relevant published material, references will also be made to recommendations on the management of other major construction projects in order that lessons can be learned and best practice identified.

### **2.1 Project Definition**

#### ***2.1.1 The limits of a project's viability should be evaluated on an objective basis in the light of the participants' own objectives, strategies and resources***

In what was a difficult day of evidence for her, Mrs. Doig (Project Sponsor) admitted that she had been "naïve" in failing to realize that MSPs might want to have an input into the design process (MacDonell, 2004).

#### ***2.1.2 Unclear objectives increase the likelihood of an unsatisfactory project***

In May 1999, the Scottish Parliament – the authority that would eventually occupy the building - came into being. The parliament appointed a new body – the Scottish Parliament Corporate Body (SPCB), to act as client. The SPCB then proceeded to tear up the brief. The body quickly realized the specification was inadequate, and that Miralles designs would have to be drastically modified. "When the client changed, people began to think about how to actually run a parliament, and the brief grew and grew" (Mack, Operations Director, Bovis Lend Lease (within Fairs, 2001).

The number of staff requiring accommodation rose from 400 to over 1000; extra facilities were demanded, including state-of the art broadcast suites for television companies, in all the changes meant that the size of the scheme trebled to 33,000 m<sup>2</sup>. The extra accommodation had to be squeezed into a tight 4.5 acre site.

#### ***2.1.3 Changes in commercial, technical, cost and schedule specifications may lead to cost overruns and are often associated with problems of project management or performance***

The primary cause of the 20 months delay to the project since September 2000 was the issue of detailed design variations and late information during construction. The Corporate Body has estimated there have been some 10,000 proposed change orders issued over the course of the project (Auditor General, 2004).

### **2.2 Technical Factors**

### **2.2.1 *The amount of technical uncertainty or innovation required increases the chances of difficulties and overruns***

In some cases complex architectural requirements involved previously untested building solutions. The different components of the Holyrood building include many novel and complex features (Auditor General, 2004). Not until it was too late to change was there any appreciation of the *complexity of the Architect's evolving design* and its inevitable cost (Fraser, 2004).

### **2.2.2 *Problems in co-ordinating project interfaces can create technical difficulties***

At Holyrood, the construction manager has placed a high degree of effort on managing the common boundaries between contracts. Nevertheless the difficulties were made worse by tight tolerances and multiple complex interfaces between packages (Auditor General, 2004).

### **2.2.3 *Design management difficulties can cause considerable problems later in a project***

Design team management is a critical function in a large building project. The architect is responsible for leading the design team but project management and the Progress Group have been dissatisfied with the architect's performance in this respect. At times leadership of the design has not been clear or there has been conflict about the design (Auditor General, 2004).

The two practices (EMBT and RMJM) had very different cultures and ways of working and found it difficult to adopt a cohesive approach to design issues whilst working in separate locations (Fraser, 2004).

## **2.3 Finance and Commercial Considerations**

### **2.3.1 *The amount of finance required may cause difficulties in both initiating a project and keeping it on schedule, particularly if there is subsequent cost-growth***

It was clear from the evidence that a conscious decision had been taken by civil servants that the majority of risk items identified by DLE could be "managed out" and that it was not in the circumstances necessary or appropriate for Ministers to be informed. (Fraser, 2004)

### **2.3.2 *The financial risk posed and the difficulty of forecasting final costs, the business case, fiscal changes and exchange rate changes are clear indicators of potential future problems***

For this project, design development became a process of costing a developing design rather than developing the design within the cost limit. Moreover the risk evaluation did not attempt to evaluate the monetary value attached to the risks to the time schedule. If it had it would have added further risk cost. (Auditor General, 2004)

## **2.4 Schedule Makers**

### **2.4.1 *Schedule length should be chosen so as to minimize risks of adverse political, financial and commercial changes; schedules should be phased to allow for strategic review points***

There was a considerable uncertainty about the programme throughout the project. Targets for packages were put in place but not achieved. Mitigation measures and new targets were introduced in an effort to maintain overall completion but they also failed in many cases. (Auditor General, 2004). Gateway strategic review points are included in the new procurement model. (Achieving Excellence in Construction, 2003).

### **2.4.2 *Urgent schedules create increased management pressures and can lead to problems***

It ought to have been more completely understood by the client that high quality design work takes time, and that the programme itself was unrealistic given the complexities of the design. Bovis too should have understood that (Fraser, 2004).

## **2.5 Managerial and Organizational Factors**

### ***2.5.1 Inadequate planning will greatly increase the likelihood of project failure***

By September 2002 or April 2003 (when respectively programmes 6 and 7 had been issued), the construction manager should have recognized its targets were unlikely to be achieved (Auditor General, 2004).

### ***2.5.2 Legal agreements, contract strategy and terms and conditions fundamentally influence project structure and the roles project participants can adopt***

In my opinion project management could have taken more action at an earlier stage to control expenditure on consultants. In all projects, care should be taken to put in place a payment regime that provides incentives to contractors to perform against clear targets for quality, time and cost (Auditor General, 2004).

The selection of construction management was the single factor to which most of the misfortunes that have befallen the project can be attributed. Against that background I am highly critical of the failure of Mr Armstrong (Project Manager) and Mrs Doig (Project Sponsor) to ensure that there was an appropriate evaluation of the highly risky contract strategy that was adopted, particularly in view of the choice of Architect. (Fraser, 2004) (HM Treasury Guidance No 36, 1992 contained detailed advice on selecting a procurement route) For an example of a successful CM case study see Bayfield & Roberts (2004).

### ***2.5.3 Organization structure should “fit” the project and the participants and should be dynamic, changing as the needs of the project change***

The construction manager’s report shows that fundamental management and organization issues were continuing to have a significant impact on the project four years after work had commenced. It was prepared just six months from the then forecast completion date of June 2003 (Auditor General, 2004).

### ***2.5.4 The absence of effective project controls can seriously increase the chances of overruns and poor project performance***

For the Holyrood project the system for authorizing changes was reasonable but it provided a system primarily for monitoring not actively managing and restraining costs. In general terms, for effective control and management a cost manager/cost controller must anticipate and flag up potential change at the earliest opportunity and design team and contractor must provide alternative solutions to give the client a real choice. It seems for this project, design development became a process of costing a developing design rather than developing the design within a cost (Auditor General, 2004).

### ***2.5.5 Leadership has a strong influence on the conduct of a project and hence on its chances of success***

The organization of the Holyrood project should have had a single point of leadership and control where decisions could be taken about how to balance time, cost and quality as part of the client decision-making process. Leadership and control of the project was not clearly established (Auditor General, 2004).

### ***2.5.6 Human relations factors and teamwork are particularly important on projects and strongly influence project management success***

In April 2001 the Progress Group informed the Corporate Body’s Accountable Officer of its mounting concerns about the effectiveness both of the design team and of project management in working together to deliver on budget and programme and respecting the client’s requirements (Auditor General, 2004).

### ***2.5.7 If internal and external communications are poor, the chances of project success are reduced***

The evidence does suggest that levels of communication among key players were extremely poor on occasions, of which the Foyer roof is a prime example. While my primary criticism is of the Architect, DLE might also have taken a more proactive role in identifying that designs were being developed outwith the cost plan and drawing that to the attention of the client (Fraser, 2004).

**2.5.8 Human error or incompetence, incapacity of incapability can jeopardize project success**

There was a failure by Project Management to finalise Mr. Curran’s draft project execution plan which was a significant shortcoming. I recommend that no one is put in charge of any public project without a demonstrable appreciation of what is required under EU procurement rules. Even without the benefit of hindsight it should have been seen that any sponsor appointed should have had greater familiarity than Mrs Doig with either construction or the sponsorship of major projects (Fraser, 2004).

**3. CONCLUSIONS**

Using the Morris and Hough 22 hypotheses as a template against which the Holyrood Project can be tested has proved a sound approach. Eighteen hypotheses have proved highly significant, whilst four (mixed funding, geophysical challenges, external factors and labour relations) were relevant but not critical to the success of this project.

Based on the literature search one new major hypothesis has been formulated: **“Requirement for identification of the roles and responsibilities of the parties”**

In January 2003 the construction project private and confidential report to Project Management suggested clarification of design team members roles and responsibilities. But although there were significant changes in the project organization since October 2000 the plan has never been updated nor issued beyond a draft document, illustrating the unclear definition of roles. At Holyrood the CM has not taken responsibility for cost management and reporting and control, apparently because it could not agree the cost plan without qualification in November 2000. The cost consultant has therefore retained responsibility for cost advice throughout the project but responsibility for cost control is not clear. Nor has the CM assumed the usual integrated responsibility for cost and programme management (Auditor General, 2004).

The U.K. Government now recommend that clients should follow procurement methods which provide an integrated supply team not separate agreements with individual consultants, contractors and specialist suppliers. (Achieving Excellence in Construction, 2003)

Priority	Intended	Actual
TIME	First priority	Failed – significant slippage
COST	Fixed budget	Failed – significant increase
QUALITY	High quality required	Achieved

Auditor General’s 2004 Report

The Auditor General’s 2004 Report clearly identified the intended and actual achievement of priorities for the Holyrood project. However, history tells us that regardless of cost and time, the building will stand or fall on its quality.

**4. References**

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