AN ASSESSMENT OF THE ORGANIZATION STRUCTURE AND LEADERSHIP EFFECTS ON CONSTRUCTION PROJECTS' PERFORMANCE IN KENYA: A CASE STUDY OF PUBLIC BUILDING PROJECTS WITHIN NAIROBI REGION

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REG. NO. B/50/8585/2004

A RESEARCH PROJECT SUBMITTED AS PART FULFILMENT FOR THE DEGREE OF MASTER OF ARTS (CONSTRUCTION MANAGEMENT) AT THE DEPARTMENT OF REAL ESTATE AND CONSTRUCTION MANAGEMENT, UNIVERSITY OF NAIROBI

JUNE 2012

DECLARATION

DECLARATION BY CANDIDATE

I certify that this Research Project is my original work and has not been presented for a degree in any other University.

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ACKNOWLEDGEMENTS

The success of this study was due to the co-operation and efforts of various people. My sincere gratitude goes to the teaching staff at the Department of Real Estate and Construction Management, University of Nairobi. I am particularly indebted to my supervisor, Dr. S. M. Masu of University Nairobi for his relentless scholarly advice, guidance and encouragement. He was always available whenever I needed him.

My appreciation also goes to the Ministry of Public Works for the permission and moral support that made this study possible. My sincere thank go to the Principal and Management of the Kenya Institute of Highways and Building Technology where I was a Deputy Principal/Senior Principal Lecturer upto December 2009, for sponsoring the entire course.

I would also like to thank Joseph Mwomo for his guidance in the compilation of this report and my wife Alice and four children for their moral support throughout the masters study.

Finally, I thank all those whose names have not appeared but helped me during this study. To all of you I call for God's glory and support in all that you do in life.

DEDICATION

This Research Project is dedicated to all the stakeholders in Construction Industry in Kenya, in particular to staff in the Ministry of Public Works Headquarters, Nairobi and to my children Ivor, Sharron, Lynn and John Junior.

ABSTRACT

Kenya as a country has witnessed substantial increase in the number of stalled projects due to inappropriate project organisation structures and ineffective leadership. There is evidence that the performance of the construction in Kenya is poor as time and cost performance of projects are to the extent that over 70% of the projects initiated are likely to escalate in time with a magnitude of over 50% and over 50% of the projects likely to escalate in cost with a magnitude of over 20%.

The study relied on organization theory and attempts to explain how the organizations are actually structured and offers suggestions on how they can be constructed to improve their effectiveness in terms of project management systems and effective leadership.

The conceptual framework was composed of all the factors which influenced the performance of public building projects as illustrated in Figure 2.7.

The Ministry of Public Works has been used as a case study. The study adopted descriptive survey techniques to examine the performance of the public building construction in Kenya with particular focus on the project management organization structures, project management functions, effect of leadership in terms of competency characteristics, behavioural styles and emotional stability, culture of the organization and its influence on the internal and external environment. The study covered projects within Nairobi Region with contract figures of Kshs. 100,000,000 and above, completed or being implemented between the years 2000 and 2010. In addition the study assessed the risks inherent on construction projects in Kenya and their impact on projects' performance.

Both primary and secondary data were sought and analyzed in an attempt to predict the cause of poor performance in the building sub-sector. The study was based on the Null Hypothesis (Ho) that 'inappropriate project organisation structures and ineffective leadership are the root causes of poor project performance'.

From the study, the performance rate in terms of completion time stands at 11.1% over the period 2000 – 2010. The results show that lack of appropriate project organization structures, poor management systems and leadership are the major causes of poor project performance. The current project organization for public projects is outdated and not in line with the best practices worldwide.

The project leaders are endowed with technical skill but lack the other basic project management skills of dealing with the human, culture and environmental sides of the project. The leadership style in MoPW is quite authoritarian as 48.39% of the respondents report that team members are closely supervised through formalized bureaucratic structures

The researcher recommends the establishment of appropriate project organization structures and formulation of policy within the MoPW for the appointment of competent and visionary project leaders and re-training of public building project leaders on leadership skills and risk management to improve on timely service delivery.

From the findings, it can be concluded that there is need to overhaul the incumbent project organisation structure for public projects and the management systems and also train the professionals on leadership skills to enhance the performance of the construction industry.

GLOSSARY OF ACRONYMS

1. BOOM	-	Buildings Organization and Operations Manual
2. BORAQs	-	Board of Registration of Architects and Quantity Surveyors
3. BQ	-	Bill of Quantities
4. CA	-	Chief Architect
5. CCTV	-	Closed Circuit Television
6. CE & ME (BS)	-	Chief Electrical and Mechanical Engineer (Building Services)
7. CE(S)	-	Chief Engineer (Structural)
8. CFO	-	Chief Finance Officer
9. CQS	-	Chief Quantity Surveyor
10. D/KBRC	-	Director, Kenya Building Research Centre
11. DR	-	Departmental Representative
12. EIA	-	Environmental Impact Assessment
13. ERB	-	Engineers' Registration Board
14. FIDIC	-	Federation of Civil Engineering Contractors
15. GDP	-	Gross Domestic Product
16. GNP	-	Gross National Product
17. H/PC	-	Head, Public Communications
18. ICT	-	Information Communication Technology
19. IEK	-	Institution of Engineers of Kenya
20. IPPD	-	Integrated Personnel and Pay Data
21. JBC	-	Joint Building Council
22. JCT	-	Joint Contracts Tribunal
23. KeBS	-	Kenya Bureau of Standards
24. KRA	-	Kenya Revenue Authority

25. MoPW	-	Ministry of Public Works
26. MSPS	-	Ministry of State for Public Service
27. MTEF	-	Medium Term Expenditure Framework
28. NEMA	-	National Environment Management Authority
29. NHIF	-	National Hospital Insurance Fund
30. PAC	-	Principal Accounts Controller
31. PM	-	Project Manager
32. PPOA	-	Public Procurement Oversight Authority
33. QS	-	Quantity Surveyor
34. SDS	-	Senior Deputy Secretary
35. SPSS	-	Statistical Packages for Social Scientists
36. TOR	-	Terms of Reference

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Despite the importance of the construction industry to the Kenyan economy, Mbatha (1986) reports that there have been complaints about government projects and that the fact that some of the complaining parties are part of the government shows that something must have particularly gone very wrong with the performance of the public building projects. This made the performance of public building projects to be put to question as alluded by the then Minister in the Office of the President on 6th February 1985 who suggested that government officers who delay implementation of the development projects should be sacked (*Ibid*, 1986). The situation has not changed; notwithstanding the importance of the construction industry nationally as construction projects in Kenya have continued to perform poorly in terms of time schedules and cost as exemplified in Table 1.1.

The main indicators in building and construction sector show that the sectors activities remained depressed in 1997 (Republic of Kenya, 1998). The unsatisfactory performance was partly attributed to the slow down in public sector construction activities as a result of government's financial austerity measures and cuts in donor funds (*Ibid*, 1998).

According to Expenditure Review, Republic of Kenya (2003, 2004) the number of stalled government projects was 164 in 1999 and that number skyrocketed to 207 by the year 2003 representing 26.22%, all having pending bill of over Kshs. 15.675 billion (Kshs. 13.227 billion for completion, Kshs. 2.448 billion for termination). Seboru (2006) established that project delays are generally caused by poor financial management by clients amongst others.

The most affected sector within the industry is the Ministry of Roads and Public Works which in 2005 required Kshs. 11 billion to complete 206 stalled roads project according to East Africa Standard of Thursday, May 5 2005. According to Republic of Kenya (2003) draft Public Expenditure Review published by the Ministry of Planning and National Development, Roads and Public Works tops the list of Ministries that have the highest number of stalled projects (Republic of Kenya, 2003). Hence one of the poorest performing sectors within the economy of Kenya despite its importance to the national economy.

TABLE 1.1 – Examples of Underperforming Projects 2

Name of Project / Job No.	Contract sum	Final / Projected Cost	Date for possession	Completion Date	Actual/ anticipated completion	Initial contract period	Final contract period	Time overrun/ delay	Cost overrun
1. Proposed completion of KJBT Headquarters	629,909,101.00	629,909,101.00	12/2/2009	28/6/2011	28/6/2011	120 weeks	120 weeks	-	-
2. Westpark Housing Project – 7278C (Phase I)	1,371,664,442.90	-	1/10/2009	30/9/2011	30/9/2011	104 weeks	104 weeks	-	-
3. Proposed Construction of Kabete Police Lines	60,411,242.00	53,905,974.66	17/8/2006	19/2/2007	-	24 weeks	24 weeks	-	6,935,821.11
4. Proposed completion of Mitihani House Phase III-7275D	342,713,943.00	376,475,420.89	26/6/2006	20/6/2008	30/9/2009	104 weeks	142 wks	38 wks	33,761,477.80
5. Completion of Mtihani House Ph. V – 7256 E	865,582,801.00	-	21/10/2008	21/4/2011	-	130 weeks	-	-	-
6. Ongata Rongai Police Lines – 7493 A	107,210,502.00	105,214,115.05	21/5/2004	11/11/2004	30/6/2005	8 weeks	39 wks	31 wks	1,996,387.00
7. Office partitioning at NHIF Building 51/B/05-06	70,862,970.00	76,333,819.52	06/04/2006	27/07/2006	05/07/2009	158 wks	-	-	5,470,849.52
8. Police Lines at Dandora – 8003A	60,000,000.00	50,785,629.52	22/8/2006	13/2/2007	11/12/2008	24 weeks	88 wks	64 wks	(9,214,370.48)
9. Police Lines at Kamukunji – 027BA	93,361,825.00	127,047,815.42	17/8/2006	20/3/2007	8/3/2009	28 weeks	130 wks	102 weeks	On going
10. Central Police Lines –0034B	91,441,195.00	153,558,220.72	28/8/2006	12/3/2007	29/9/2009	24 weeks	146 wks	122 wks	62,117,025.70
11. Proposed completion of radiation testing labs for KEBS Phase II	46,206,458.00	41,643,609.64	9/5/2007	9/11/2007	31/1/08	12 weeks	24 wks	12 wks	4,562,848.36

Name of Project / Job No.	Contract sum	Final / Projected Cost	Date for possession	Completion Date	Actual/ anticipated completion	Initial contract period	Final contract period	Time overrun/ delay	Cost overrun
12. Re-roofing and refurbishment of 54No. Blocks type 'E'	152,399,814.00	152,399,814.00	3/3/2009	2/2/2010	2/2/2010	45 weeks	45 wks	-	-
13. Proposed construction of 1 No. hostel Block at KIA-0274AF	82,731,720.00	80,437,636.40	15/6/2004	15/6/2005	15/6/2005	52 weeks	52 wks	-	-
14. Proposed Tuition Block at KIA – Lower Kabete 0274DK	209,497,019.76	196,245,913.00	29/6/2009	30/6/2010	26/11/2010	52 weeks	64 wks	12 wks	-
15. Proposed completion of Administration Block at KIA – Kabete-0274BK	97,656,640.00	116,148,471.27	17/2/2007	12/05/2008	12/11/2008	64 weeks	85 wks	-	-
16. Partitioning of offices for OAFLA at NHIF Building-7920A	558,390.75	558,390.75	19/01/2005	12/4/2005	12/4/2005	13 weeks	13 wks	-	-
17. Kapsabet police Divisional Headquarters-6707A	45,012,564.00	103,505,492.00	13/04/1987	24/02/1990	02/02/1996	200 weeks	368 wks	168 weeks	58,492,928.00

Source: Compiled by Researcher from MoPW Contracts Registry, 2010

The stalled projects witnessed in late 1990s and thereafter testifies to the poor performance of the construction industry. According to Republic of Kenya (2008) the factors responsible for the poor performance of the infrastructure sector include inadequate resource allocation for construction maintenance and rehabilitation of facilities, poor contractual work, rapid urbanization, high population growth and adverse weather conditions.

Table 1.1 shows the real situation and therefore calls for a paradigm shift in project leadership styles and approaches to planning and management of public resources in the industry if performance must be improved.

The Economic Recovery for Wealth and Employment Creation (Republic of Kenya, 2003) which was the blue print for national development agenda from 2003-07, emphasized on the construction of stalled building projects and other new core projects in wealth creation.

The Kenya Vision 2030 identifies construction of the infrastructure (roads, power, dams, buildings, health centres, schools, etc) as the major enablers to the realization of the objectives of the vision. The three pillars of the vision 2030 namely the Economic, the Social and the Political pillars are anchored on the improvement of the infrastructure nationally and within the adjoining countries of the Great Lakes Region. The unsuccessful completion of these building projects in time and within budget is a major draw back to the realization of the project mission and the Kenyan Vision 2030. These means that public building projects must be well-managed and funded for each to realize its objectives (Republic of Kenya, 2007).

The mandate of the ministry as contained in the Presidential Circular No. 1 of May 2008 includes Public Works Policy, Public Works Planning, Development and Maintenance of Public Buildings, Provision of Mechanical and Electrical Building Services, Registration of Architects and Quantity Surveyors, Registration and Regulation of Contractors, Consultants for buildings and civil works and materials suppliers, Registration and Regulation of Civil, Building and Electro-mechanical Contractors, Other Public Works (Jetties, Seawalls, Footbridges and Sewer Works) (Republic of Kenya, 2008).

Based on the above mandate the mission of the ministry is established as '*to facilitate the provision construction and maintenance of quality building and other public works for social-economic development*' (Republic of Kenya, 2002). The Ministry is therefore responsible for policy direction and implementation of all public buildings projects and other public works. Failure of a building project to meet its objective namely completion within

schedule, cost and specification and to customers satisfaction is either a failure on the ministry's technical officers and/or financier/Client ministry or the contractor.

The only studies available are by Mbatha (1986), Talukhaba (1988, 1999), Abwünza (2001), Masu (2006) and Seboru (2006) which deal mainly with aspects of the construction performance with regard to cost, time and resource mix practice but leaves out or does not go into details on organisation culture and effect of leadership on project performance.

This study therefore assessed the performance of the building construction industry projects in terms of contribution of projects leadership and organisational culture together with an overview of the funding of the public building projects.

1.2 Problem Statement

Over the last decade public construction worldwide has suffered a major setback in the performance particularly in public building industry. Kenya as a country has been one of the most affected with substantially increasing number of stalled projects due to ineffective leadership, inadequate fiscal planning and control with regard to project funding in the development budget (Republic of Kenya, 2003). The same was corroborated by Republic of Kenya, (2008) that poor performance in public building construction industry is blamed on inadequate and ineffective management, poor leadership in planning and implementation and unstructured public funding procedures.

Despite the presence of trained and experienced personnel, public building projects in Kenya have failed to meet set criteria for success and effective completion of projects within time and budget. According to Republic of Kenya (2004) by 1999 the government had a total of 164 stalled projects with an estimated original contract cost of Kshs. 31,357 million accrued expenditures of Kshs. 13,319 million and an estimated completion cost of Kshs. 13,227 million for those that could be completed and Kshs. 2,448 million for those that required termination. By 2003, the stalled projects were estimated to have increased to 207 (*Ibid*, 2004).

The situation seemed to have remained same over the last two decades as Mbatha (1986) reports that there is evidence that the performance of the construction in Kenya is poor as time and cost performance of projects are to the extent that over 70% of the projects initiated are likely to escalate in time with a magnitude of over 50%. The findings by Talukhaba (1999) and Seboru (2006) concurred that time and cost overruns in public projects

are usual phenomena that can not be ignored. These findings complement the actual list presented in Table 1.1.

Poor performance necessitated the Government of Kenya's initiative to review all stalled projects with a view to completing only those that have potential for meeting Economic Recovery for Wealth and Employment Creation core objectives (Republic of Kenya 2003). Unstructured donor related funding issues especially withholding funds also affected the sector further.

Performance is characterized by effectiveness and efficiency of services offered. Project performance concerns with the extent to which the project implementation is proceeding according to plan, specification, time and budget. Whereas project effectiveness describes the extent which the project has achieved its objectives and any external conditions attached to it, efficiency refers to how economical the results or effect is achieved.

Masu (2006) reckons that the works of Mbatha (1986), Kivaa (2000), Mbeche, *et al* (1996) and Talukhaha (1999) avoided the issue of resource management which includes the optimal utilization of labour, plant and managerial resources in construction projects which directly affects the performance of a project and yet these are very crucial to the success of any project, both in terms of timely completion and completion within budget as the researches have only dealt on cost and time overruns, and the estimation of construction periods. Masu (2006) in his study also did not touch on the importance of leadership and organisation structure as contributors to high output.

This study focused on public building projects implemented in Nairobi Region between 2000 to 2010 as these were still fresh in the minds of the actors/shareholders such as the MoPW employees and consultants, and whose records were easily available. It hence examined performance in public building sub-sector with a focus on the organisation structure and design, project management systems and risks in the industry, existing project management systems and imperative leadership skills within the industry.

1.3 Study Objectives

(i). To examine the organisation structures for public building projects

(ii). To identify management functions in public building projects.

(iii). To examine the effect of leadership in building project performance.

(iv). To find out risks that hinder the performance in the public building sub-sector projects.

1.4 Significance of the Study

The outcome of the study will help in the establishment of appropriate project organization in with the Ministry line with best practices and the setting of management operating systems for the design for and implementation of projects with a view to improve management functions and effectiveness besides setting criteria for the appointment of competent project managers.

The result on the performance of the projects (on-going or previously completed) will be used as feedback to the government policy makers on the appropriateness of the current planning for development projects and capacity enhancement in the construction sector. Likewise, the outcome will help the Government to review the current Contract Documents for building projects and procurement procedures in line with changes in the technology and the Kenya Constitution, 2010. The study further provides a base for improving the knowledge of the practising managers and upcoming young project leaders.

1.5 Hypotheses

Null Hypothesis (Ho): Inappropriate project organisation structures and ineffective leadership are the root causes of poor project performance

Alternative Hypothesis (Ha): Inappropriate project organisation structure and ineffective leadership are not the root causes of poor project performance.

1.6 Assumption of the Study

The study is based on the assumption that there were no major shifts in Government policies regarding funding of development projects during the implementation period and that there were uninterrupted donor support on projects and programmes under study where such funds were part of the development resources. It was further assumed that funds for the Ministry of Public Works and other client ministries projects followed the Medium Term Expenditure Framework – a three year rolling plan. Similarly, the study problem was formulated on the grounds that funding for the public building sub-sector is mainly by the Exchequer and in two or four instalments through the Client Ministry/Procuring entity. Finally the researcher assumed that all the senior technical officers of the Ministry from Job Groups "P" to "T" as well as senior consultants with over 12 years post – registration experience have clear

knowledge of the Vision and Mission statement of the Ministry.

1.7 Scope of the Study

The study is particularly concerned with the evaluation of performance of public building projects over the last ten (10) years i.e. from 2000-2010. The study examines building projects with contract sum of above KSh 100,000,000 administered from the Headquarters directly by Ministry of Public Works managers or indirectly through appointed consultants. The study looks at projects implemented within Nairobi Region and focuses mainly on leadership and funding practices within the public building projects.

1.8 Limitations of the Study

In executing this study, the researcher foresaw the difficulty of accessing all the respondents involved in the actual implementation of the projects since some of the personnel had already been transferred to other parts of the country or retired from the service. The researcher in this case made extra efforts through telephones and in some cases posted questionnaire followed by personal visits to the respondents' locations to extract more information from them. In situations where the respondents could not have exact memory in terms of figures, the researcher carried in-depth study of the existing project documents and proceeded to interview team members to access relevant information. The researcher further used research assistants to get information from key informants outside the study area.

Similarly due to large population of the projects and stakeholders involved in the study, the researcher sampled out representative sample units as prescribed by Mugenda and Mugenda (1999) and carried in-depth study to make generalization of the results possible.

At the same time, owing to conservativeness of some construction firms, consulting firms and government departments or agencies, some projects heads were unwilling to allow accessibility to some vital information on their performance and policy guidelines. In situations where such happen to be, the researcher conducted interviews and probed the respondents to extract information. The researcher further

employed participants' observation technique to acquire more information.

1.9 Operational Definitions

In this study the terms used do not possess any kind of universal meaning as their connotations may be completely different in another research study or dictionary definition. In this study the following terms and expressions were used.

(i) **Artefacts** – refers to the visible organisation structure and processes such as language, environment, rituals, ceremonies, myths and stories (Barbara, 2010)

(ii) **Claims** – are defined as the amounts over and above what a contractor is contracted to do, or entitled to under the usual condition of contract.

(iii) **Communication plan** – is amplified in a communication schedules which outlines, normally, in tabular form the communication events, the objective, purpose, methodology and frequency.

(iv) **Communication plan** – This is a vital project document that describes the information required to be disseminated to all the project stakeholders to keep them regularly informed about the progress of the project.

(v) **Communication Schedule** is a framework or document that outlines, normally, in tabular form the communication events, the objective and purpose, methodology and frequency of activities and process in a project.

(vi) **Constitution** – means the Constitution of Kenya as promulgated in August 2010.

(vii) **Contract sum/Contract price** – This is the agreed cost for which the project is to be executed, ceteris paribus.

(viii) **Engineer** – is taken as the engineer with the official status in the Government (Chief Engineer – Roads) or private enterprise as a consulting Engineer who is considered well qualified to advise on a particular project. In the case of Public Project, the Chief Engineer normally appoints one of the engineers in the ranks of Senior Superintendent or a consulting engineer with over 15 years. He/she must be a registered engineer.

(ix) **Form of Contract** – is a standard document which spells to the parties the conditions and warranties and the way the contract is supposed to be administered. Examples of forms of contract in use in the public service are: FIDIC (for international contracts and roads), JBC (for private sector) and Treasury (for all other public works).

(x) **General Building Works** – All frameworks, walling, roofing, components, finishing, and painting works

(xi) **Key-Informant-Interview** – These are interviews administered to people who are particularly knowledgeable about certain matters relating to the study under review such as practicing Architects, Quantity Surveyors etc. The key informants provide a link to the critical issues of the project which otherwise would not have been available in normal interviews (Nuguti, 2009)

(xii) **Ministry** – means Ministry of Public Works

(xiii) **Practical completion** – As defined in Clause 41.0 of the JBC Form of contract for private works or Clause 31 of the PPOA document for public projects.

(xiv) **Project** – is a non–routine undertaking with a definite time, budget and specification. It consists of a series of non-routine activities to be undertaken in the fulfilment of the goals of an organization.

(xv) **Project Manager** – is a person appointed by the Client as his/her representative who acts as a surrogate client. He/she ensures that all the needs of the client are satisfied and to act as the contact point between Client and the project or program team.

(xvi) **Project plan** – Is a document that outlines all the activities to be undertaken and the responsible persons from initiation to phase out stages. It is a "living document" and is therefore subject to changes (Office of the Government Commerce, UK 2007).

(xvii) **Project Sponsor** – is the principal 'owner' of the project

(xviii) **Public Projects** – are projects done for and on behalf a government department/ agency or institution includes ministries, universities, schools, roads, etc where in most cases the funds are from The Exchequer/Treasury or donor/development partnership with the Government.

(xix) **Resident Engineer** – is the Engineer's representative responsible for supervision and management of all project activities.

(xx) **Risk** – uncertainty of outcome, whether positive opportunity or negative threat, on actions and events. It is the combination of likelihood and impact, including perceived importance.

(xxi) **Risk Management** – all the processes involved in identifying, assessing and judging risks, assigning ownership, taking actions to mitigate or anticipate risks, and monitoring and reviewing progress.

(xxii) **Site Agent** – this is the contractor's site representative who oversees the implementation of the project on behalf of the contractor. His duties include: resource planning, scheduling, receiving and implementing instructions from the engineer and attending meetings.

(xxiii) **Specialist Contractors** – Electrical, Mechanical, CCTV, Lift and Air Conditioning contractors.

(xxiv) **Stakeholders** – is a person or entity outside the project that has a key interest or 'stake' in the project.

1.10 Organization of the study

This study has four chapters following the Introduction. In Chapters Two, relevant literature are reviewed under the following themes: review of related literature, an evaluation of public building construction industry: organisation of public construction projects , public building stakeholders, management practices in public building projects, organisational culture, performance contracts, procurement of consultancy and construction services, the

performance in the building industry, leadership and leadership approaches, public construction funding; risk in public building projects; building in public building sector. Chapter Three discusses methodology in terms of data collection methods, analytical and data presentation techniques. Chapters Four reports the results. Finally, Chapter Five summarizes the study highlighting key findings, conclusions and policy implications. Appendix comes last presenting questionnaires, references and typical letters of commissioning for consultants in the Public Building sub-sector.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Review of Related Literature

Due to the importance of the construction industry to the national economies, several studies have been carried by a number of researchers to explain why public building projects fail to meet the major project objectives namely completion on time or delivery of the final product on time, meeting the specifications (quality criteria), completion within budget, effective and efficient change management during the execution process and further attaining customers' satisfaction as espoused by Kerzner (2001), Kohli (2008) and Austen, *et al* (1984).

Lock (2007) asserts that the primary objective of cost, performance (in terms of specifications) and time are clear benchmarks against which judgement is made on success or failure of a project. The success of the contractor and the project manager and performance is usually judged by how well the primary objectives are met. Technical competence, sound quality culture throughout the organisation, suitable organisation structure, good project communications, well-motivated staff, availability of funds and other related resources are identified by Lock (2007) as the main contributors to project success in the United Kingdom.

Phillips, *et al* (2002) gives thirteen (13) reasons for failed or under-performing projects as lack of clear or common vision of project, conflicting priorities, inadequate resources (time, money, equipment, knowledge/expertise), poor communication, scope change and poor leadership amongst others.

In the construction of the Euro- Tunnel project connecting United Kingdom and France the final cost was £10 million in 1994 when finished compared to the initial cost of £5 million, thus representing a total cost overrun of 100% (Maylor, 1999).

Mbatha (1986) and Talukhaba (1988) both used time and cost achieved at project completion as measures of a project success. Talukhaba (1988) found out that some of the causes of poor project performance are methods of tendering, variations or changes in project scope and delayed payments. It is noteworthy that the poor performance of public buildings is not only peculiar to Kenya. Achenue (2010) in a paper presented in Singapore in October 2010 on public building projects in Nigeria noted that the average increase in the cost of construction over initial contract sum is 72.46%. This compares well with the Kenya's situation according

to Masu (2006) who argues that *"there is evidence that construction performance in Kenya is poor. Time and cost performance of projects in Kenya are poor to the extent that, over 70% of the projects initiated are likely to escalate in time with a magnitude of over 50%. In addition over 50% of the projects are likely to escalate in cost with a magnitude of over 20%."*

According to Chimwaso (2000), the important challenge facing the construction industry in developing countries is the chronic problem of construction cost overruns. He notes that under normal circumstances it is possible for a complete set of drawings and specifications to be made available to the Quantity Surveyor, who would prepare fully described and accurate bills of quantities for contractor to have all the necessary information on which to base the price. However, such a situation is not always the case; therefore the contract sum cannot always be regarded as a firm price. Even in the event where the work is ordered on a "fixed price contract" basis, there will still be re-measurements of provisionally measured items, adjustment of prime cost and provisional sums and variation orders to contend with. This is basically the situation in Kenya where all substructures and majority of superstructures elements are subject to re-measurements.

The variations arising from these unforeseen circumstances are the sure cause for the adjustment of the contract sum. This, therefore, explains why the initial tender price is not what is finally paid by the Client Ministry or Government agency according to Mbatha (1986).

Chimwaso (2000) further argues that the result in poor cost performance of construction projects has left many clients dissatisfied with the services. According to Ashworth (2004) the government is still a major client of the construction industry and that it is tempting to suggest that it uses the industry as an economic regulator. He also submits that while the industry is damaged by the stop-go nature of its activities, there is only scant evidence that government effectively turns the tap on or off in order to regulate economic performance. It may defer or cancel contraction project for other reasons, such as to reduce the public sector borrowing requirement.

According to Kohli, *et al* (2008), few projects in India are completed in time and within budget and that a study of 351 projects costing over Rs 20 crore (≈Kshs 364,000,000) undertaken in 1989 -90 showed that 56% had cost overruns of over 20% of the total cost of projects while 49% had a time overturn of between one (1) and 157 months.

A study by the Ministry of Statistics and Programme Implementation (India) came out with the following as the main reasons for cost and time overrun namely inadequate project formulation, poor planning and management, and inefficient project management during execution (*Ibid*, 2008). This statement compares to some extent with the Kenya situation where factors responsible for the poor performance of the infrastructure sector include inadequate resource allocation for construction maintenance and rehabilitation of facilities, poor contractual work, rapid urbanization, high population growth and adverse weather conditions (Republic of Kenya, 2008).

Mbatha (1986) in his thesis entitled "*Building Contracts Performance: a case study of Government projects in Kenya*" has demonstrated that majority of Government Building Contracts suffer cost and time overruns. He notes that time overruns are more frequent than cost overrun and the two are not related. Big projects have been shown to be more prone to both time and cost overrun than the smaller ones although the delays have been found to bear no relationship to contract sizes. He attributes poor performance to the setting of inadequate of initial contract period which he believed are inconsistently and erroneously calculated by the Ministry's Quantity Surveyors.

Talukhaba (1988) in this thesis "*Time and Cost Performance of Construction Projects*" found out that tendering methods, variations and delayed payments are significant in project performance. He argues that the problem of time and cost overruns in the construction industry is far from complete until all the other factors are considered, to find their influence on the time and cost performance of projects. He listed such factors as weather, geographical differences of site, material market, labour force market, disputes, organizational structure, communication, motivation, national economic performance and government policies as areas needed to be researched on.

Talukhaba (1999) observed that the client's payment and architect's instruction in order of merit are the most significant contributors to delay and hence cost overruns. He recommended that further research be carried out on client project financing to find out how it is done and establish whether it meets the universal project financial theory and the international financial practice criteria.

Seboru (2006) asserts that the real causes of project delays have been observed to be poor financial management by clients, inadequate designs and poor management of the construction process by the parties involved in project implementation. He further clarifies

that the delays are caused by external and internal factors and gives political interference, inflation and interest rates as examples of external factors. Contractors' planning/scheduling is an example of internal factors.

Abwünza (2001), in his research titled *"An Investigation into the Factors Causing Construction Cost Overrun in Kenya"*, concluded that cost overruns are merely a risk rather than uncertainty and identified the factors that caused delay to be within the control of the project team. He singled out the client and agents being the main causes of project delay and lays little blame on contractor.

Walker (2005) as cited by Seboru (2006) studied the contribution of clients' representative to creation and maintenance of good project inter-team relationship in Australia. He concluded that the relationship between the client representative, design team and the team undertaking the construction management activities is a major factor affecting construction time performance.

Walker (2005) and Vines (2005) as cited by Seboru (2006) carried out a study on Australia multi-unit residential project construction time factors. His findings indicate that not only is construction time performance affected by the construction management team's effectiveness in managing the construction process as a major factor but also by other factors such as construction time, design teams management style, intra-team working relationships, the degree of experience and expertise for the same time and size of project, etc.

In all the seven studies on building projects performance by Mbatha (1986), Talukhaba (1988), Talukhaba (1999), Masu (2006), Abwünza (2001), Seboru (2006) and Chimwaso (2010) in-depth attempts have been made in establishing the causes of poor performance of public projects in terms of time, cost and to some extent on quality and customer satisfaction. Masu (2006) went into details on how resource mix affects performance but did not cover leadership and organisational cultures as part of the parameters that determine project performance.

It is on the basis of the above studies and the emerging challenges facing public building sub-sector that the researcher designed this study to evaluate the effect of leadership and project financing on the performance of public building projects.

2.2 Organisation and Management of Public Construction Projects

2.2.1 Organising and Staffing Functions

Daft (1989) as cited by Barbara (2010) defines an organisation as a social entity with a purpose, boundary and able to pattern the activities of participants into a recognisable structure. Even though organisations are real in their consequences or actions, both to the participants and stakeholders and for their environments in which they operate, they are essentially abstractions (Barbara, 2010, Robbins 2004). This is true when one considers the Ministry of Public Works is the Government organization charged with the responsibility for policy direction and implementation of public projects for which they are judged on their performance.

From the systems approach the management functions in any organisation are broadly planning, organising, staffing, leading and controlling of resources and outputs. According to Weihrich (1994) organising as a function of management entails the identification and classification of required activities, the grouping of activities necessary to attain objectives, the assignment of each grouping to a manager with delegated authority and the provision for horizontal and vertical coordination of the various levels in the organisational hierarchy.

For an organization to function the first step is the establishment of departments which designates a distinct area of specialization, division or branch of the organization over which a manager has authority for the performance of specific persons and activities. In the Ministry the six departments exist namely the Architectural, Quantities and Contracts, Structural/Civil engineering, Electrical/ mechanical (BS) engineering, Kenya Building Research Centre and the Administration.

While the purpose of organizing is to make human cooperation effective, the reason for the levels of organization is the limitation of the span of management. In other words organization levels exist because there is a limit to the number of persons a manager can supervise effectively and this limit varies with situations. a wide span of management is associated with few organisational levels and a narrow span with many levels limit in levels of organizational levels. The principal of span of management states that there is a limit to the number of subordinates a manager can effectively supervise, but the exact number will depend on the impact on underlying factors. These include ability to reduce

time spends with the subordinates, personal capacities of the manager such as comprehending quickly, getting along with people, commanding loyalty and respect. It should be borne in mind that the few the levels of control and the shorter the span, the cheaper the organisation's overheads. Departmental levels complicate communications and demands for high integration. An organisation with many levels has greater difficulty in communicating objectives, plans, and policies downwards through the organization structure compared to one with a short span. Furthermore, a big number of departments and levels complicate planning and control.

The staffing function of management refers to the process of filling and maintaining positions in the organization structure. It entails identifying work-force requirements, inventorying the people available, recruiting, selecting, placing, promoting, appraising, planning their careers, compensating and training the job holders to enable them to handle their tasks effectively and efficiently.

As earlier stated formal organisations are open systems and therefore systems approach to managing staffing provides the processes of filling the vacancies. The approach states that the demand for managers are compared with available talent through the management inventory. On the basis of systems analysis, external and internal sources are utilised in the process of recruitment, selection, placement, promotion and separation. Other essential aspects of staffing are appraisal, carrier strategy, training and development of managers. This means that during staffing the internal factors such as human resource policies, the organisational climate and the reward system must be taken together with the external factors into consideration.

Weihrich (1994) argues that staffing affects leading and controlling and exemplifies by stating that well-trained managers create an environment in which people, working together in groups can achieve the enterprise objectives and therefore staffing facilitates leading. Additionally selecting quality managers affects controlling by preventing many undesirable deviation from plans.

2.2.2 The Role of Organisational Structure

Organization structures are social systems and according to Barbara (2010) such systems group people in different ways with the aim of getting work done. Public organisations or institutions such as the MoPW therefore needs ways of dividing work up and allocation to its employees to enable it to achieve the set goals and objectives and finally the mission.

According to Robbins (2004) organisations create structures to facilitate the co-ordination of activities and to control the action of their members and that every structure is made up of three components namely *complexity*, *formalization* and *centralization*. Complexity of an organisation refers to the degree to which activities within the organization are differentiated or broken up, formalization refers to the degree to which the rules and procedures are utilized and centralization looks at where decision-making lies. Further, Robbins (1990) explains that organization structure is set up to define how tasks are allocated, who reports to whom, the formal co-ordinating mechanisms and the interaction patterns that are followed within an organisation as a system. This means that if the organisation structure is poorly designed then the goals and objectives of the organisation are most likely not to be achieved.

The basic elements of any formal or informal structure are therefore the allocation of responsibility, the group of activities to be executed by the workers and the coordination and control of the activities (Barbara, 2010).

In the Ministry two types of structure exist namely the parent organisation and the project organisation as depicted in Figure 2.2 and Figure 2.3.

The parent organisation design (Figure 2.2) shows that decision-making is highly centralised and that problems are expected to flow upwards and the senior managers (HODs) decide on the appropriate action in the form of directive. Authority is dispersed downwards in a hierarchical order. However, some authority is delegated to field officers such as County Works Officers but accountability resting with the Chief executive (Permanent Secretary) or the Head of Departments.

An appropriately designed organisation structure for a project will provide the framework within which the factors that influence the effectiveness of the project management process have the best chance of maximum performance in the interest of achieving client's objectives. Any organisation which is inappropriately designed will not perform sufficiently as the employees or team members have the ability to construct informal organisation structures that

circumvent the formal structure which may be to the benefit or disadvantage of the organisation. According to Walker (2007) the ideal case is when the organization is sufficiently well designed that it does not generate an informal structure. The key organizational variables that make its design mandatory are the purpose or goals, the people who make up the organisation, the tasks required to achieve the organisation goals, the technology, the culture represented by the dominant values within the organisation and the external environment.

2.2.3 Models of Organisational Structures

Several models of organization structure exist but broadly these can be grouped as bureaucratic, functional, line and matrix structures. A blend or hybrid of any of the above type of structures also exists in some construction project.

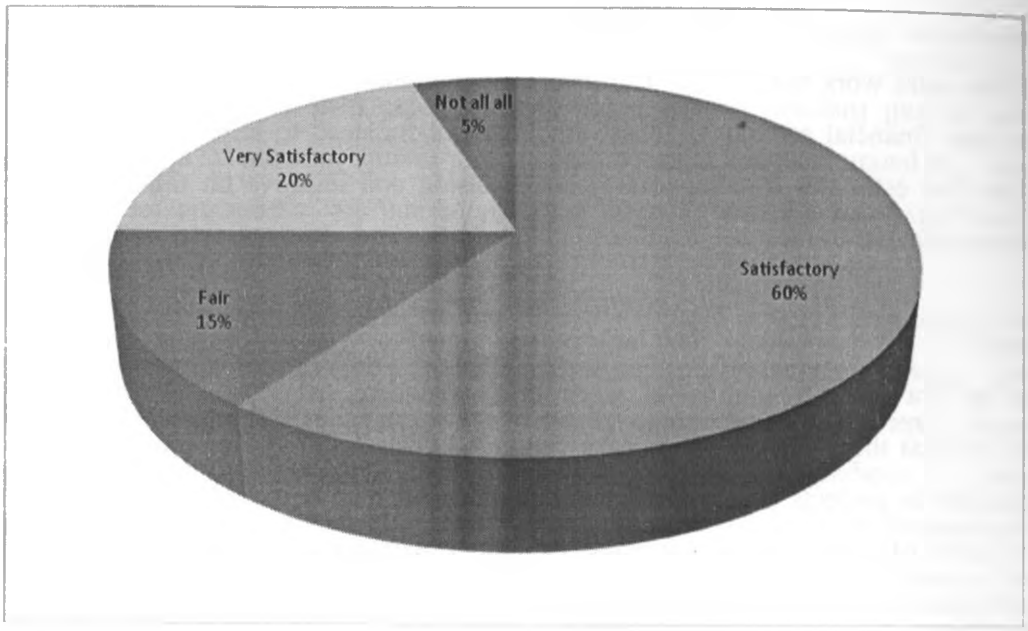
Bureaucratic Structure

This kind of structure is indebted to the German Sociology Max Weber and embraces three ideas namely the idea of rational legal authority, the idea of office and the idea of impersonal order (Barbara, 2010). The ideas postulated above are based on a continuous organization of official functions abound by rules, a specific sphere of competence namely differentiation by functions and the organization of offices or positions that display the principle of hierarchy amongst others.

According to Weber as cited in Barbara (2010), Robbins (2004) and Koonzt (1995) an ideal bureaucratic system is characterized by specialization and division of labour, hierarchical arrangements of positions, a system of impersonal rules, impersonal relationships where coordination of activities relies heavily on the use of rules, procedures and written records and on the decision of the lowest common superior to the people concerned and officials are selected solely on the basis of technical qualifications.

The bureaucratic form of structure in management is basically the traditional form of organization where the basic building blocks are the functional division of management and a well-defined hierarchical structure. Under this traditional form of organization, a firm is organized into various departments such as production, purchasing, marketing, finance, personnel engineering, research and development (Chandra, 1995). Some of the departments

Figure 4.7.1 – Opinions on the Effectiveness of Building Projects



Source: Field Survey (2011)

From the information provided in the figure above, 60% of the respondents concurred that end products meet set standards and are within set criteria despite myriad organizational challenges that the industry faces on process of services provision. Furthermore with 20% responses showing that end products of government financed projects are very satisfying make it possible to conclude that Ministry of Public Works is a leading institution in construction and maintenance of quality public building works for sustainable socio-economic development.

The respondents discussed and agreed that Ministry of Public Works is the leading institution in the construction industry as they concurred that even though projects completion rate 75% is often behind schedule, finished projects meet set criteria. The results show and are clear indications that building sector is performing positively in terms of qualitative services provision in the Republic however poorly in terms of schedules and cost overrun as shown in

have a line function and others a staff function. In this case, the line managers have the responsibility for achieving the goals of the firm and are vested with decision-making authority whereas the staff managers primarily serve in advisory capacity within their staff departments where they hold administrative powers. In the Ministry, the functional managers are the technical heads and the staff managers are the administration managers headed by the Director of Administration and comprise Heads of Procurement, ICT, Accounts, Finance and Corporate Affairs. Their role is supplementary in the attainment of the organizational goals.

Line and Staff Organizations

In this type of structure the 'line' managers are responsible for production. They pass instructions and information down the hierarchy and control what happens. 'Staff' are the functional specialists – architects, quantity surveyors, engineers, accountants, estimators and so on who provide a back-up service to the line managers. Some of the specialists runs departments and therefore have both line and staff responsibilities. Their authority is, however, limited to their own specialization. A senior planning engineer, for instance, has a line relationship with his boss and subordinates, and a staff relationship with the operations managers for whom he provides planning services.

In its basic form, the line and staff structure is a split into functions, but there are many variations. When a firm or organisation widens its scope, it may split into product divisions, when a specializing in a type of work or market, such as housing, refurbishment or road construction. A company which expands geographically is more likely to become area-based. Here it makes sense to decentralize some of the administrative functions and perform them locally. This is the situation with the current regional works offices within the Ministry where the County Works Officer performs both the line and staff functions

In both cases, divisions are usually fairly autonomous and are responsible for their own profitability. The parent company retains a headquarters, mainly for strategic planning, policy making and overall financial control. The divisions have their own estimators, project planners, buyers, etc.

In both area and product-based organizations, the problem of how best to group activities remains. Each division may be split into functional specialisms, so that it appears to be a

microcosm of its parent firm. However, the division can respond more quickly and flexibly to the demands of its product or area, than can its parent. Complications arise when a company both expands and diversifies. It may need some of the features of product and area organization and must operate a blend of functional, area and production organization.

Matrix Organizations

In this type of arrangement, the traditional management hierarchy of the chain of command is partially replaced in the matrix structure by network of lateral and vertical role relationships better suited to the to the need for teamwork and integration. In the matrix organization, managers and supervisors responsible for the various trades and specializations, report vertically to their 'line' bosses in the parent firms and laterally to the projects manager or co-ordinator. This separates the roles of managing people and managing tasks. Project staff have both a functional boss, who runs their career and tries to balance the demands of the project and the parent organization, and project boss, who 'bids' for their services. Clearly, this can create problems of loyalty and commitment. In reality the individual participants remain loyal to his functional boss but is committed to the project.

The matrix type of organisation is best suited for use in the design of large or complex projects such as superhighways, power stations and other heavy engineering works.

2.2.4 Forms of Project Organization

The traditional form of organization has a number of inherent characteristic that renders it unusual in project environment and these according to Chandra (1995) lack ways and means of integrating different departments at levels below the top management and the means to facilitate effective communication, coordination and control when several departments with different professional backgrounds and orientations are involved in a project work under time and cost pressure, and high customer expectorations.

Hence there is need for entrusting an individual (or group) with the responsibility for integrating the activities and functions of various departments and external organizations involved in the project work. This is because every project is a one-off undertaking and little

learning takes place. Such an individual may be called the project manager or project coordinator. Depending on the authority that is given to the person responsible for the project, the project organization may take one of the following three forms; line and staff, divisional or matrix organization structures as explained below

Line and Staff Organization

In this form of project organization, a person is appointed with the primary responsibility of coordinating the work of the people in the functional departments. Such a person, referred to commonly as the project coordinator, acts essentially in a staff position to facilitate the coordination of line management in functional departments. The project coordinator does not have authority and direct responsibility for line management. He serves as a focal point for receiving project-related information and seeks to promote the cause of the project by rendering advice, sharing information, and providing assistance. He may gently coax line executives to strive for the fulfilment of project goals. Deprived of formal organizational authority, he may find it difficult to exert leadership and feel unsure of his role. His influence would depend on his professional competence, closeness to top management and persuasive abilities. Clearly, this is a weak form of organization which may be employed mostly for small projects; it is certainly not suitable for large projects.

Divisional Organization

Under this form of project organization, a separate division is set-up to implement the project. Headed by the project manager, this division has its complement of personnel over whom the project manager has full line authority. In effect, this form of organization implies the creation of a separate goal-oriented division of the company, with its own functional departments. While the project manager still has the problem of coordinating the inputs of other organizations involved in the project, he has total formal control over the division he heads.

The divisional project organization is a very strong form of project organization which facilitates the process of planning and control, brings about better integration of efforts and strengthens the commitment of project-related personnel to the objectives of the project. It considerably improves the prospect of fulfilling the time and budget targets.

This form of organization, however, may entail an inefficient use of the resources of the firm. It may result in an unnecessary duplication of specialists in the company, because of the

necessity to allocate them in total to each project. Further, it may be difficult to achieve a higher degree of specialization of expertise because the divisional project organization may have to manage with, say, one mechanical engineer, rather than two specialists.

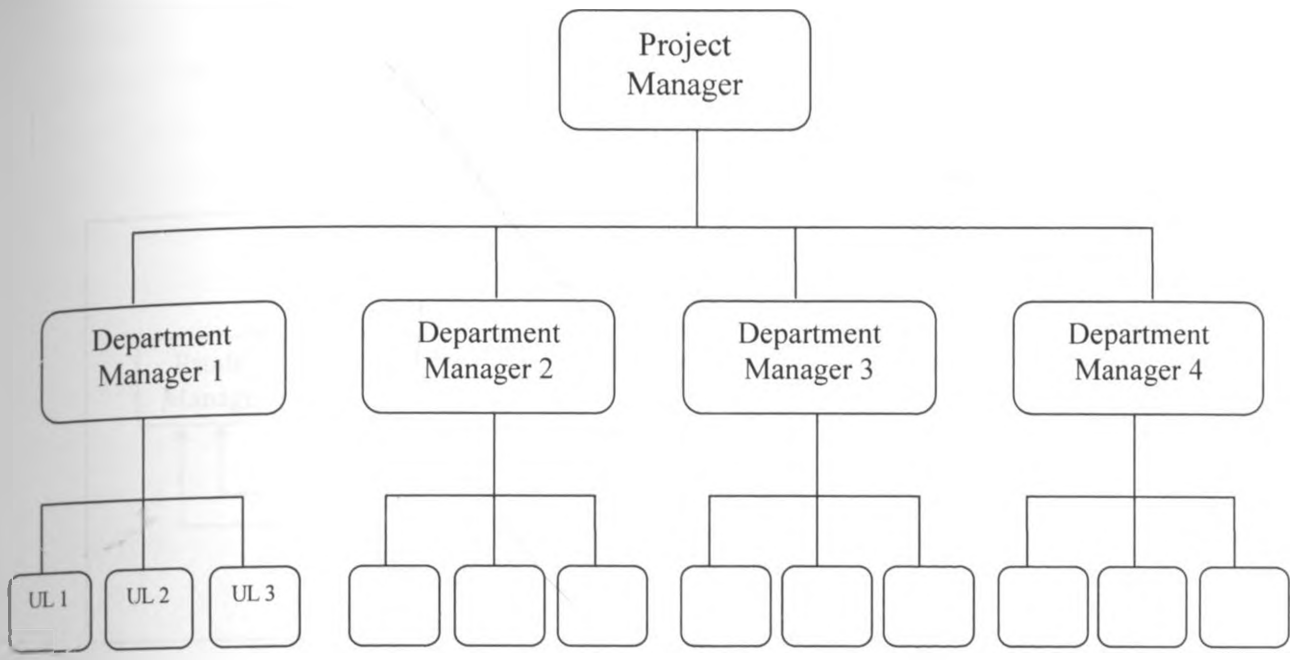
Matrix organisation

This came about as a result of the deficiencies noticed in the traditional organization structure. The form of project organisational structure adopted by the Ministry is a Matrix Form of organisations as shown in the Figure 2.3. At the apex of the structure is the Employer represented by the Permanent Secretary. By default the Works Secretary is the *de jure* Project Manager but the *de facto* is the Chief Architect. This matrix form of project organisation structure aims at achieving twin objectives of efficient use of resources and effective realization of project objectives; at the cost of greater organizational complexity (Chandra, 2000).

Piorot (1991) states that the matrix system is power sharing, power balancing and if power moves to one side the whole organisation loses. The matrix structure is the most effective as long as the managers have clear definitions of authority and responsibility, have mutual respect for each other and be excellent communicators, be able to set aside individualism and understand the essence of a matrix as a group that must succeed.

Few project managers are allowed the authority of setting up distinct or own project organisations as more usually they are put in an organisation that has been pre-determined for them by senior management or company customer (Lock, 2004) as is the case of public project organisational set up. In a pure project team structure the line of command to everyone working on the project comes directly from the project manager. The line must pass through other managers but the project manager is still at the top of the project organisation and in complete charge, as depicted in the structure below:

Fig. 2.1 – Typical Project Organisation



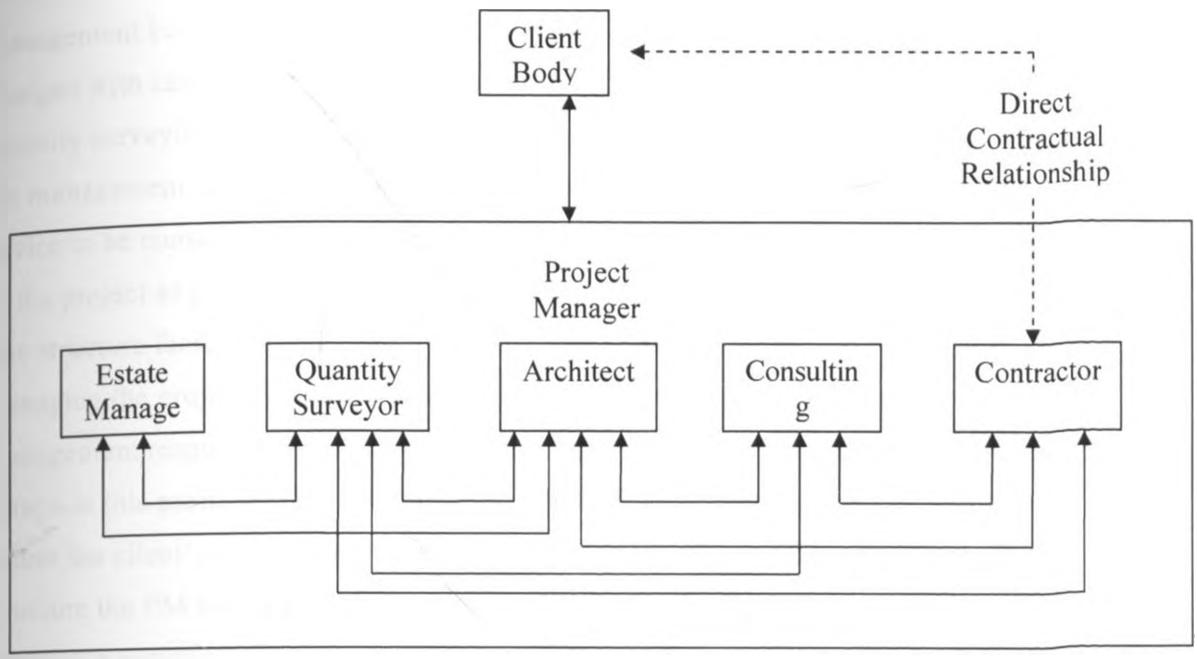
Source: Lock (2004)

Legend:

UL 1 – Unit leader 1; UL 2 – Unit leader 2; UL 3 – Unit leader 3

In this kind of project organisation, it becomes easy to develop team spirit and encourage every team member to work hard without distraction. It ensures no leakages of information and communication is moderately easier as the entire project team and operates from one or two office space. The project manager here has no conflict of power and authority with any other manager in the organization. Schermerhorn *et al*, (2004) reports that this kind of project structure is still seen in the 21st Century as a new invention by the general management literature and further described by the major contributing force behind today's revolutionary changes in organisation. This type of arrangement is similar to the Figure 2.6 (executive project management organisation structure) in which the PM has full control over the project resources.

Figure 2.2 Executive project management



Source: Walker, (2007) – Adopted

In this kind of project management structure the project management activity occupies a dominant role in relation to the other contributors, and although they operate as a team, the project manager will make the decisions that are within the purview of the contributors or team members (Walker, 2007). He or she will tend to be the sole *formal* point of reference to the client for the purpose of agreeing and transmitting the decisions that must be made by the client. In addition, the project manager will be concerned with controlling, monitoring and maintaining the project team unlike the case in the Ministry where the PM is a figurehead as his role is only designing, coordinating and communicating.

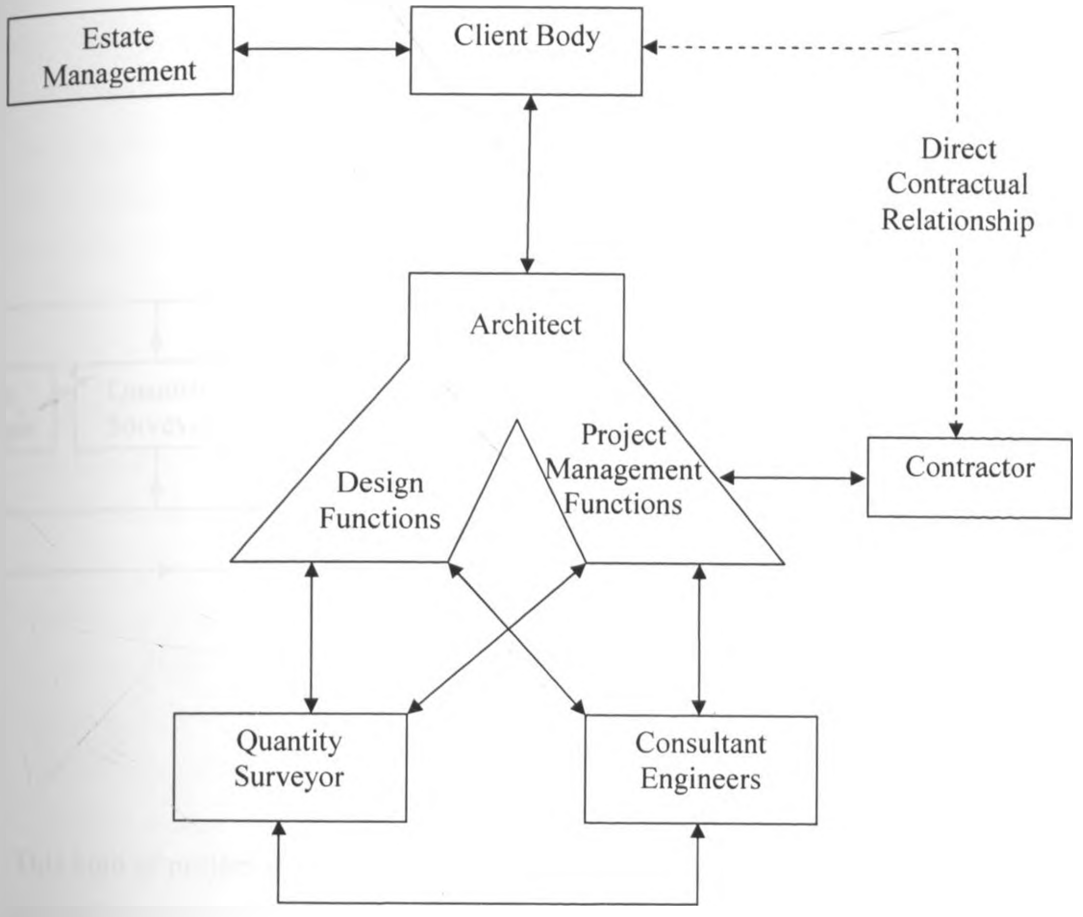
Griffith, *et al* (2004) portends that for efficient and effective management of an organisation there must be clear business aims, objectives and policies commensurate with the core activities of the organisation. The organisation must therefore establish a strong, recognised and acceptable structure to translate these key elements into workable procedures through the corporate/parent and project management structures which should be linked with the organisation management systems. This calls for strong and effective leadership with authority to direct the activities of both the parent and project organisations.

The major benefit claimed for the executive project management structure is that management becomes clearly separated from the operating system as the PM is not charged with carrying out both design activities, be they architecture, engineering or quantity surveying, and project management activities. This allows concentration upon the management needs of the project and makes it possible for conflicting professional advice to be considered more objectively so that decisions which are in the best interests of the project as a whole can be made or recommended (Walker, 2007 & Kerzner 2001). The structure facilitates integration with the client because the person responsible for managing the project within the client's organization can readily identify the management responsibility within the design team and is likely to have empathy with the person in this position. This should facilitate the decision-making process, particularly within the client's organization. Meredith, *et al* (2010) asserts that in this kind of structure the PM has full line authority over the project and that although he/she must report to a senior executive in the parent organization there is complete workforce dedicated to the project. The PM can plan for the project objectives and make decisions independently. This is not the situation in the MoPW where the project manager can not make any substantive decision in the project without reference to the appointing authority and where also the management operating system dies not recognize his role. For example the BOOM recognizes only the architect as the group leader.

The position of Estates Manager is the equivalent of the former Department of Building Maintenance/Surveyor in the former greater Ministry of Public Works and Housing. These functions have since been transferred to the Ministry of Housing as the Estates Department.

Traditional structure

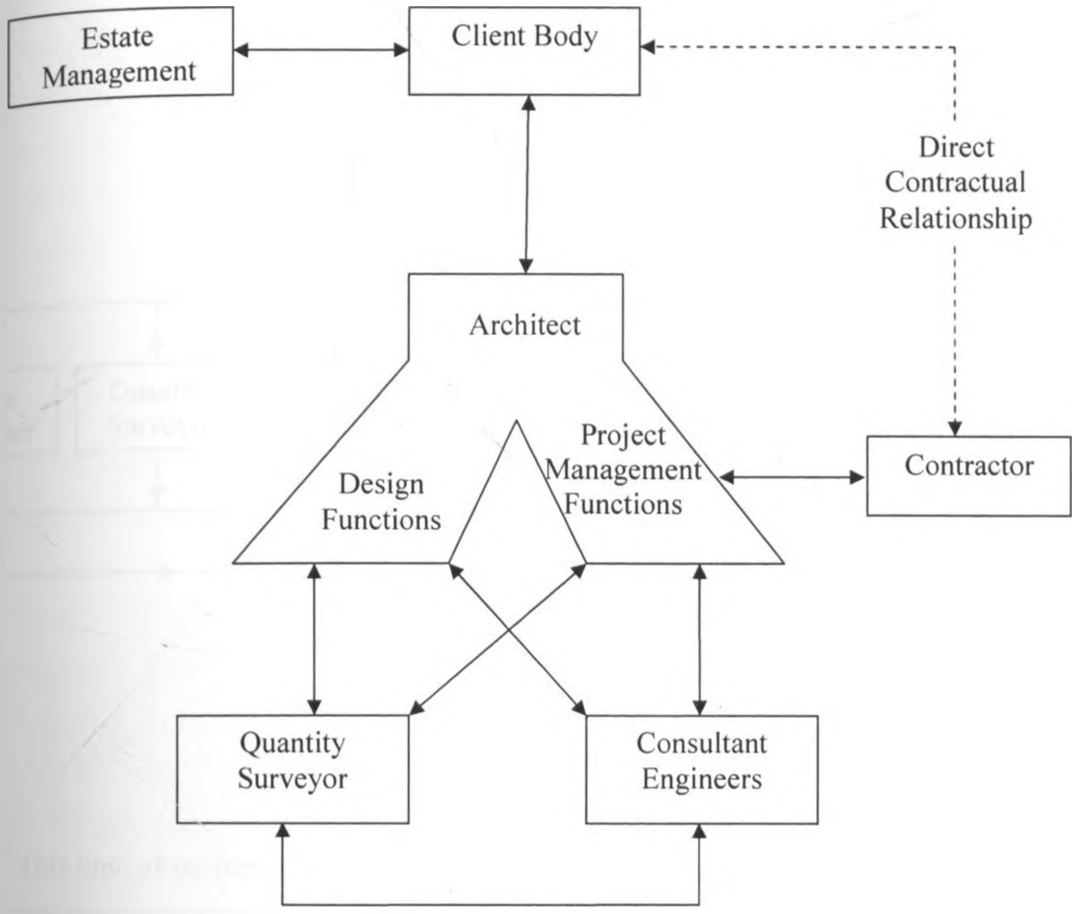
Figure 2.3 -Traditional structure



Source: Walker, (2002) – Adopted

Traditional structure

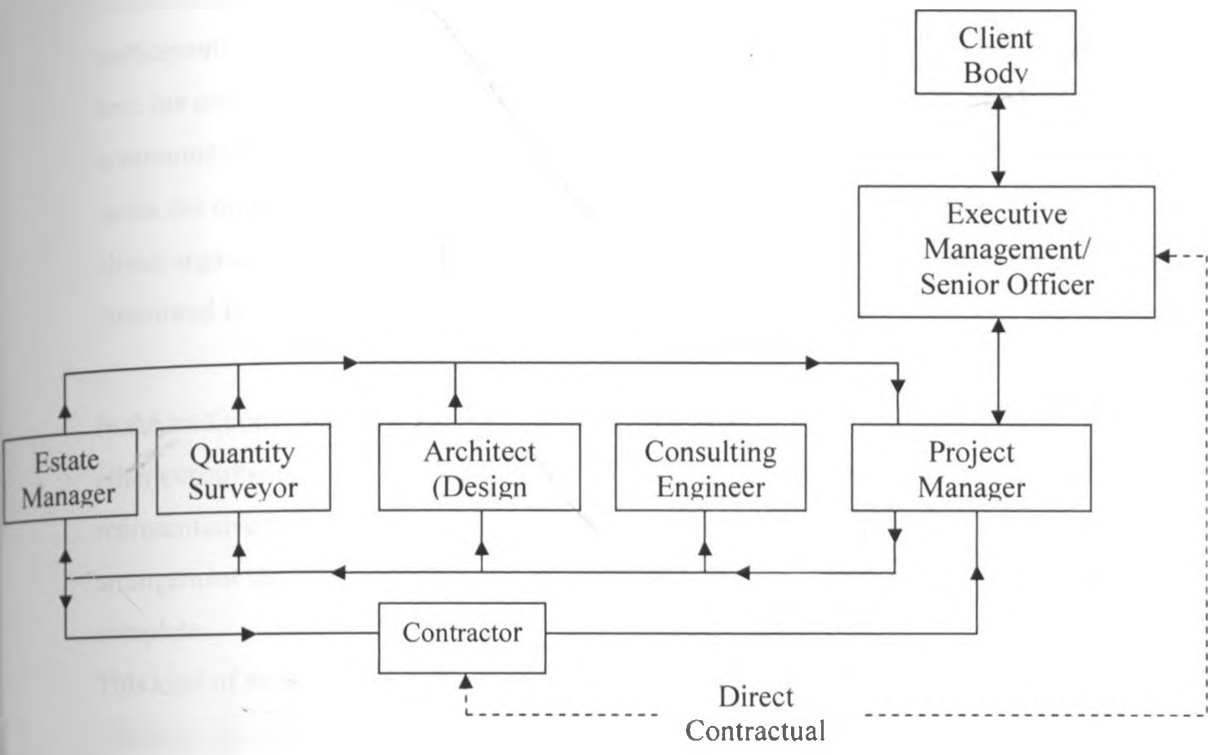
Figure 2.3 -Traditional structure



Source: Walker, (2002) – Adopted

Non-Executive Project Organisation structure

Figure 2.4 - Non-executive project management



Source: Walker, (2007) – Adopted

This kind of project structure is often employed by interdisciplinary practices, either in private practices or in-house to the client's organization such as in the MoPW and is one that includes a non-executive project manager. Walker (2007) refers to the project leaders here as the co-ordinator, who operates in parallel with the other contributors, as illustrated in Figure 2.5. The role undertaken by the person in this position is based upon communication and co-ordination activities and is not concerned with decision-making. In these circumstances responsibility for the success or failure of the project will be with the organization or the particular in-house department. This common in the Ministry for pure civil works such as jetties and electrical works such as the supply and installation of special equipment when the other departments of architecture and quantities are not part of the project participants as all the team members are drawn from one department. Here the project manager is the head of Civil or Electrical whichever the case is the case with projects in public works where the Project manger is the and not with the non-executive.

A non-executive project management structure is also seen in the public sector corporations such KIRDI, KEFRI and Central Bank of Kenya projects among others where the client in-house technical officers such as in MoPW and Ministry of Water Resources. Here the participants are from separate practices but works as a consortium. The lead consultant is here the one responsible for the design and project management aspects of coordinating and communicating with overall authority resting on the client/employer. The design team works under the umbrella of the lead consultant but with different contract agreement with the client organization. This type of structure has the least differentiation as the chain of command is shorter.

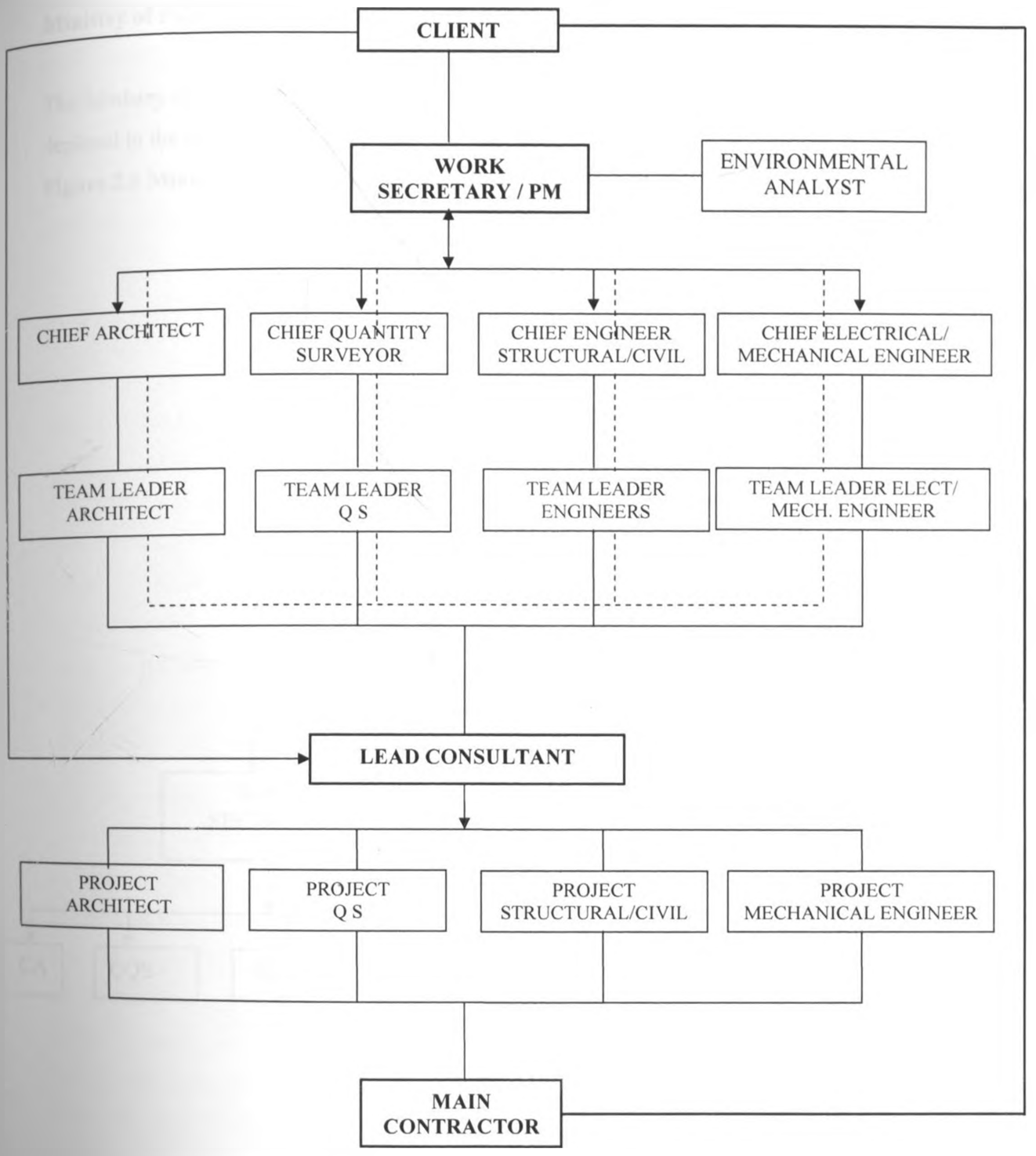
In the traditional structure the architect being responsible for design and management with other consultants acting for the architect and with estate management functions or client's representative being directly responsible to the client is illustrated in Fig. 10.1. In such an arrangement the contractor is normally appointed after the design and documentation are complete.

This kind of structure according to Walker (2007) produces a high level of differentiation between the contributors, which demands a high level of integration. The problem of providing the appropriate level of integration is compounded by the fact that the managing system is not differentiated from the operating system. That is, the architect is attempting to fulfill dual roles. One is in the operating system - design - the other is the management of the project. There is therefore a high potential for someone in this position not to be able to exercise objectivity in decision making. In addition, whoever is in this position is placed under severe pressure by being required to undertake tasks that frequently require what are often incompatible skills design and management. This is the real situation in the Ministry where the Architect is the PM as well as the designer, chairs meetings and takes minutes.

The above type or project management arrangement becomes wanting if the appointed leader (PM) has only technical skills and little or no human and conceptual skills. Katz (1971) as cited by Fryer (1985) asserts that managers use different combinations of skills for different kinds of management work based on prevailing situations and these are human skills , technical skills and conceptual skills. The human skill is noted to be important at all levels of management but more so for the junior managers who are constantly in contact with the participants.

It should be noted that traditional form of project organization is not only peculiar to public projects for it has also its roots in the private sector organizations where the first appointed consultant (usually the Architect) assumes project management responsibilities alongside the professional functions, leading to a potential lack of objectivity in weighing factors from other contributors. There is also the danger as such a structure has a tendency to restrict access of the other contributors or consultants to the client and hence the decision making process. According to Walker (2007) the perceived personal relationship between the client and the architect, particularly with clients new to construction, can inhibit the client from approaching the other contributors for direct advice. As there is no one solely dedicated to the project management role, there is a danger that opposing views or constructive criticisms is not taken, which will be to the detriment of the outcome of the project as set out in the project mission.

Figure 2.5 Project Structure Consultancy



Legend

Contractual Relationship

Authority Flow

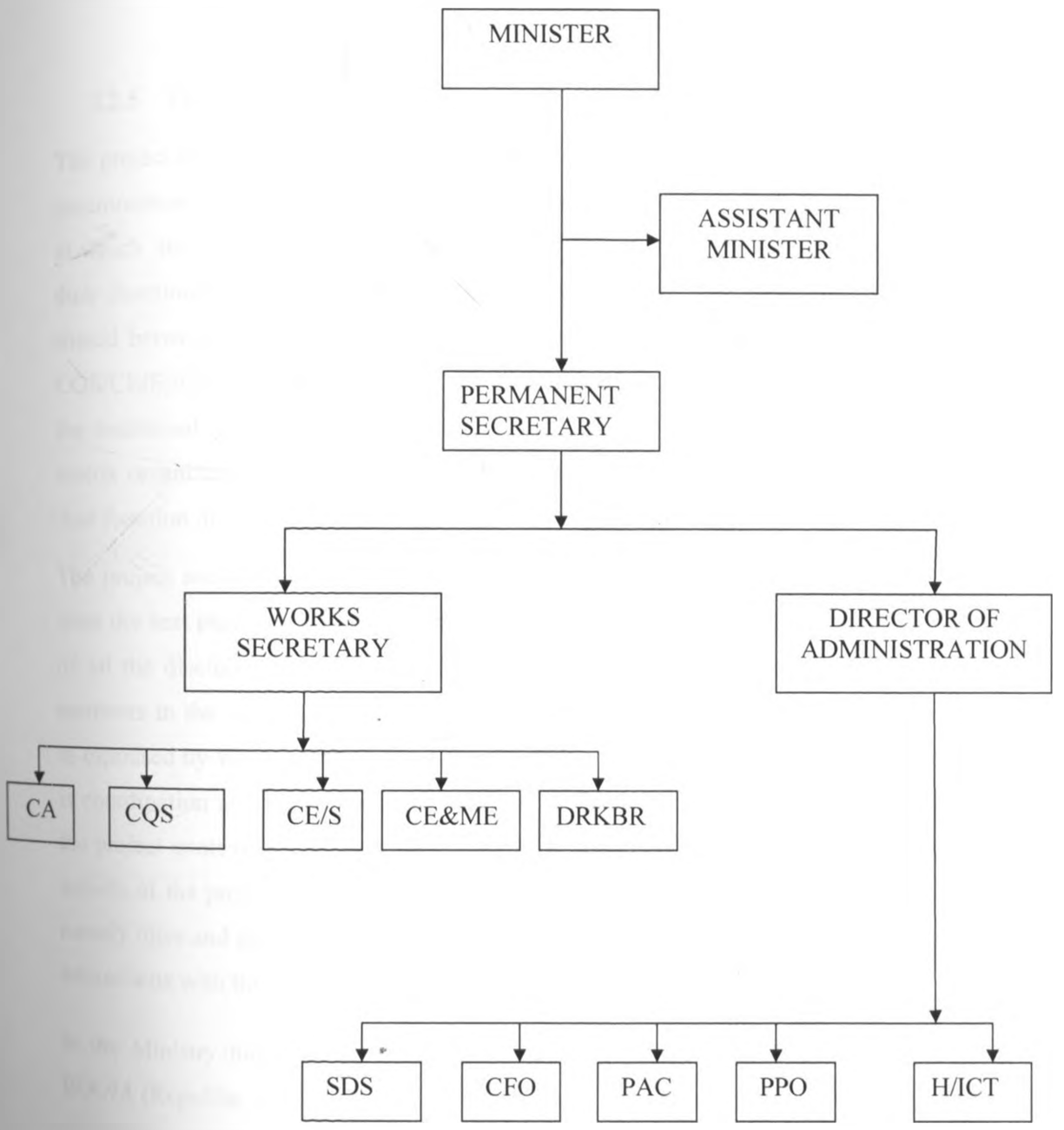
Communication Line

Source: MoPW – Project Organisation

Ministry of Public Works Organisation Structure

The Ministry of Public Works is a replica of a social bureaucratic system of organization as depicted in the organization Figure 2.2.

Figure 2.6 Ministry of Public Works Organisation Structure



Source: MoPW Organogram (2008)

In this kind of arrangement majority of the organizational workers are protected or prevented from making decisions through their constant deference to authority and reference to the rule of books. For example the Code of Regulations (Republic of Kenya, 2006) and the Scheme of Service (*Ibid*, 2006) specifies the responsibilities and authority at each level of the organization. The form of organization structure is therefore bureaucratic and is a common feature in all large public sector organizations as remarked by McHugh and Bennet (1999).

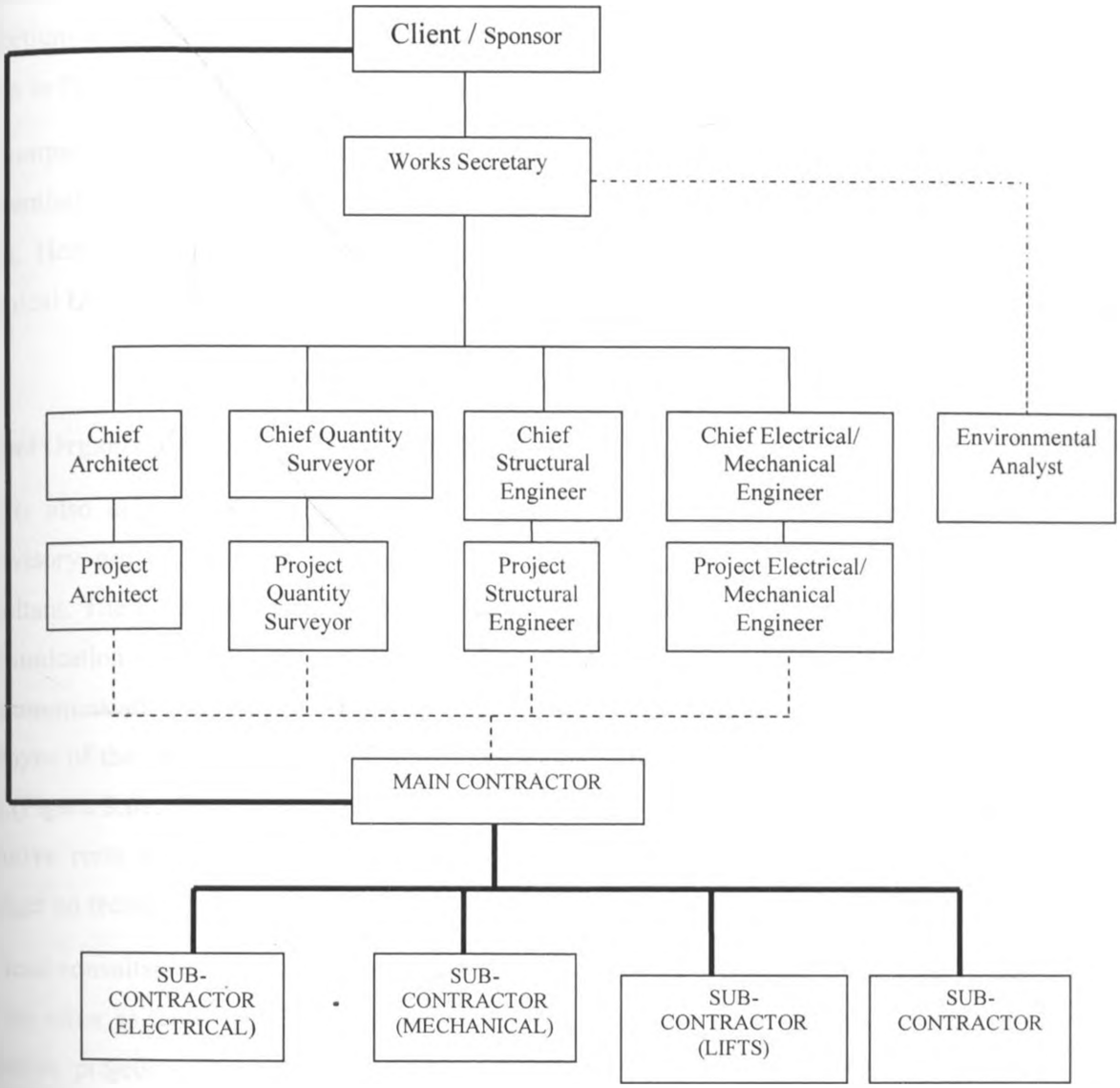
2.2.5 Project Organizational Structure in Public Building Projects

The project organisation structure in public works as shown Figure 2.3 is different from the parent/administrative organisation in that the former is a matrix form of project organisation in which the personnel or consultant working/assigned on the project have responsibility to their functional superiors as well as the Project Manger. This means that the authority is shared between the Project Manager and the functional manager which in this case is the CQS/CE(S)/CE&ME(BS). The authority and influence of the Project Manager cuts across the traditional vertical line of command. In the case of the Ministry of Public Works the matrix organization is skewed towards the architectural profession as the architect plays the dual function of the PM and the project architect.

The project architect is supposed to be one of the team members. This is a total deviation from the best practices where the PM is appointed by name and superintends upon the works of all the disciplines involved in the project by integrating the contributions of the team members in the various functional departments towards the realization of project objectives as espoused by Walker (2007), Meredith, *et al* (2010) and Lock (2004). The chief role of PM is coordination and management of interface between functional/ technical activities within the project context and environment. The PM is supposed to be divorced from the technical aspects of the project. He can achieve coordination through several integrating mechanisms namely rules and procedures, planning processes, hierarchical referrals and direct contact and interactions with the functional managers (Kerzner, 2001).

In the Ministry the main guide is the Buildings Organization and Operations Manual , BOOM (Republic of Kenya, 1974), The Quantity Surveyors Handbook/Manual, 2008 and the design manuals for the Structural and services engineers. These documents specify management policies and procedures aimed at eliminating or minimizing conflicts between functional departments through setting work guidelines and improving communication.

Fig. 2.7 - Project Organizational Structure



Legend

Contractual Relationship

Authority Flow

Communication Line

External Communication Line

Source: Author (2010)

Figure 2.1 shows the project organization structure where the consultants are in-house.

Whenever there is lack of capacity the Client ministry hires the services of consultants as a consortium who are answerable to the client through the Project manager. The arrangement is shown in Figure 2.5.

By comparison this kind of organisation structure creates more vertical and horizontal differentiation. Transaction costs are more here than the case where the consultants are in-house. Here the consultant is answerable to the project manager through the Heads of Technical Departments.

Project Organizational Structure (Consultancy)

This is also non-executive project management but with two levels; the administrative/ supervisory project structure and the project management structure headed by the lead consultant. The lead consultant is here the one responsible for the design, coordinating and communication within the project environment but management authority for coordinating and communication with the external environment rests with the project manager who is an employee of the Ministry supported by team of similar composition as the superior project team.(Figure 2.6). The overall authority and decision-making as in the other forms of non-executive rests with the client or employer. The authority and influence of the project manager on technical matters still cuts across the traditional vertical line of command.

The lead consultant may be a firm of architects with one of its architects as the team leader and the other as the design architect but with permission from the client through the non-executive project manager as this has additional cost implication. In reality the lead consultant carries out the dual function of the designer and the team leader. This is a total deviation from the best practices where the lead consultant is supposed to superintend upon the works of all the disciplines involved in the project by integrating the contributions of the team members from the other disciplines. The lead consultant is supposed to be divorced from the technical aspects of the project which he can successfully achieve by coordination through several integrating mechanisms defined within the formal project management sub-system.

A comparison with the sister Ministry of Roads (Figure 2.4) shows that in roads projects the situation is different as it is ideally a Divisional form of project organisation. Here the Chief

Engineer who is the Project Manager by default appoints the Project Engineer from one of the senior engineers at the level of Chief Superintending Engineer and above. The Project Managers in consultation with the Engineer appoints the Resident Engineer who is responsible to the Engineer on the day-to-day site operations. The Resident Engineer is the Engineer's representative as defined in Clause 2 of FIDIC Part I. In this form of project organisation, the Roads Department acts as a separate division of the Ministry of Roads headed by the Chief Engineer (Roads) as the Project Manager: it has its complement of personnel namely the engineers, the environmentalist, Economist and Accountant over whom the project manager has full line authority.

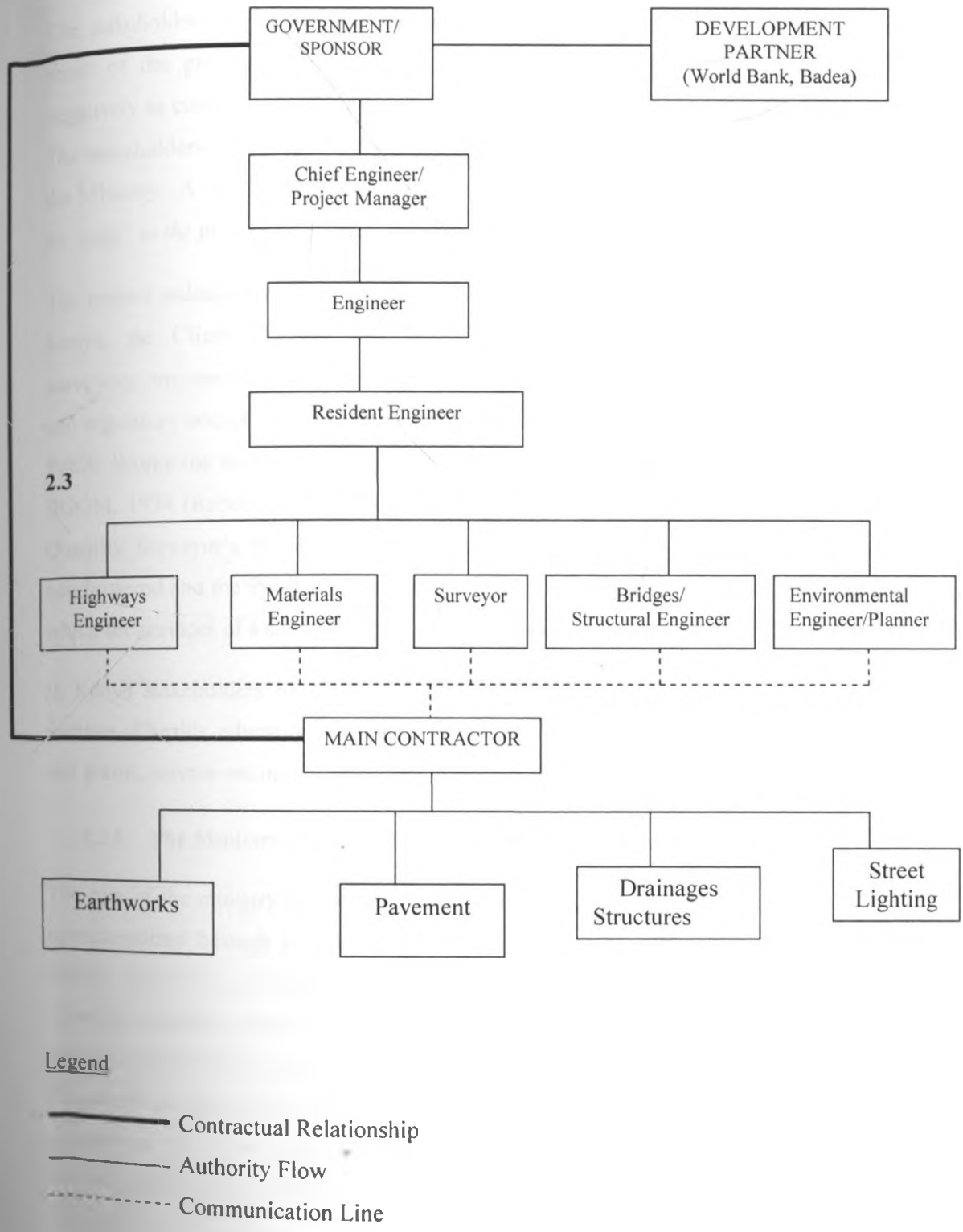
According to Chandra (2000), this form of project organisation implies the creation of goal-oriented division of the Ministry, within its own functional department. This divisional project organisation facilitates the planning and control processes, brings better integration of professional effort and strengthens the commitment of project-related personnel to the project objectives and therefore considerably improves on the prospects of meeting the time and budget constraints. Figure 2.4 below shows how the arrangement works and compares well by the recommendations by Kerzner (2001).

2.2.6 Ministry of Roads Project Organisation

The Ministry of roads deals principally with the construction and maintenance of roads nationally and where any roadworks contain some building works those are normally put as sub-contract under the main road works.

The roads arrangement would be most ideal despite the fact that it can lead to duplication of functions of specialists if employed at the Ministry of Public Works. If projects have dedicated funds, then the Ministry would do better if the structure of the project is made to conform to divisional organisation type of structure. This form of organisation prides in the creation of a separate goal-oriented division of the Ministry with its own functional departments. Figure 2.4 shows a pictorial representation of project organization within the Ministry of Roads.

Fig. 2.8 Roads Project Organization



Legend

Contractual Relationship

Authority Flow

Communication Line

Source: Ministry of Roads Organogram (2008)

2.3 Public Building Projects Stakeholders

The stakeholders are basically the actors who may experience direct benefits or loss as a result of the project. The losers are the individuals or organisations that are affected negatively as construction projects can either create new values or destroy the existing values. The stakeholders are brought into the project through the external communication channel of the Ministry. A 'stakeholder' is *a person or entity outside the project that has a key interest or 'stake' in the project* (Westland, 2006).

The project stakeholders in the public building construction industry are the Government of Kenya, the Client Ministry, the consultants (Project Managers, Architects, Quantity surveyors, engineers), the users/customers, the contractor, the sub-contractors, the suppliers and regulatory bodies such as NEMA, PPOA, Local authorities and KEBS. In the Ministry of Public Works the entire building works and processes are guided by the rules contained in BOOM, 1974 (Republic of Kenya 1974). Derived from this with few modifications is The Quantity Surveyor's Handbook (*Ibid*, 2008) which spell out how the projects are to be administered and the Public Procurement and Disposal Act 2005 spells out the ways through which the services of a contractor or consultants can be procured(*Ibid*, 2005).

in Kenya stakeholders have been instrumental in the construction and development of a number of health, education and other institutional facilities through cost sharing, *Harambee* and grants, private sector, voluntary organisations, donor community and NGOs (*Ibid*, 2002).

2.3.1 The Ministry of Public Works as Consultant (Consortium)

The role of the ministry as spell out in the Presidential circular No. 1 of May 2008 and is operationalized through BOOM, the Quantity Surveyor Manual and the Service Engineers Manual (Republic of Kenya, 2008). The Ministry as a consulting ministry has architects, quantity surveyors, electrical and mechanical engineers who form the design team. The client ministry provides the brief, site, and this is developed to their requirements. Upon the completion of the documentation (working drawing, BoQ, specification, and of bidding documents), the client ministry advertises the projects in at least two papers of national circulations stipulated in Public Procurement and Disposal Acts 2005 (Republic of Kenya, 2005).

The ministry evaluates the bids with assistance of technical offices from the Ministry of Public Works and recommends to the clients the lowest responsive bidder for award. Any

ministry whose request for specified accommodation has been accepted by the Buildings Department (currently MoPW) is thereafter a Client in the eyes of the Ministry (BOOM, 1974). Once the contractor has been awarded the contractor is handed over the site and works begins with ministry's technical officers as the supervisor. Contractor makes statement of work done every month and present to the managers who has 14 days to assess the same and present certificate to the client ministry for payment within 30 days in accordance with clause 23 of the Public Procurement document for Building and related Civil engineering Works (*Ibid*, 2005).

The Ministry is also responsible for providing technical advice on the competencies of professional consultants to be engaged by the client ministries and all these consultant work of the government are done under the supervision of the Ministry.

Grading Structure

Job Group: The Public Service Commission of Kenya which is the constitutionally recognized employment authority in Kenya categorises the employee levels in Grading Scales called Job Groups A – T (Public Service Commissions Act Cap 185 and Section 107 of the Constitution). Professionals graduate Architects, Quantity Surveyors and Engineers enter at Job Group 'K' and rises upto Job Group 'T'. The Head of Ministry is the Permanent Secretary but whose appointment is directly by the President. The employees can be promoted every three (3) years depending on having passed the requisite professional examinations, meritocracy and performance at interview and availability of vacancy (Republic of Kenya, 1968).

At high levels (Job Groups 'P', 'Q' and 'R') the additional requirement for promotion are that an officer must have the following key competences thus:

Personal Qualities

These qualities include ability to articulate and implement Ministerial/Departmental Mandates, organizational, analytical, managerial and decision making skills, creativity and innovation, technical problem solving, resource management skills, interpersonal and communication skills, integrity and commitment to producing results, leadership, advocacy, relationship building and collaboration, result oriented, self driven, Appreciation and application of technology in the work environment, and initiative to achieve expected results.

Core Skills

The core skills include people management, financial management, policy implementation, planning, co-coordinating; and strategy implementation

For Job Group 'S' – 'T' which fall within the top management and are responsible for policy direction, the additional requirements in terms of competencies which an officers must have are the ability to articulate, interpret and implement National and International Policies and Development Goals, organizational, conceptual and analytical, managerial and decisive skills, creativity and innovation, technical problem solving, resource management skills, interpersonal and communication skills (Republic of Kenya, 2008).

In the Ministry of Public Works the appointment of the project team members is done by Works Secretary on the recommendations of Heads of the four technical Departments and the team becomes disbanded upon completion of the project. The team members are normally headed by officers in Job Groups M to Q who may also have control over one or more project at a time with same or different project team members. These teams are however not unusually managed by the senior most of the team members.

One would certainly expect to have high output in public projects given the level of competencies demanded of the project leaders who fall in categories M-Q (job groups) and work under the functional leadership of a Senior Consultant at job group "R". Unfortunately not all the leaders are selected on the above criteria as some are directly appointed without interview or most of the attributes are lacking.

2.3.2 The Private Consulting Firms

The building or civil engineering contract is between the clients (employer or promoter) and the contractor. The appointments of consultants for a project, whilst referred in the contract, are not part of what is commonly described as a building contract. The various consultants engaged on a project will therefore have their own individual contracts with the person or organization who employs them (Ashworth, 1984).

In different regions and countries of the world different forms of consultant contracts have been prepared to suit the particular needs of different consultants and are used in their appointments (*Ibid,* 1984). For example: Architects – Royal Institute of British Architects, Quantity Surveyors – Royal Institution of Chartered Surveyors, Structural Engineers – Association of Consulting Engineers, Building Services Engineers –Association of

Consulting Engineers, Project Managers – Royal Institution of Chartered Surveyors and Civil Engineers – Association of Consulting Engineers.

In Kenya the conditions and form of appointment for Architects, Quantity Surveyors, Structural, Civil, and Services Engineers for public service projects are contained in the Conditions of Engagement and Scales of Fees for Professional Services for Building and Civil Engineering Works (Republic of Kenya, 1989).

The private consultant firms in Kenya exist mostly as sole proprietor, partnership with two to four directors/partners and a few as Limited companies with more than three directors. In Public projects only partnerships and limited companies are allowed to do government projects (Republic of Kenya, 2005). The consulting firms must be tax-compliant with PIN and VAT registration Certificates. All the Partners or Directors must be registered by the Board of Registration of Architects and Quantity Surveyors under Cap. 525 or as Engineers under Cap 530, Laws of Kenya and have valid practicing license. Further they must be registered with the Ministry of Public Works for Building and Related Civil Engineering Works and with the Ministry of Roads in the case of Roads/Highway Engineers in the various professions and at grades commensurate with their experience and qualification of personnel within the firm.

The consultants are commissioned by the clients' ministry on the advice of the MoPW technical staff and carry out supervision and management on behalf of the Ministry of Public Works technical officers who oversees their role. According to BOOM (1974) one of the responsibilities of the Ministry of Public Works is the preparation of the designs for projects by using either its own resources or those of the consultants whom it will appoint as necessary. The services of these consultants up to 2006 was procured through the guidelines outlined in the BOOM but commissioning done by the Permanent Secretary, Ministry of Works from the registered list of firms. A typical commissioning letter for the Architect, Quantity and Surveyor, Electrical Engineers/Mechanical Engineers (BS) and Structural are appended and denoted Appendix 3 and Appendix 4.

The direct hiring of consultants by the MoPW has since changed following the enactment of the Public Procurement and Disposal Act of 2005. Section 54 of the Act allows the Procuring Entity to procure such consultancy services through open tender and section 75 on how to obtain the services through *Request For Proposals* in which the Procuring Entity first puts an

advertisement for expression of interest where certain aspects of the consulting firms suitability are assessed and thereafter pre-qualified to go to the next level of Technical Proposal which is then assessed using set criteria contained in the Terms of Reference (TOR). The TORs contain, amongst others, the proposal requirements such as qualification of key personnel, experience of the firms, type/nature and scope of similar developments undertaken, methodology and work plan in the undertaking of the proposed project. The whole exercise is done by the Procuring Entity Procurement Committee with the relevant input of Ministry of Public Works' technical representatives before the recommendation is made to the Tender Committee of the procuring entity which then awards services contract in accordance with the Public Procurement and Disposal Act, 2005 (Republic of Kenya, 2005).

The drawings/specifications and other tender documents done by the consultants are approved by the ministry before being issued to the client ministry or procuring entity for inviting tenders. The payment certificates done by these consultants must be approved by MoPW before being forwarded to the client ministry for payment. Similarly all variations with cost implications and those requiring extension of time issued by the consultants must be approved by the Ministerial Tender Committee before being issued to the Contractor (Republic of Kenya, 2005).

2.3.3 Contractors

The contractors are responsible for the execution of the works as shown upon the drawings and described by the specification and/or contained in bills of quantities. The contractor is one of the parties to the contract and is responsible for the works upto defects liability period.

2.3.4 Client Ministries/Procuring Entities

Responsible for Legal acquisition of site, providing brief, appointment of project manager and his team, and ensuring that the proposed works comply with all the statutory requirements.

2.3.5 Regulatory Bodies in the Construction Industry

The regulatory bodies are statutory bodies established under Acts of Parliament. The bodies play a major role in the development of the construction industry and thus ensure that the products and services rendered meet the international and local standards. The bodies

regulate services offered and products produced by the various firms for the general public.

According to Ndonga (2008) professionals and regulatory bodies play three basic roles namely to safeguard public interest, represent the interest of professional practitioners and representing its own self- interest. In Kenya the existing regulatory authorities cater for the professional, manufacturing sectors and professions. Most regulatory bodies describe the roles and responsibilities of the professions it governs, the necessary academic qualification and training that is required to be obtained before an individual registers himself/herself under the Act and the responsibility of or to the public. Among the regulatory authorities and agencies that control the construction industry are Board of Registration of Architects and Quantity Surveyors (Cap 525), Engineers Registration Board (Cap 530), The Public Procurement and Disposal Act 2005, The Public Health Act (Cap 242), Factories Act (Cap 514), The Physical Planning Act (Cap 265), The Environmental Management and Coordination Act (1999), The Physical Planners Act and The Employment Act Cap 226

The success of any public projects depends on, among others, compliance with the relevant sections of the Acts above. For example, for any new construction, NEMA demands an environmental impact assessment report which is pegged at 0.1% of the estimated contract price (Republic of Kenya, 1999).

2.4 Project Management Practices in Public Building Projects

Project management aims at achieving the assigned goals by managing the environment, people and resources (Kolhi,. et al 2008). In any organisation or business enterprise management performs the functions of planning, organising, staffing, directing/leading, controlling, decision-making, coordinating and communicating in order to achieve the organisation objectives and goals. The Ministry of Public Works is the Government arm or organisation charged with the responsibility for policy direction and implementation of all public buildings projects and other public works. Failure of a building project to meet its objective namely completion within schedule, cost and specification and to customers satisfaction is either a failure on the ministry's technical officers and/or financier/Client ministry or the contractor.

The project organization for construction works is structured to administer the project management functions and protect the system from changes in the external and internal environment by streamlining the responsibilities among the Government/Client, stakeholders

and project consultants or teams by developing responsibilities/assignment matrix. According to Walker (2007) the complexity of clients' demand together with the increasing complexity of buildings, civil and industrial engineering, and other constructional work particularly as a result of technological developments, has over the years resulted in increasing specialisation within the industry. It can therefore be argued that the key to higher output in construction projects is the way the contributors are organized so that their skills are harnessed and used in the right manner and the right time.

Public building project leaders are involved in planning the project at appropriate levels, monitors progress against the plan and continuously ensuring that appropriate quality work is carried out by making sure that all the controls specified in the project quality plan are adhered to. This involves carrying out material and equipment tests and devising corrective actions from problem encountered during the execution. The manager makes recommendations for the removal of the consultants who is not meeting the targets and ensures that the consultants' fee notes are processed within the stipulated period in the case where supervision is by consultant employed by the client ministry. The managers further play the interpersonal role of informing and advising the sponsor and customer on the progress of the works or services.

In public building and related civil engineering works, the Works Secretary is by default the project manager but delegates these functions to the Chief Architect who in turn delegates the same to other senior officers who assume the role of project leaders in planning and implementation. The irony is that in certain instances some of these appointees of the Chief Architect happen to be junior to other team members. The project manager through the Architect or Engineer ensures that the daily activities undertaken on the project are in accordance with the approved project plans and specifications. The project manager is also responsible for ensuring that the project produces the required deliverables on time, within budgeted cost and to the level of quality outlines within the quality plan.

The project manager is mainly assisted by project team members who undertake the tasks necessary to design, build and implement the final solution. Team members help in completing tasks allocated by the project manager, reporting progress to the project manager on a frequent basis and maintain documentation relating to the execution of allocated tasks.

The teams are organized into a matrix structure in which resources are drawn from the

technical departments to form the project team. This type of arrangement is shown in Figure 2.6

According to Mullins (1999) a matrix structure is appropriate, where there is need to share resources, among others as one function or project cannot justify the expenditure on a dedicated resource such as having an architect/quantity surveyor one only in a project at a time.

Davis and Lawrence (1977) define matrix organization as the sum of matrix structure, matrix system, matrix culture and matrix behaviour. In the book 'Project Management' by Maylor (1999) the matrix structure includes activities of management in planning, organizing, directing/leading, controlling and motivating with the structure which in the case of public projects fall with the jurisdiction of the project manager.

The project manager's role in public projects is based on the coordination model or *lightweight matrix* where he/she only acts as the coordinator of the works/services provided by the consultants and the contractor and chairs meetings of the representatives of the department involved in the project. Responsibility here is shared for the success of the project amongst the departments; there is therefore little commitment to project success from anyone of the consultants and the project manager is relatively impotent to whip the other team members compared to the functional managers. Walker (2007) refers to this form of project organisation as non-executive and is headed by a non-executive Project Manager. This form of arrangement is shown in Figure 2.5 and is identical to Figure 2.4. The project manager here cannot exercise objectivity in decision-making as the PM has to refer technical issues to the Chief Architect or other technical heads or to individual consulting firms engages in the project. This cause a lot of delay in decision making.

The role of the PM here is basically communicating and coordinating. There is very little difference here between the traditional and this type of arrangement. Modern project management practices world wide uses *executive project management structure* discussed in section 2.2.5 and illustrated in Figure 2.6. In this type of structure the PM is in direct and supreme command with complete authority for directing the participants towards meeting the project objectives .according to Meredith, *et al* (2007).

The project manager in consultation with the other team members, in public projects, using accepted Programme of Works as submitted by the Main Contractor, develops a project work execution plan in which they integrate resources, time, cost and quality dimensions (in the

form of specifications) with the quantity of work to be performed. For example, the public document, PPOA contract document (Republic of Kenya, 2006) Clause 13.1 states "*within the time stated in the Appendix to Conditions of Contract, the Contractor shall submit to the Project Manager for approval a program showing the general methods, arrangements, order and timing for all the activities in the works. An update of the programme shall be a program showing the actual progress achieved on each activity and the effect of progress achieved on the timing of the remaining works, including any changes to the sequence of activities*". Failure by the contractor to submit an updated program of works as and when required by the conditions of Contract may lead to the Project Manager withholding part of the interim payment due to the contractor until a satisfactory program is presented.

The program of works forms a basis of ensuring that the deliverables are achieved within stipulated time frame. Such programmes of work clearly show the configuration of the project scope of work components namely the deliverables such as earthworks, substructure, and structural concrete works amongst other elements as identified in the Bills of Quantities or any form of work package with its performance features outlined. According to Kohli, *et al* (2008) the integrated project work execution plan becomes the database for measuring the implication of scope changes and controlling the project scope performance. The project execution plan is broken into subsidiary plans which cover some or all of the following depending on the nature and complexity of the project name. Such subsidiary plan include project time management plan, project resource management plan, project cost management plan, quality assurance plan and risk response plan.

The time management plan is derived from works program submitted by the contractor, the quality is typified by the specifications, resources management plan and cost management plan outlined in the specifications/and bills of quantities.

2.5 Organisational Culture of the Ministry

Kroeber and Kluckhohn (1952) as cited by Barbara (2010) defined culture as that which consists of patterned way of thinking, feeling and reacting, acquired and transmitted by symbols, constituting the distinctive achievement of human groups and including their embodiment in artefacts. It can therefore be simply taken to mean the way things are done in

an organisation and therefore include the prevailing attitudes, habits, patterns of accepted and expected behaviour.

Barbara (2010) summarises the characteristics of organisation culture as innovation and risk taking, attention to detail, people orientation and team orientation among others. Some of the reasons cited for late completion in public building projects is lack of details, team orientation and risk taking.

In order to increase efficiency and effectiveness in the public sector, there must be some basic ethical standards and values that every organisation in the service embraces. All these must be benchmarked against some existing best practices. In the book *A Sourcebook for Corruption Prevention in the Public Service* (Republic of Kenya, 2003), organisation culture is described as a set of understandings, values, assumption, attitudes or meanings shared by a group of people, to produce behavioural norms in the organisation.

According to *Performance Management: A Business Process Benchmarking Approach* by Rolstadas (1995) argues that benchmarking can lead to several positive effects in the organisation and accomplishment of results. Some of the reasons for practicing benchmarking by established organisations are to improve and strive for excellence through observing best practices as well as to initiate an extremely valuable quest for excellence, find ideas and sources for improvement outside one's own framework or 'box'; this being the individual company, the industry, the country and to create a better understanding of the whole management processes in any system. Benchmarking therefore involves thorough examination of the organization's own processes, both to understand and identify those with the highest impact on success or has the most urgent need for improvement.

All these means that without established service delivery standards and service charter in an organisation it would almost be impossible to gauge whether or not the Ministry is performing well. Republic of Kenya (2002) defines benchmarking as the process of identifying, rating and adopting best practices in service delivery to enable the organization improve its performances. It is indeed a systematic process which involves examining existing service delivery process of similar services in other organisation nationally or internationally such as relating the industry leaders' performance levels or obtaining examples of best practices in that area of service provision and determining appropriate methods of adopting the best practice for improving work performance.

Ethics is defined as *a set of standards which shows what is right or wrong against which we base our decision (Ibid,* 2002*).* The ethical culture of an organisation is therefore its shares of understandings, values, beliefs, assumptions, attitudes and meanings operating in a variety of levels and are used by individuals or groups to make decisions, to justify these decisions and to evaluate outcomes.

In order to uphold ethics in an organisation and improve service delivery standards, all the officers that form part of the organisation must have integrity. The term "integrity" is defined at two levels according *Sourcebook on Corruption Prevention in the Public Service.* namely *personal and organisational levels* (Republic of Kenya, 2002).

Personal level refers to the sum of positive qualities or virtues such as honesty, trustworthiness, goodness, loyalty, truthfulness, courage, impartiality, firmness and steadfastness of principled behaviour whereas organisational level refers to the legality, legitimacy, logic, rationality, completeness, soundness and efficacy of objectives, programmes, structures, systems, processes, procedures and codes.

The expected qualities of a good public officer based on the above definitions are those that practice impartiality, punctuality at work, commitment to duty, follows the rules and regulations of the ministry in which he/she works. All the above are manifestation of organizational culture for they tell what the organization stands for and what the individual within the organization hold dear to their heart and perception in day to day work environment. Robbins (1995), in the further attempts to example the meaning of culture looked at the time orientation as a concept in day life and possesses the question does culture focus on past, present or future?. He observes that the society differs in value they place on time; for example western cultures perceive time as a scarce resource that must be used efficiently (*Ibid*, 1995).

By changing an organisational culture, it is possible to attain improvement in the organizational performance. Managing construction projects is about harnessing the various culture forces at play on construction projects to the benefit of projects, and hence clients, in meeting their objectives (Walker, 2007). It is argued that the design, development and construction of projects need contribution from different organizational cultures, therefore project managers need to understand the different cultures present in the projects so that they can harness them and not fight them.

According to Barbara Senior *et al* (2010), culture consists of patterned ways of thinking, feeling and reacting, acquired and transmitted mainly by symbols, constituting the distinctive achievements of human groups, including their embodiment in artefact; the essential core of culture consists of tradition ideas and especially their attached values. This means that the culture of an organisation like MoPW is its customary and traditional way of thinking and of doing things, which is shared to a greater or lesser degree by all its members, and which new members must learn, and at least partially accept, in order to be accepted into service in the firm. Culture in this sense covers a wide range of behaviour, the methods of production, job skills and technical knowledge, attitudes towards discipline and punishment, the customs and habits of managerial behaviour, the objective of the concern, its way of doing business, the methods of payment, the values placed on different types of work, beliefs in democratic living and joint consultation and the less conscious conventions and taboos.

The top level managers of the Ministry form the core group should shares the vision and mission of the Ministry. They are in actual the prime movers in creating the organisation's culture, bad or good. As new members join the organisation, they pick up the attitude and practices that have already been established such as lack of commitment to work, negligence, non-professionalism, lateness and absenteeism, etc. Gray *et al* (2008) reckons that top managers serve as exemplars of culture of organization and that members look to them as role models to be emulated and studied to determine the qualities that is truly important to the organisation. They are responsible for observing organisational rituals which are defined *as formal and customary repeated acts that convey basic norms and values through the organization.*

These negative attitudes lead to poor performance and are typical of not only the Ministry of Public Works but the entire public service as evidence by the annual ranking of ministries' performance management which ranked the Ministry at 68% (Republic of Kenya, 2006). Late project completion caused by lack of details during project implementation and failing to certify payments within the stipulated time are as a result of laxity on the part of the project officers.

2.6 Performance Contract by Technical Staff

In order to improve efficiency of service delivery to the public, the Government of Kenya has undertaken several reforms in the Public Sector. In the Second Phase of the Public

Service Reform Programme, one of the major milestones of the referred agenda was rationalization of core activities and was immediately followed by performance contracting in 2003 (Republic of Kenya, 2009).

A performance contract is an agreement between two parties namely the Government and a senior employee that unequivocally sets out their mutual performance obligations and responsibilities. The object of performance contracting in the Public Service include, among others, improving service delivery to the public by ensuring that top managers are made accountable for their results, and ensuring that resources are focused on attainments of the key national policy priorities of the Government.

The Government employs performance improvement tools namely, the Performance Contracting and Performance Appraisal System as management tools for increasing output, efficiency and effectiveness in the delivery of quality public service. Performance Contracting establishes clarity and concerns on priorities of each Ministries operations to meet its mandate as well as achieve the Kenya Vision 2030 aspirations as contained in Ministry of State for Public Service's Strategic Plan 2008-2012 (Republic of Kenya 2008). The use of Performance Appraisal System (PAS) is to measure and evaluate the performance of the public service technical staff and other staff in the Ministry of Public Works, just like in other ministries, in terms of quality, quantity, cost and time will certainly improve on project performance with regard to improved completion rate and less cost overrun and to customer's satisfaction.

The heads of professional Departments within all Ministries signs annual performance contracts with the Permanent Secretary in charge of the Ministry who is also the Accounting Officer who is responsible for overseeing the implementation of government programmes and project within the Ministry. One of the major work assignment for the Departmental captured within the Performance Contract is the number of projects implemented by the Ministry annually and the goals of each Department. Based on the performance contract between the Permanent Secretary and the Head of Technical Department, the latter then sets targets for those technical officers below them and these are recorded in the Performance Appraisal Forms (Form 247 Revised 2008) and are reviewed quarterly to check if the individual officers met their targets such as bills of quantities, designs done per quarter, the number of certificates and final accounts prepared issued amongst others (*Ibid*, 2008).

The PAS has rewards and sanctions, which certainly is more of scientific approach to management as espoused by Taylor the father of Scientific Management and supported by Douglas Mc Gregory's Theory X, which proposes, among others, that to induce adequate effort and result, the supervisor must threaten punishment and exercise careful supervision (Kerzner, 2000) and therefore human aspects of the job are ignored or take backseat.

It means that most public managers/technicians exercise authoritarian – type control over the other team members and allows minimal participation during decision making. The situation is same for both the junior technical staff in the Ministry and the consultants employed by the other clients' ministries by superintended upon by the Project Managers within the Ministry. The tight control and supervision by the Ministry's senior managers kills creativity on the part of professional consultants and can lower their outputs as they are not motivated to exercise their professional knowledge fully. The result of such kind of approach to leadership and management in general is the separation of work task from any thinking process by the individual which has the downside of professionals being alienated from the tasks they are performing and having no real input in the conversion process to achieve the product. The alienation may be passive in the form of losing interest in the process (Smith, 2004).

It is however not stated anywhere how the technical officers should lead those below them to achieve the departmental objectives. The appraisal forms fails on how the officers should be motivated towards achieving the set objects despite having elaborate systems of monitoring.

2.7 Procurement of Consultants in the Building Sub-Sector

The Ministry of Public Works' mission is *to facilitate the construction and maintenance of quality buildings for socio-economic development.* In order to attain this objective the ministry uses private consultants to boost its capacity in the supervision and management of public projects by outsourcing the services to privately practicing firms either individually or as consortium. The range of supervisory services offered by professionals are Architectural, Quantity Surveying, Engineering (civil, structural, electrical and mechanical building services) services and environmental management.

The Ministry has a database of qualified consultant's who are registered under Cap 525 or Cap 530. Clause 31(1) (a)-(b) states that a person is qualified to be awarded a contract for procurement (of goods/services) only if he/she has among others, the necessary qualifications, capacity, experience, resources, equipment and facilities necessary for the

procurement requirements and that the person has the legal capacity to enter into a contract with the procuring entity. The Ministry keeps register of all qualified consulting firms and registered professionals in the field of Architecture, Quantity Surveying, etc. In order to maintain professionalism, the ministry in consultation with the BORAQ organises for at least two continuous professional development courses annually to keep the technical officers abreast of the technological developments within the construction industry. Similarly, the ERB together with IEK keep record of qualified and registered engineers and who possess current practicing certificate.

The current practice in the Ministry for procurement of professional services is the use of request for proposals as stipulated in clauses 76(1) - 83(1) of the Public Procurement and Disposal Act, 2005. The notice for request for proposals is advertised in the printed media in at least two daily Newspapers of nationwide circulation as "Expression of Interest" stating the name and address of the procuring entity, a brief description of services to be procured, the qualification necessary of persons to be invited to submit a proposal and an explanation of where and when (date, time) to submit the expression of interest (Republic of Kenya, 2005 & 2006).

The expression of interests are examined to determine if the persons or firms submitting their requests are qualified to be invited to submit proposals in accordance with the notice inviting expression of interest. Clause 81(1) states that the procuring entity shall give each person who has been pre-qualified to be invited to submit a proposal a request for proposals and copy of the terms of reference which shall contain amongst others, the name and address of the procuring entity, instruction for the preparation and submission of proposals which include technical, and financial proposals and the procedures and criteria for the evaluation (*Ibid*, 2005).

The request for proposals submitted by the prequalified firms are evaluated by an evaluation committee appointed by the head of the procuring entity in accordance with clause 16(1) – (9) of the Public Procurement and Regulations 2006. The evaluation committee makes recommendation to the Tender committee of the Procuring entity who assess the recommendation and awards the consultancy to the winning bidder(s). The winning bidder signs the contract after the expiry of twenty (21) days notice for appeal. The whole process of procurement of consultancy services is designed to promote competition, fairness economy and efficiency. The whole process is therefore a quality assurance in itself.

According to Kohli (2008) the management of an organisation must focus on both the quality of the production in the project and the quality of the process relating to the management of the project which basically covers feasibility studies to close-out. The total project management entails, management of both product quality management processes and project management processes that include management of procurement and Disposal Act 2005 and the Regulations of 2006, together with the Ministry of Public Works General Specifications and Kenya Bureau of Standard spells out the quality process in Public building process. The requirement of occupational health and environment are covered under the Factory Act Cap 514 and the environmental Management and Coordination Act, 1999 and these takes precedence over contract conditions, whether for buildings or roads. Clause 74 also allows for direct procurement of consultancy services (Republic of Kenya, 2005). Successful bidder may be chosen as an individual firm or as consortium and does work under the supervision of the Ministry of Public Works. The consultants are paid in accordance with the Conditions of Engagement and Scale of Fees for Professional Services for Building and Civil Engineering Works (1989 Edition) issued by the Ministry of Public Works (*Ibid*, 1989).

2.8 Procurement of Contractors in the Building sub-Sector

The procurement of contractors for public projects is done in accordance with Public Procurement and Disposal Act (2005) and the regulations of 2006. Normally, the contractors are procured in accordance with Clause 50 (for open tendering), Clause 73 (for restricted tendering) and Clause 74 (for direct procurement). For national jobs, an advertisement is normally put in at least two national newspapers, giving a minimum of 21 days for national projects and 28 days for international projects. Section 86 on International completion states that the notice must be in English and that the procuring entity shall also advertise the notice inviting expressions of interest in one or more English – language newspaper or other publication's that have sufficient circulation outside Kenya to allow effective competition for the procurement. Restricted tender is normally used for small scale projects whose sum is less than Kshs. 5,000,000.00 (clause 73(2) (a) in the event that due to complex or specialised nature of goods, works or services is limited to prequalified contractors or if the time and cost required to examine and evaluate a large number of tenders would be disproportionate to the value of goods, works or services to be procured as per clause 73(2) (b).

The Ministry of Public Works is responsible for registering Building, Civil Engineering and Specialist contractors and keeping register of the contractors to ensure that they comply with the registration status at all times. The contractors are graded as in Tables 2.2 and 2.3 below:

The grading criteria include Certificate of Registration from the Registrar of Companies as a limited liability company, partnership or sole proprietor, minimum technical qualifications and skills, financial resources, equipment and plant, qualified personnel, VAT Registration and Tax Compliance Certificates.

Table 2.1 – General Building Works

Category	Value Limit (in Kshs.)
A	Unlimited
B	Upto Kshs. 250,000,000
C	Upto Kshs. 150,000,000
D	Upto Kshs. 100,000,000
E	Upto Kshs. 50,000,000
F	Upto Kshs. 20,000,000
G	Upto Kshs. 10,000,000
H	Upto Kshs. 5,000,000

Source: Ministry of Pubic Work's Contractor's Register (2010)

Table 2.2 – Specialist Contractors

Category	Value Limit (in Kshs.)
A	Unlimited
B	Upto Kshs. 50,000,000
C	Upto Kshs. 30,000,000
D	Upto Kshs. 20,000,000
E	Upto Kshs. 10,000,000
F	Upto Kshs. 4,000,000
G	Upto Kshs. 2,000,000
H	Upto Kshs. 1,000,000

Source: MoPW's Contractor's Register (2010)

When advertising for major projects most of the conditions for registration are spelt in the advertisement. The advertisement in Appendix 5 is an extract from a newspaper of one public project. Despite all these rigorous registration criteria and detailed procurement process, public projects still do not do well in Kenya just like in other developing countries. One would therefore not expect the qualification or lack thereof contractors to be a cause of delay in the completion of projects.

2.9 Information Management within the Industry

By definition information is a collection of processed data/facts/knowledge used for decision-making. According to Westland (2001) a fact is something that has occurred in the real world and can also be verified whereas data are facts obtained through empirical research or observations. Knowledge represents facts or data gathered in any way and stood for future use. Knowledge is a body of well-confirmed law-like generalization which relate data to the environment.

Information is very important in decision-making in the construction industry right from conception stage of a project to commissioning and even beyond and therefore covers the whole project life-cycle. Information is only useful when it is communicated. Communication therefore plays a very important role in the transformation of information. It

has been referred to as the life-blood of an organisation. Information is vital for affective functioning of an organisation. It forms the basis for making decision and stimulates action. It has also to be communicated timely in order to be useful. Communication in the construction industry is generally through the drawings/details, specifications, bills of quantities, site instructions, variation orders, minutes of management/site meetings, e-mails and letters. Any communication from the project manager to the contractor must be copied to the other team members for information and necessary actions.

Every project must have a communication plan which is one of the requirements of project governance tools. According to Garland (2009) project governance is the framework within which project decisions are made and is therefore a critical success for the delivery of a project. The communication plan helps to ensure that all the project stakeholders and inputs/ recourses are put to use and/or working towards common project objectives.

The sources of information in the construction industry are the Client/Employer, the design team which comprise the architect, the quantity surveyor and the services engineers, the Contractor (Main)/Sub-contracts, Joint Building Council (1999) Contract Form, FIDIC Form of Contract, Joint Building Council (JBC) price list, Institute of Quantity Surveyors of Kenya (iQSK), Cost Planning Unit (Ministry of Public Works),Kenya Bureau of Standards (Kebs), Chief Mechanical and Transport Engineer (Ministry of Roads), Material and Testing Department (Ministry of Roads), Kenya National Bureau of Statistics, Manufactures and major suppliers of construction materials and products.

2.10 Contract Administration

Pre-contract Activities

As the name implies, these are project activities that are undertaken prior to the execution of the contract for the development works or project. A development project is defined in the BOOM (Republic of Kenya, 1974) as an item of building or construction work which includes labour, material, equipment and installed equipment that will become an essential part of new or additions to works or buildings, alterations resulting in a change or restriction in the future use or function of a works or building such as alterations to structural systems and changes in plan or profile and restoration or improvements when the cost of the project by reason of the introduction of improved materials will exceed by 25 per cent of the cost of

restoration to as-built condition with materials similar to those previously incorporated in the works or building.

A development project undergoes several stages before the actual construction starts. According to Seeley (1997) the various phases of the building processes within the pre-contract are inception, feasibility studies, scheme design, Detail design, production drawing and tender action. At the inception the Client ministry referred to as the Procuring Entity (PPOA document, 2006) identifies the need for the development projects or facility and ascertains that the implementation is feasible. A rough estimate is made of all the major components of the building together with anticipated price escalation. Treasury approval is obtained and a sum necessary for the financing of the total estimate cost is set. According to BOOM(1974) responsibility for approval in principal for a development project to be undertaken by the MoPW on behalf of client ministry rests with accounting Officer of the Ministry concerned or the Chief Executive of the Government agency involved.

Post-Contract Activities

The aspect covered here is contract administration. This includes handing over the site to the contractor after having agreed on the commencement date. The first action by the project manager is to hand the site over to the contractor on behalf of the employer as stipulated in Clause 14.1 of the PPOA contract document. He/she is then required to issue the main contractor with the drawings and copy of priced bills of quantities and two copies of unpriced BQs.

The post contract activities can broadly be divided into three (3) parts mapped along the contract period. The first part occurs during the first week of the contract period. The activities in this period include site handing over (Site possession) where commencement and anticipated completion dates are confirmed, issuing of site project management documents to the contractor which include working drawings and BQs as outlined above.

The second part occurs continuously after the first week where several activities take place namely contractor's undertaking of the works as defined in the BQs/specifications and shown in the contract drawings and monthly applications by the contractor to the Project Manager for payment of work done and materials on site. According to Clause 23.1 of the PPOA contract document *"the contractor shall submit to the Project Manager monthly applications for payment giving sufficient details of the work done and material on site which the*

contractor considers to be entitled to. The project manager shall check the monthly application and certify the amount to be paid to the contractor within 14 days". Clause 23.3 states in part "the *employer shall pay the contractor the amounts certified by the Project Manager within 30 days of the issue of each certificate. If the Employer makes a late payment, the contractor shall be paid simple interest on the late payment in the next payment, calculated on the basis of the number of days delayed at a rate of three percentage points above the Central Bank of Kenya's average rate for base lending prevailing as at the first day the payment becomes overdue"* (Republic of Kenya, 2006).

The Project Manager evaluates the application and prepares the necessary payment vouchers. The project manager carries out the certification exercise within fourteen days and forward the same to the client/Ministry or organisation for payment within 30 days. The period between the dates of application and the honouring of payment certificate by the contractor is 44 days. The contractor is entitled to levy interest on delayed payment at a rate of 3% higher than the Central Bank lending rate. The payment certificate comprises F.0.20 (voucher), Forms MoW 123, MoW 121, with attachments and MoW 125. The Mow 125 and attachments are signed by the project QS., the Project Engineer and the payment voucher F. O. 20 is signed by the team leader (Engineer), Quantity Surveyor and Architect and then returned to the Project Manager who together with the contractor signs MoW 123 (or 124 in the case of final account). The final signatory is the Chief Quantity Surveyor who signs and releases the payment voucher to the client ministry (Republic of Kenya, 2008).

Further duties of the PM includes preparing and submitting of periodic financial (monthly/ quarterly) appraisal to the client Ministry or organization, regular site inspections, monthly project management meetings, regular design team meetings.

The final part of post-contract period is completion stage of the project which includes Final inspection, issuance of Practical Completion Certificate and Preparation of Penultimate Certificate (if applicable), handing over of the completed project to the Client/user and the issuing of Handing Over Certificate, release of performance bond, release of the first moiety of retention and the commencement of Defects Liability period, preparation and release of Final Account within three months, issuing of Schedule of Defects list to the Contractor towards the end of the sixth month and issuing of Certificate of Making Good Defects and release of last moiety of retention.

2.11 Projects Leadership

2.11.1 Leadership in Public Building Projects

Every organisation or institution requires the presence of a leader to enable it achieve her goals and targets and thus realize her vision. According to Kolhi, *et al* (2008) managing processes in a project by optimising resources alone is not enough and adds that it is leadership that creates a vision, integrates the tasks, teams and people , gives direction, motivates individuals and work groups, communicates effectively to influence organizational behaviour and ensures customer satisfaction. The Ministry of Public Works is no exception and because of the heavy investment handled by the Ministry, effective leadership becomes mandatory to realise her vision of being the *leading institution in the construction and maintenance of government buildings and other public works.* The leader is responsible for directing, controlling and communicating project ideas to all the other team members in a timely and qualitative manner.

In the Ministry of Public Works the project leader is by default the Chief Architect or any other person appointed by the Works Secretary to perform those duties. The other members are team members who are drawn from the other functional departments and who still report directly to their Department Heads. This happens after the brief has been passed to the Chief Architect by the client ministry (Republic of Kenya, 1974).

Walker (2007) in an attempt to answer the question "what then are the qualities which a project manager should possess to be a good leader" characterizes the quality into characteristics and skills. He goes on to list the characteristics as integrity, preferred leadership skill, self-confidence, ability to delegate and trust others, ability to cope with stress, decisiveness, positive thinking, determination , personal motivation, etc and in terms of skill as persuasive ability, negotiation, breadth of vision, ability to set clear objectives, communicating skills, management of meetings and integrative skills amongst others. These call for a mandatory requirement that apart from academics and experience public service project managers must have most if not all the above qualities to be able to make use of the resources efficiently and effectively.

The need for changes in management styles, a well motivated and flexible workforce should be a mark of the service ethos. It is this context that the sectors well-defined policy priority, core functions and effective leadership are so important. Since the sector implement a

multidimensional programme of interdependent and interlocking component with heavy presence of many stakeholders therefore requires systematically coordinated, sequenced and driven by a common vision goals and sense of purpose. This therefore requires the presence of effective leadership to undertake service delivery surveys, develop service standards and bench marks.

Mostly important, effective leadership demands that team members provide their ideas on the direction, objectives and strategies (Smith, 2004). *Ibid* (2004) argues that management is a crucial function in ensuring that short term quality results or targets are delivered but good leadership is required for achieving change and keeping up the momentum of first class performance in the long run. He observes in general that management skills appear to be stronger than leadership attributes for professionals, the rationale being that for many professionals, the combination of temperament and training seems to equip them to cope more easily and successfully with technical work and management responsibilities than with leadership challenges. By appointing a professional Architect as the project manager with no training in project management is a mistake since professionals in Kenya are no exception with those from other countries of the world.

Since management in public projects (consultants' side) involves integration of the works of the Architect and the other professionals namely: the Quantity Surveyor, the Electrical, Mechanical and Structural Engineers, it means that leadership in public building projects must talk cognizance of inter-relationship among those who should strive to meet the genuine needs and expectation of the team by performing the expected functions of leading, directing, planning, organizing and communicating (D' Souza, 2006). According to Maylor (1999) on the role of leadership and management in public project, the generic ideas concerning project management are deconstructed into their main components which comprises management made mainly of technical team of discipline personnel meant to apply and administer authority over others through formalized structural arrangement of the organization. Management in this sense is enhanced through effective leadership geared toward obtaining quality results from others through personal influence; such individuals should have individual skills and attitudes which enables them to coordinate huge volume of resources and large numbers of stakeholders.

According to Smith (2004) professionals are frequently reluctant to take on a leadership role

with some believing that they cannot make a difference and others enjoying being designers, lawyers, teachers and accountants as that is the career for which they are trained and hence leadership role would be a distraction. Some believe that if they become team leaders they would begin to lose touch with their professional work, become out of date and risk career damage. This is particularly true in Public Works where the team leader's function as the project manager and the architect simultaneously, responsible for directing himself and others. The appointing authority in Public Works who is by default the Works Secretary or the Chief Architect or Chief Engineer (Structural/Electrical/Mechanical) on behalf, should therefore take cognizance of the personality in appointment of the project manager bearing in mind that having well-led, highly competent and motivated professional team working towards common objectives brings considerable efficiency.

Because of the nature of professional work and of professional people, leadership in projects requires considerable sensitivity in handling the team especially in MoPW where the leaders have little power or authority by virtue of their positions alone; they are largely leading and managing peers and colleagues who may be of better qualifications rather than subordinates. Public Works managers such as the Team and Group Leaders must take note of the advice that *Leadership is service, in the sense that it seeks to meet the needs of another or of the group by performing needed functions. Sometimes strong directive power is effective leadership, such as when a group has lost its sense of direction or purpose; with another group, or at another time when the group is functioning well in its relationships and has its directions clear, non-directive styles of leadership are needed. Sometimes the group needs to be encouraged and supported; at other times it may need to be reoriented* (D'Souza, 2006) in order to be able to achieve the organizational goals and departmental objectives as spelt out in the ministry's Strategic Plan (2007-2012) and amplified by the performance contracts (Republic of Kenya, 2007).

For one to be an effective leader he/she must possess, in addition to his/her competencies (i.e. knowledge, skills or abilities to do the job), position power and experience, the core skills of management namely time management skills which allows him to do the right things at the right time, leadership and team building skills in organizing and motivating the team members. In organizing process, the leader defines the appropriate job structures, establishes performance targets and responsibilities, delegates authority that commensurate with responsibilities, communication skills to allow the leader to share the with the team members and create unity of purpose, and customer care.

2.11.2 Motivation of Project Team Members

The project manager as the leader of the project team has to realize the project objectives through the team members. The project manager functions within the boundaries of a socio-technical system where most of the factors such as organisational structure, technical requirements and competencies of project personnel are more or less predetermined. The only principal behavioural factor which he can influence is the motivation of the project team members (Chandra, 2000). Motivation is the cost of getting the team members from the various technical competencies to execute willingly and well those tasks that need to be done. In the public sector project, the only motivating factors are project allowances in terms of an uncounted night-outs and air-time which according to Herzberg is a hygiene factor.

A stimulating and satisfying nature of project work or assignment would be an ideal motivating work coupled with future recommendation from the functional manager for promotion. Within the establishment of the Ministry, many professionals and supervisory personnel find it difficult to visualize how their individual effort at project level contributes to the realisation of organisational goals.

Project team members being mostly drawn from Job Groups K to P are separated from top management (Job Groups S-T) by several layers within the organizational hierarchy and are therefore not very able to relate the work output to the mission of the ministry namely to facilitate the construction and maintenance of quality building so as to achieve socio-economic goals. Even though no research has been undertaken, it is here inferred that in a project setting, where the super ordinate goals are clearly defined and visibly conceivable to all the team members, there is usually more emphasis on participatory style of management.

One way to have the group performing is to turn it into an effective group consisting of members who are satisfied and committed and who strive for the attainment of project objectives, without dissipating their energies in interpersonal and intergroup conflict (Chandra, 2000). This means that once the team members have been nominated by the Department heads to project and the project manager named, it becomes incumbent upon the project manager to ensure that he inspires and motivate the professional service teams and turn them into an effective one. Effective groups manifest the following characteristic namely *espirit de corps*, pride in the project, supportive behaviour, coordinated endeavour, mutual respect and resilience during trying periods (*Ibid,* 2000).

A good leaders cope effectively with management basics, has the necessary skills in communicating and enthusing team members about the agreed direction, objectives and get

the team to work together harmoniously by or with manageable conflicts, secure agreement on key issues and inspire by example.

Mostly important, according to Smith (2004), effective leadership demands that team members provide their ideas on the direction, objectives and strategies. Smith (2004) further argues that management is a crucial function in ensuring that short term quality results or targets are delivered but good leadership for achieving change and keeping up the momentum of first class performance in the long run is vital. A problem for the manager of human resources is that two different concerns have to be reconciled here namely the requirements of the organization in terms of productivity and efficiency which are likely to result in people being viewed as instruments of production but who, through their efforts, are able to enjoy a satisfaction that is not directly associated with financial or material gain, but with enjoyment arising from undertaking the work itself (Loosemore *et al,* 2003).

Since no single theory explains motivation, individual project leaders should therefore realize that the factors that generally affect motivation vary with the time and prevailing circumstances which may be psychological or physiological. According to Chandra (2000), the workers' attitudes tend to chance with time and circumstances, and are significantly influenced by their peers and superiors. The leader should note that human beings are motivated by a variety of needs which may be physiological needs, social needs, recognition needs and self-actualization needs. Individuals differ greatly in the importance they attach to various need satisfactions.

Motivation tends to be strong when the goal set is challenging, yet attainable as espoused by Goal-Setting Theory (Robbins, 1995). If the goal is too demanding, it results in frustration and conflict; if too lax, it induces complacency.

Expectation or reward, rather than fear of punishment, has a greater bearing on individual behaviour. Further, the effectiveness of reward or punishment depends on how quickly it is administered.

In a project setting where hygiene factors (like pay, physical working conditions, etc.) are reasonably taken care of, the principal motivators would be a sense of accomplishment and professional growth. In this setting, the project manager should rely more on participative methods of management.

In order to succeed in motivating personnel, the project manager must be a perceptive observer of human being, must have ability to appreciate the variable needs of human beings,

must have skill in several styles of management suitable to different situations, and must be sensitive to the reactions of people so that he can act supportively rather than threateningly.

2.12 Public Building Projects Financing

Despite rapid progress made by many developing countries until 1980, public building construction sector due to poor conditions inherited at independence has continued to perform poorly (Ron, 1995). Kenya has not been spared the wrath of poor performance especially in Public construction industry (Republic of Kenya, 2002). According to Bhatia (2003), India like Kenya, suffered from insufficient generation of internal resources and depended on public revenues to meet their cost of operation when external funds were dwindling. This was not been forth coming especially when political motives continued to dominate aid programs. This causes considerable instability in financial flows. Ron (1995) further noted that financial aid to the sector started declining as early as 1960 due to geo-political reasons and often the term and conditions of financing have adversely affected the overall development of public construction industry.

ibid (1995) shows that the discontinuity and unpredictability of external aid that the sector depends on has caused a lot of set back as the industry is often forced to cut short projects with several policy adjustments in the basic infrastructure.

John (1975) however advised that the sector should try to check the instability in bilateral assistance through local cash flow and seeking further assistance from other multinational agencies to complete the un-financed public projects and programs. However this process has always faced complication from multinational institutions.

In Latin America and other developing countries Kenya included, commercial capital cash flows too have often been volatile and their instability has affected the sector. In the early 1970 commercial institutions loaned indiscriminately to public projects of questionable quality and made huge losses. Private Banks have since been reluctant to lend to most public projects despite relatively sound economic reforms and management undertaken (Bhahatia, 1986).

Funding in the construction industry has also suffered a great deal as the main funding agencies for the developing countries have undergone substantial changes in development

objectives. As Ron (1995) remarks, donors have shifted focus with big swings on the development of vulnerable policy reforms. The shifts in focus reflect several factors. It often takes time to establish a consensus on policy theme with the donors in the industry. This often causes draw back in the industry when the government is still trying to establish the consensus.

In Kenya, the share of development expenditure in the total expenditure had been on a long-term declining trend till the year 2001-2002 but went up in 2002-2003 to more than 16% (from 11% in 2001-2002) according to National Development Plan, 2002/2003 (Republic of Kenya, 2003). Most of the increases were financed by external assistance and accumulation of arrears. The share of GoK-financed development expenditure has been around 5% of the total expenditure (about 30-40% of the expenditure). Development expenditure exhibits a higher degree of variability across the year. This scenario can perhaps be attributed to the high level of donor dependency of development budget and greater government discretion in this area, resulting in expenditure cuts.

According to BOOM, 1974 the Treasury is responsible for approving the expenditure incurred by all government ministries and that the Ministry of Public Works cannot proceed with the design of any building which has not been approved by the Treasury.

According to the Government Financial Management Act 2004 Section 4(c), the Treasury shall superintend the expenditure of Government money to ensure that it can be properly accounted for as voted and Section 6(d) says no expenditure involving a charge on Consolidated Fund shall be incurred without the general or specific authority of the Treasury. What this means is that all Government projects must be approved by the Treasury prior to commencement. If say, a project is estimated to Kshs. 250,000,000/= and is supposed to take two years and the Treasury allocated Kshs. 150,000,000/= and Kshs. 100,000,000 in the commencement year and subsequent year respectively, the project manager cannot spend more than the allocated Kshs. 150,000,000/= in the first year. Budget releases are not predictable and payments are delayed resulting in high arrears coupled with the fact that cash commitments control is still poor in Kenya (Republic of Kenya, 2008) thus occasioning increase in pending bills and forms origin for contractual claims when contractors certificate cannot be paid with the contract provision of 44 days upon submitting an application as stipulated in PPOA contract form Clause 23 (*Ibid,* 2006).

2.12.1 Government Financial Management

The Constitution of Kenya (being now replaced) and the Financial Management Act 2004 are the major instruments that stipulate how Government funds are collected and utilized for both the Recurrent and Development programmes and/ or projects.

2.12.2 Sources of Government Revenue

The Government Revenues refer to all monies receiveable by the Government for the purpose of financing its services and the implementation of development programmes. The receipts are collectable under the items of estimates specified by the Treasury as revenue items and included in the revenue proposals which are presented in the annual budgets.

The normal revenue sources are taxes, fees and charges, interest on investments and loans, dividends and profits of trading services, proceeds of loans, grants and Government stock issues.

The Government revenues are classified into Recurrent and Development Revenues and Appropriation in Aid in conformity with the annual operating and development expenditure budgets. The recurrent revenue refers to finances needed to pay for the operating costs of running the services of the government and Development Revenue refers to the finances needed for implementation of development programmes and projects and are mainly obtained from internal and external sources through grants, loans and Government stock and bond issues.

2.12.3 Authority and Control of Government Funds

The authority for raising revenue or other monies and their appropriations for the purpose of the Government of Kenya is vested with the Parliament. The Treasury, which is here defined as the Minister for the time being responsible for matters relating to finance, and such other officer or officers of his Ministry as may be deputed by him to exercise and perform on behalf of the Treasury any powers of duty conferred or imposed on the Treasury by any written law is responsible for the control and management of those finances after their appropriations by Parliament (Republic of Kenya, 1968 & 2004)..

Each withdrawal of funds from the Consolidated Fund must be approved by the Controller and Auditor General After he is satisfied that the proposed withdrawal is authorized by Law.

2.12.4 The Role of Parliament

All revenue or other moneys raised or received for the purpose of the Government of Kenya are paid into a firm Consolidated Fund from which no moneys is withdrawn except as authorized by the Constitution or an Act of Parliament including an Appropriation Act or by a vote on account passed by the National Assembly. Parliament approves the Government annual estimates and authorizes appropriation of funds under section 99(1) of the Constitution of Kenya which states all revenue or other monies raised or received for the purposes of the Government of Kenya shall be paid into and from a consolidated fund from which no monies shall be withdrawn except as may be authorized by the Constitution or by an Act of Parliament (including an Appropriation Act) or by a vote on account passed by the National Assembly under Section 101 (Republic of Kenya, 1968).

2.13 Ministry of Public Works Project Funds Management

Government developments are generally funded through the consolidated funds service. The development programmes for every ministry is put into a budget and upon the approval of the budget treasury releases are made on quarterly basis for every ministry development project. If a ministry has five projects, the funds for the project come in the form of Authority to Incur Expenditure upon two halves per every financial year. From these treasury releases Exchequer to the relevant ministry which in turn pays for the certificate which are due under the contract which the ministries are undertaking. It therefore means that no development project has dedicated funds that are directed to one particular or individual project.

The opportunity of development funds to a project therefore is not structured but depends on the whims of the Principal Accounts Controller who is the ministries paymaster. According to clause of the PPOA Form of Contract, the contractor is entitled to be paid within a period of one month upon certification of the works. Hardly do we find this happen in the public sector. Clause 26 allows the contractor to charge interest on delayed payment at a rate of 3% higher than the Central Bank's lending rate (Republic of Kenya, 2006).

The Project Manager in a public project does not have control over the project funds. They can only control site operations within the conditions of contract (Winch, 2005) which is the situation for public construction projects. The powers bestowed on the project manager by the project document are basically advisory to the clients. It means poor funding or late payment certificates make a project not realise its goals namely completion within the budget

and at the stipulated time. According to Austen, *et al* (1984), the project manager often has control by persuasion rather than by direct exercise of authority. He has control over quality but not on payment. Delay in honouring certificates by the employer/procuring entity which makes the contract time be extended is out of the Project Manager's jurisdiction. He has to refer anything outside the contract price to the procurement entity in accordance with Clause 10 Section 2(m), (Republic of Kenya, 2006).

2.14 Risks in the Public Building Construction Industry

Public building projects have a number of risks associated with it such as pricing cost, time overran and failure to meet expectations which therefore calls for sound project risk management. The situation is complicated given that buildings projects are one-off undertaking and therefore very little learning takes place. Gichunge (2000) concluded that the most serious source of cost and time risk in building projects during construction is variations.

The major risks common in the construction industry in Kenya are project development and formulation risks, design risks, pricing risks, political risks, health risks, economic risks, environmental risks, claims-contractual and *ex-gratia* court and arbitration cases, financial-pending/interest on delayed payment and uncertainty in funding. The above risks give rise to cost and time overruns and hence unsatisfactory project outcome.

According to Flanagan, *et al* (1993) public building construction is overwhelmed with a number of typical risks and effects. Such risks include failure to complete within the stipulated design and construction time, failure to obtain the expected outline planning, detailed planning or building code/regulation approvals within the time allowed in the design programme, unforeseen adverse ground conditions delaying the project. The industry suffers from uncertainties of weather and hazards such as floods, earthquake that often causes delay of the project, unexpected price rise for labour and materials and occasional strike by the labour force, *force majeure* (flood, earthquake, etc.) and claims from the contractor for loss. Failure to complete the project within the client's budget allowance and expense caused by the late production of design details by the design team, amongst others, are risks effects of risks that causes major draw back in the industry.

As noted from Barrie, *et al* (1992), construction industry projects are unique and differ from other projects in a number of ways since they involves a large quantity of resources; take a lot of time and are site-specific. Furthermore, they are handled by a multi-disciplinary team or organisation. This therefore demands for proper management tools and skills. Such tools and skills should be forward looking, anticipating any potential impediments/risks that can impact on the achievement of strategic objectives and proposing appropriate risks mitigation measure.

With proper management tools in place coupled with proper leadership and or stewardship to take the right decisions in uncertain project environment and also establish per-emptive strategies to enhance capacity to realize project goals. Environmental analysis of the internal and external threats to a project is necessary before commencement of a project as it is a heuristic or exploratory process as it largely aims to explore the unknown terrain or aspect of the project. This is opposed to the monitoring of the aspects of the system which is chiefly concerned with the present as is the situation in public building. This also calls for high level of management competency in the analysis of the entire project environment with regards to its facets.

According to Kholi, *et al*, (2008) risk management begins with analysis of risk itself to enable greater certainty of achieving the project goals by making the project plan realistic, reducing cost surprises, minimizing losses and delay and enabling exploitation of beneficial opportunities. With the aid of risk analysis insight, risks within a project can be systematically measured, evaluated and approach to eliminate or reduce them are put in place in the process of work.

In public projects risk such as pricing risks, inflationary trends, inclement weather and other unforeseen circumstance are either covered by contingency sums or insurance policies. Risks such as details can be detailed with by the project manger exerxing his position poewrr to get result from the other team member.

Where risks can be transfer to the party with the ability to deal, the contract agreement provides for how it is to be dealt with. For example Clauses 28 and 30.1–30.6 of the PPOA Form of Contract for Building and Civil Engineering Works (Republic of Kenya, 2006) spells out clearly the Employer's and the contractor's risks and how they are dealt with during the post contract period upto practical completion. Clause 30.3 of PPOA document

states in part that the contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the start date to the end of the Defects Liability Period, in the amounts stated in the Appendix to Conditions of Contract for loss or damage to the works, plant and materials, loss or damage to the equipment, loss or damage to property and personal injury or death. The policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for his/her approval before the Commencement Date.

2.15 Theoretical Framework

2.15.1 Introduction

The theory of organisation forms the background of this study and explains how the Ministry of Public Works as an organisation is structured to carry out its mandate. According to Robbins (2004) organization theory is the discipline that studies the design and structure of the organization. It therefore refers to both the descriptive and prescriptive aspects of the discipline and in effect describes how the organization are actually structured and offers suggestions on how they can be constructed to improve their effectiveness. According to the theory organisations are open systems where there is input-output transformation systems that depend on their environment for survival. Organisation theory recognises that professional organisations are distinctive (Walker 2007).

Globally, any organisation as a system has two sub-systems: the formal and the informal. The formal system consists of the strategy, structure, systems and procedures, rules, the goals and the informal system which includes the leadership, the culture, values, attitudes and beliefs, power, politics (Barbara, 2010, Walker, 2007 and Robbins, 2004). Walker (2007) asserts that in construction project management, the major internal factors influencing the effectiveness of the management process are organisation structure, decision-making, techniques and technology and behaviour. These aspects are interrelated and interdependent. The project management process is also subject to external influences. These comprise all elements outside the process which, if they change, demand a response from the project management process if it is to remain effective.

Scott (1992) as cited by Walker (2007) reckons that " the most elaborate and intricate organizational arrangements yet devised for coping with high orders of complexity and uncertainty in production systems are to be found in the professional organizations' which

are inherent in public works projects.

The Ministry is an open system and a rational entity designed to achieve goals and therefore the behaviour of the organizational members or employees can be explained as the rational pursuits of those goals. Any organization interprets its environment, coordinate activities, and facilitate decision-making by processing information horizontally and vertically through a structural hierarchy (Robbins, 2004). Organizations are artificially created entities. Their goals and purposes are symbolically created and maintained by management. According to Griffith (1999) as cited by Griffith, et al (2004) a management system is a way of doing things and is therefore used to develop protocols and sets of procedures and intuitions which bring structure, order and therefore stability to an organisation where otherwise there might be chaos.

Project management can best be treated as a system. A system is a set of interrelated elements that work collectively to achieve some common objectives. It is an assemblage or a combination of things or parts, forming a complex unitary whole. The systems approach is viewed as a series of logical, interrelated processes/functions (sub-systems) that integrate all the necessary processes/functions to achieve its objectives (Kolhi, *et al*, 2008). The management system of an organization consists of the organisation subsystem, behavioural subsystem, technical subsystem and decision-making subsystem. The technical subsystem is defined by the technology required to undertake the task of the organisation and is represented by the skills, knowledge and equipment required and the way in which they have to be used. The behavioural subsystem is the attitudes and values of the members of the process. The organisation subsystem is the way in which they relate to each other and the decision-making subsystem is the mechanism through which the process moves forward (Walker, 2007).

A number of theories are presented herein to explain how organizations are structured for effectiveness and how leadership affects the performance of individuals and the organization for which they work and the construction industry's performance is no exception to the explanations provided by the theories. The theories are chronological presented from Classical to systems era and includes overview on some leadership and motivational theories.

The Classical Approach

The classical approach stems to management emanated by the work of Taylor (1911) and

Fayol (1949- translated.) and was the foundation of management practice up to about 1950, Taylor laid the foundation of 'scientific management' and according to the proponents of this theory it was possible to possible to scientifically analyse and structure the tasks to be performed so that the maximum output could be obtained with the minimum input. This approach meant that people were perceived as machines and efficiency was the sole criteria of success. The outcome of such an approach led to increasing specialisation of the workforce. Managers' activities were also seen to be governed by set processes and procedure as much as the workers.

Henry Fayol developed 'principles of management' which were concerned with such things as pyramidal structure, unity of command, line and staff, the scalar chain and span of control. The primary element was the pyramidal organisation structure and the idea that authority is delegated downwards. Division of labour was advocated so that the sub-goals of the various units would add upto overall organisational goals and co-ordination would be handled through the management hierarchy. The principles emphasised formalisation and specialisation and were in this way complementary to and supportive of Fredrick Taylor's scientific approach.

Walker (2007) and Barbara(2010) asserts that the classical approach to organisations and management was therefore seen essentially rigid and originated from military and church models which strongly influenced the way in which the early managers organised. The Theory did not take cognizance the effects of the human component and external influences on organization.

The Behavioural Approach

Recognition of informal organisation structures as a sub-system alongside the formal, and the shortcomings of classical organisational theory, saw the emergence of the behavioural schools, which believed that the study of management should be centred on interpersonal relations.

Informal structures exist alongside formal organisational structures because people cannot be treated as machines. Their behavioural responses to their position within a formal organisation cannot be expected to subscribe to the predetermined manner in which they are expected to perform.

The Socio-technical Approach

The Tavistock Institute of Human Relations, London, undertook a series of studies in the

1950s and 1960s which contributed significantly to the development of systems theory and its application to business organisations and the construction industry. They developed what at the time was a distinctive research approach in that they proposed that the unique feature of business organisations is that they are both social and technical systems. The socio-technical approach emphasises that the needs of both the technical and social aspects should be served by organisations

The Tavistock group undertook an important study of communications in the construction industry (Higgins & Jessop 1965; Tavistock Institute 1966) which identified the main features of the technical system as 'interdependency and un- certainty'. In terms of the social system they highlight the mismatch between the traditional organisational arrangement with the architect as designer/manager and the organisational separation of production undertaken by the construction company. Their report was the first to identify the need for someone in a separate project management role (Walker, 2007).

This argument is put here as it is a recurring issue in the application of organisational theory to construction projects. The needs of the management of the process and the needs of the management of the firms should in the first instance be considered separately but with the needs of the process taking precedence that the selection of organisational units can be taken in an informed manner.

The Systems Approach

Unlike the early theories the systems approach is essentially a way of thinking about complex processes so that the interrelationships of the parts and their influence upon the effectiveness of the total process can be better understood, analysed and improved.
According to Walker (2007) the appeal of the systems approach to the study of construction project organisations arises from its focus on how the parts of a process are dependent upon each other.

It is therefore clearly the case that the success of the construction process depends to a large extent upon the way in which the architect, engineer, quantity surveyor, contractors and others work together. It depends upon them perceiving the same objectives for the project and recognising that what each of them achieves depends upon what the others do. With this view they should be able to stand above the particular interests of their own contribution and see

the problem posed by the project as a whole. The advent of the project manager has, to a large degree, come about as a result of the inability of the contributors to consistently achieve this, and in response to the consequent need for someone to concentrate solely upon integrating the various contributors in the interests of the client.
On the other hand, an open system adapts to events and occurrences outside the system. These events and occurrences take place in what is known as the system's environment. This has been defined as a set of elements and their relative properties, which elements are not a part of the system but a change in any of which can produce a change in the state of the system (Ackoff 1971). An open system has a permeable boundary and there is import and export between an open system and its environment. It is therefore influencing and being influenced by its environment. An open system is dynamic and adapts to its environment by changing its structure and processes. Although stable, it is always changing and evolving and presents differences over time and in changing circumstances.

Construction process just any other business organisations is always been an open system. Potential clients exist within the environment of the construction process system and the system must adapt them. It imports ideas, energy, materials, information, etc. from its environment and transforms them into its output, which is the finished construction. This then exported to the environment, which is itself influenced by the use to which the completed project is put and by the fact that the construction is an addition to the nation's fixed capital.

Recognising the construction process as an open system means that the functions upon which the project management process should focus on the following five points: identifying, communicating and adapting the system's objectives, ensuring that the parts of the system are working effectively, ensuring that appropriate connections are established between the parts, activating the system so that the connections that have been established work effectively and relating the total system to its environment and adapting the system as required in response to changes in its environment. In practical terms the project manager will be concerned particularly with anticipating the chain reactions of decisions and developments that occur on the project.

General systems theory developed alongside the various schools of management thought and it had an attraction for management thinking as it presented an opportunity to converge these

strands of thought within an acceptable and theoretically sound framework with less rigidity and more recognition of interdependency in organisations than previous approaches allowed. The systems approach reflects the scale of interdependency created by the nature of activities to be undertaken (e.g. the design and construction of a building) and the effects upon the activities of environmental influences. It therefore discounts rigid approaches that propose one method for all circumstances. This is not to say that the systems approach discounts as irrelevant the ideas of classical management and the behavioural schools (as illustrated earlier in the brief discussion of hierarchies), which are still pervasive in practically all organisations today whether designed on the basis of the systems approach or not; but rather that it provides a framework for understanding and analysing organisations through their internal and external relationships, which places into context the earlier views of organisations.

Contingency Theory

The theory came through Lawrence and Lorsch's (1967) major study which led to the contingency of organisations design, which states that there is no one best way to organise but rather that organisation is a function of the nature of the task to be out and its environment. It encompassed many applications of systems to organisations. Lawrence and Lorsch found that different environments, generate different levels of uncertainty, require varying degrees of separation (differentiation) of organisational units (e.g. architect, engineer, contractor hence they require different degrees of integration.

Lawrence and Lorsch state that they that the amount of differentiation in the effective organisation was consistent with the environmental demand for the interdependence of the parts of organisations. In developing their contingency theory they state that this starting model is complicated as soon as we move to a complex, multi-unit organization in which each unit strives to cope with different parts of the environment al example, a construction project that is carried out in conditions of uncertainity and is technologically complex requires a wide range of specialist skills, are closely dependent upon each other, in achieving a successful outcome. As soon as this happens, it introduces the complication of integrating the work of different units. Lawrence and Lorsch see the existence of an integrating unit and conflict-resolution practices as contributing to the quality of integration and in turn to overall performance. This unit has come to be represented on construction projects by project

managers.

A number of other significant research studies building on systems theory led up to the contingency theory, for example, that by Burns and Stalker (1966) which analysed firms in the electronics industry and identified two patterns of organisations and management. The one they termed 'mechanistic' was similar to the classical model referred to earlier. The other, termed 'organic', had a participative character. The 'mechanistic' and 'organic' structures lie at the extremes of a spectrum which illustrates the range of approaches possible. Burns and Stalker did not suggest that either was superior to the other. They concluded that, when taken in context with the task and environment being considered, one pattern will be more appropriate for the specific tasks and environment in question.

Strategic Contingency

The strategic contingency approach adopts an open system approach as does contingency theory but it arrives at a different rationale for the structure of organisations. Contingency theory believes that managers have to respond to the environment of their organisations in designing organisations hence they are responsive to, and their actions determined by, the environment. Strategic contingency theorists believe that managers have choices (Child 1972) and although the environment may constrain their choices to some extent it does not d mine them. They recognise the role of power in determining the strategy to adopted. Following from this view is that, rather than being a function of task environment, organisation structures are determined by political contests with organisations (Pfeffer 1978) leading to a framework for the power-driven political explanation of organisational structure.

Resource Dependency

The resource dependency model also arises from the open system framework and can be seen to be associated with the strategic contingency approach as primary concern is the impact of external forces on how firms organise (Pfeffer & Salanick 1978). There are two major elements. One is that organisations constrained by and depend on other organisations that control resources which are critical to their operations and the other is that organisations attempt manage their dependencies on external groups to acquire more autonomy freedom. The resource dependency model sees managers making strategic cho' within constraints to reduce their dependencies, which illustrates the m similarity to the strategic contingency

approach. However, the model's view that managers do not have unbridled strategic choice as Child (1972) origin proposed in developing the strategic contingency approach but that they exercise some discretion over how to structure organisational relationships manage the uncertainties created by dependency which requires adjustment inter- and intra-organisational linkages as summarised by Greening and G (1994).

Scott (1992) believes that the resource dependency model means that organisational participants, particularly managers, scan the relevant environ searching for opportunities and threats, attempting to strike favourable bargain and to avoid costly entanglements.

Mintzberg's Theory Of Organization

Mintzberg's work is based on an open systems approach incorporating contingency theory as he believes that effective organisations achieve an appropriate balance between task, environment and organisation structure but he sees his configuration approach taking it further. This he characterises as 'getting it all together', in which the elements are selected to achieve consistency

His basic premise is that a limited number of configurations can help to explain much of what can be observed in organisations. His seven configurations do, he believes, encompass and integrate much of what is known about organisations. He emphasises that each configuration is idealised

Five of the configurations appeared in his book "The Structure of Organisations" (Mintzberg 1979) – Entrepreneurial/simple structure, Machine, Diversified/divisionalized, Professional and Innovative/Adhocracy. However, in their extreme forms they can become so strong that the organisation's structure is built around them.

Mintzbert argues that there are five basic parts to any organisation namely the operating core – employees who perform the basic work related to the production of products and services, the strategic apex – Top-level managers, who are charged with the overall responsibility for the organisation, the middle line – managers, who connect that operating core to the strategic apex, the technostructure – analysts, who have the responsibility and the support staff – people who fill the staff units, who provide indirect support services for the organisation

Robbins (2004) and walker (2007) argue that any of the five parts can dominate an organisation. Moreover depending on which part is in control, given a structural

configuration is likely to be used. So, according to Mintzberg, there are five distinct design configurations, and each is associated with the denomination by one of the five basic parts. If control lies with the operating core, decisions are decentralized. This creates the professional bureaucracy. When the strategic apex is dominant, control is centralized and the organization is simple structure. If middle management is in control, you will find groups of essentially autonomous units operating in a divisional structure. Where the analysts in the technostructure are dominant, control will be through standardization, and the resultant structure will be a machine bureaucracy.

Machine Bureaucracy

The key concept that underlies all machine bureaucracies is standardization. The **machine** bureaucracy has highly routine operating tasks, very formalized rules and regulations, tasks that are grouped into functional departments, centralized authority, decision making that follows the chain of command, and an elaborate administrative structure with a sharp distinction between line and staff activities. Rules and regulations permeate the entire structure. Examples are government offices that collect your taxes, enforce health regulations, or provide local fire protection. They all rely on standardized work processes for coordination and coordination and control.

The Professional Bureaucracy

It has been created to allow organizations to hire a highly trained specialist for the operating core, while still achieving the efficiencies from standardization. It combines standardization and decentralization. The power in configuration for professional bureaucracies rests with the operating core because they have the critical skills that the organization needs, and they have the autonomy provided through decentralization to apply their expertise. The only other part of the professional bureaucracy that is fully elaborated is the support staff, but their activities are focuses on serving the operating core.

Divisional Structure

The power in a divisional structure lies with the middle management. The reason is that divisional structure is actually set of autonomous units, each typically a machine bureaucracy

unto itself, coordinated by a central headquarters. Since the divisions are autonomous, it allows middle management – the division managers –a great lead of control.

As with all divisional structures, each division is generally autonomous, with the divisional managers responsible for performance and holding complete strategic and operating decision-making authority. This form also has a central headquarters that provides support services to the divisions. This typically includes financial, legal and tax services. Additionally, of course, the headquarters act as an external overseer, evaluating and controlling performance. Divisions, therefore, are autonomous within given parameters. A typical divisional organisation is seen at the Country Works Offices of the Ministry where the County Works Officer acts as the Project manager in all projects and has full authority to make decisions.

One of the advantages of divisional structure is that it seeks to remedy this problem by placing full responsibility for a product or service in the hands of the divisional manager. Another strength of the divisional structure is that it frees up the headquarters staff from being concerned with the day-to-day operating details so they can pay attention to the long-term goals.

Adhocracy

Adhocracy is characterized by a high horizontal differentiation, low vertical differentiation, low formalization, decentralization and great flexibility and responsiveness. Horizontal differentiation is great because adhocracies are staffed predominantly by professionals with a high level of expertise. Vertical differentiation is low because the many levels of administration would restrict the organization's ability to adapt. Also, the need for supervision is minimal because professionals have internalized the behaviours that management wants.

2.15.2 Leadership Theories

Leadership is defined as the ability to influence a group towards the achievements of certain goals (Robbins, 1995). Good management brings order and consistency in drawing up formal plans, designing of organization structure and monitoring results against the plans. Leadership on the other hand is about coping with change as leaders establish direction for the organization by developing a vision for the future; align people to the organization goals by communicating the vision and inspiring them to overcome challenges (*Ibid*, 1995).

Kotter (1990) argues that both leadership and strong management are necessary for optimum organizational effectiveness. Robbins (2004) defines organizational effectiveness as the degree to which an organisation attains its short and long-term (means) goals, the selection of which reflects strategic constituencies, the self-interested evaluator and the life stage of the organisation.

Contingency Theories of Leadership

The basic theories of leadership under the contingency theory are the Fielder Contingency model and the Cognitive Resource Theory.

Fieldler's Contingency Theory

Fieldler's Contingency Theory argues that effective groups in any organization depend upon a proper match between the leaders' style of interacting with the subordinates and the degree to which the situation gives control and influence to the leader. He identified three (3) situational criteria namely *Leader - Member relations* which according to Fielder show the degree of confidence, trust and respect subordinates have in their leader. Fielder stated that the better the leader member relations, the more highly structure the job and the stronger the position power, the more control or influence the leaders has, the *Task structure* which refers to the degree to which the position power is the extent of influence that a leader has over power variables such as in hiring, firing, discipline, promotion and salary increases (Robbins, 1995) and *Position power.* Fieldler believes that the three situations can be manipulated to obtain a proper match with the behavioural orientation of the leader. Fieldler's research goes beyond the leader traits and behavioural approaches by attempting to isolate situations, relating the leader's personality measure to his situational classification and uses this to predict leadership effectiveness.

This theory may, however, not be very applicable in the management of professionals by the project leader where some of the team members have better qualifications than the leader (Smith, 2004).

Cognitive Resource Theory

The theory was advanced by Fieldler and Garcia as an improvement of the former theory of contingency to leadership. The theory is based on two assumptions on leadership namely intelligent and competent leaders formulate more effective plans, decisions and action strategies than less intelligent ones and that leaders communicate their plans, decisions and

strategies through directive behaviours. According to Robbins (1995) the theory portends that directive behaviour results in good performance only when linked with high intelligence in a supportive, non-stressful leadership environment and that in highly stressful situations, there is a positive relationship between job experience and performance. The theory further asserts that the intellectual abilities of leaders correlate with group performance in situations that the leader perceives as non-stressful.

Hersey and Blanchard's Situational Leadership Theory

The situational leadership theory focuses on followers of a leader. The theory postulates that successful leadership is achieved by selecting the right leadership style which according to the two proponents is contingent on the level of the followers'/subordinates' maturity.

According to the proponents, maturity is the ability and willingness of people to take responsibility for directing their own behaviour. Maturity has two components namely job maturity which encompasses ones knowledge and skills and psychological maturity that relates to the willingness or motivation to do something (*Ibid*, 1995).

Individuals who are high in job maturity have the knowledge, ability and experience to perform their job tasks without direction from others and individuals high in psychological maturity do not need much external encouragement. The team members are already intrinsically motivated. Smith (2004) argues that effective leadership demands that team members and subordinates be allowed to provide their ideas on the direction and achievement of organisational objectives.

Path – Goal Theory

The Path-Goal Theory was developed by Robert House. Path-Goal Theory is a contingency model of leadership that extracts key elements from the Ohio State leadership research on initiating structure and consideration and the expectancy theory of motivation (Robbins, 1995) whose proponent was Vroom.

The term "path-goal" is derived from the belief that effective leaders clarify the path to help their followers get from where they are to the achievement of their work goals and make the journey along the path easier by reducing roadblocks and pitfalls.

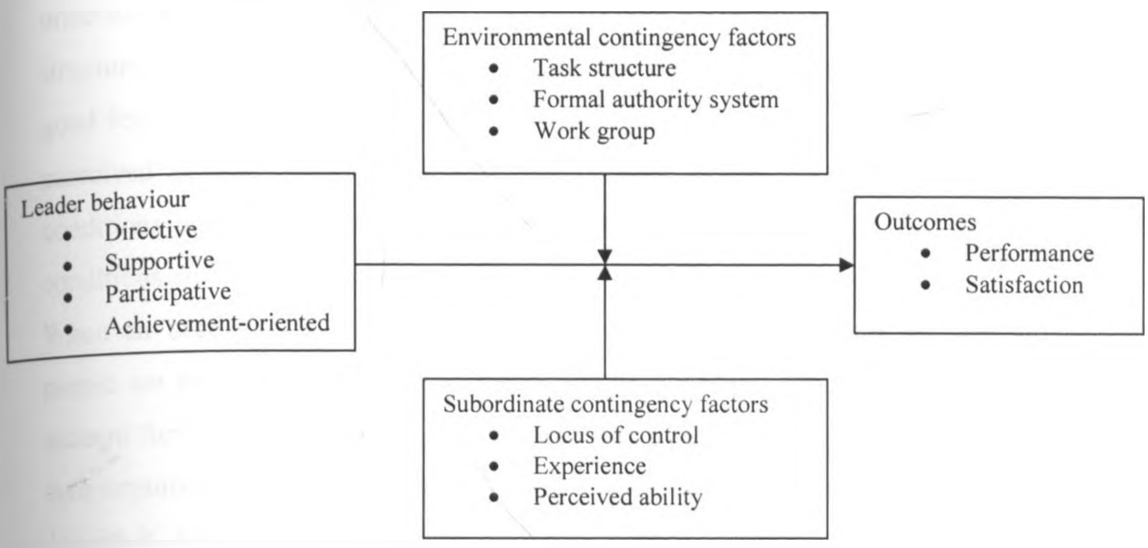
The essence of the theory is that it's the leader's job to assist his or her followers in attaining their goals and to provide the necessary direction and/or support to ensure that their goals are compatible with the overall objectives of the group or organization.

According to Path-Goal Theory, a leader's behaviour is acceptable to subordinates to the degree that it is viewed by them as an immediate source of satisfaction or as a means of future satisfaction. A leader's behaviour is motivational to the degree that it makes subordinate need satisfaction contingent on effective performance and provides the coaching, guidance, support and rewards that are necessary for effective performance. The Theory identified four leadership behaviours. The *directive* leader lets subordinates know what is expected of them, schedules work to be done and *gives* specific guidance as to how to accomplish tasks.

According to Robbins (1995), the *supportive leader* is friendly and shows concern for the needs of subordinates. The *participative leader* consults with subordinates and uses their suggestion before making a decision. The *achievement-oriented* leader sets challenging goals and expects subordinates to perform at their highest level. Contrary to Fieldler's views of a leader's behaviour, House assumes that leaders are flexible. Path-goal theory implies that the same leader can display any or all of these behaviours depending on the situation; the Theory assumes that leaders are flexible in their actions.

The Path-Goal theory proposes two classes of situational or contingency variable that moderate the leadership behaviour-outcome relationship as follows : those in the environment that are outside the control of the subordinate task structure, the formal authority system and the work group) and those that are part of the personal characteristics for the subordinate (locus of control, experience and perceived ability).

Figure 2.9 –Illustration of the Goal-Path Theory



Source: Robbins (1995)

Environmental factors determine the type of leader behaviour required as a complement if subordinate outcomes are to be maximized, while personal characteristics of the subordinate determine how the environment and leader behaviour are interpreted. So the theory proposes that leader behaviour will be ineffective when it is redundant with sources of environmental structure or incongruent with subordinate characteristics. Some of the hypotheses that have evolved out of path-goal theory are that directive leadership leads to greater satisfaction when tasks are ambiguous or stressful than when they are highly structured and well laid out and supportive leadership results in high employee performance and satisfaction when subordinates are performing structured tasks.

The above hypotheses attest to the fact that employee performance and satisfaction are likely to be positively influenced when the leader compensates for things lacking in either the employee or the work setting.

Attribution Theory of Leadership

The Attribution Theory attempts to explain the cause-effect relationships. According to the theory when something happens, people want to attribute it to something. In the context of leadership, attribution theory says that leadership is merely an attribution that people make about other individuals.

Using the attribution framework, researchers have found that people characterize leaders as having such traits as intelligence, out-going personality, strong verbal skills, aggressiveness, understanding, and industriousness. Similarly, the high-high leader high on both initiating structure and consideration) has been found to be consistent with attributions of what make a good leader. That is, regardless of the situation, a high-high leadership style tends to be perceived as best. At the organizational level, the attribution framework accounts for the conditions under which people use leadership to explain organizational outcomes. Those conditions are extremes in organizational performance.

When an organization has either extremely negative or extremely positive performance, people are prone to make leadership attributions to explain the performance. This helps to account for the vulnerability of chief executive officers (CEOs) or heads of institutions when their organizations suffer a major financial setback, regardless of whether they have much to do with it. It also accounts for why these CEOs tend to be given credit for extremely positive financial results, regardless of how much or how little they contribute.

One of the most interesting themes in the attribution theory of leadership literature is the perception that effective leaders are generally considered consistent or unwavering in their decisions. Robbins (1995) argues that this is one of the explanation for why Lee Iacocca and Ronald Reagan during their first term as Presidents were perceived as leaders was that both were fully committed, steadfast and consistent in the decisions they made and the goals they set. Evidence indicates that a "heroic" leader is perceived as being someone who takes up a difficult or unpopular cause and through determination and persistence, ultimately succeeds.

Transactional and Transformational Leadership

Most of the leadership theories presented in this chapter, for instance, the Ohio State studies, Fielder's model, path-goal theory and the leader participation model have concerned for transactional leaders. These kinds of leaders guide or motivate their followers in the direction of established goals by clarifying role and task requirements. But there is another type of leader who inspires followers to transcend their own self-interests for the good of the organization, and who is capable of having a profound and extraordinary effect on his or her followers. These are transformational leaders. Such leaders pay attention to the concerns and developmental needs of individual followers; they change followers' awareness of issues by helping them to look at old problems in new ways; and they are able to excite, arouse and inspire followers to put out extra effort to achieve group goals.

Transformational leadership is built on top of transactional leadership successes as it produces levels of subordinate effort and performance that goes beyond what would occur with a more than charisma. Whereas the purely charismatic (leader) may want followers to adopt the charismatic's world view and does not endeavour to go further; the transformational leader will attempt to instil in followers the ability to question not only established views but eventually those established by the leader.

The evidence supporting the superiority of transformational leadership over the transactional variety is overwhelmingly impressive (Robbins, 1995) as confirmed by a number of studies with U.S., Canadian and German military officers where it was found out at every level that transformational leaders were evaluated as more effective than their transactional counterparts. Managers at Federal Express who were rated by their followers as exhibiting more transformational leadership were evaluated by their immediate supervisors as high performers and more promotable (*Ibid*, 1995). In summary the overall evidence indicates that transformational leadership is more strongly correlated than transactional leadership with lower turnover rates, higher productivity and higher employee satisfaction.

2.15.3 Theories of Motivation

Motivation-Hygiene Theory

The motivation-hygiene theory was proposed by psychologist Fredrick Herzberg. In the belief that an individual's relation to his or her work is a basic one and that his or her attitude towards work can very well determine the individual's success or failure, Herzberg investigated the question, "What do people want from their jobs?" (Robbins, 1995). He asked people to describe, in detail, situations when they felt exceptionally good and bad about their jobs. These responses were tabulated and categorized. He noted that intrinsic factors such as achievement, recognition, the work itself, responsibility bestowed, advancement in career and growth opportunity are positively related to the job satisfaction and called them satisfiers. On the contrary the employees cited extrinsic factors such as company policy and administration, supervision, interpersonal relations and working conditions as dissatisfies or hygiene factors.

Herzberg argues that hygiene satisfies lower-level needs and that motivators satisfy or partially satisfies higher-level needs. He asserts that the employer interested in creating a self-motivated workforce should emphasize job-content or motivator factors.

McClelland's Theory of Needs

The theory focuses on three needs namely achievement, power, and affiliation. The need for achievement includes the drive to excel, to achieve in relation to a set of standards and to strive to succeed whereas the need for power refers to the need to make others behave in a way that they would not have behaved otherwise. The need for affiliation is the desire for friendly and close interpersonal relationship at work or in a team

McClelland isolated the need for affiliation as a key motive and is influenced strongly by personality and environment, according to Cole (1996) and Robbins (1995) and further assets that recognition and challenging work provides a sort of built-in motivation generator. The work should be organised so that doing it provides the feedback and challenges that helps satisfy the individual's higher needs.

ERG Theory

Clayton Alderfer of Yale University reworked Maslow's need hierarchy to align it more closely with the empirical research. His revised need hierarchy is labelled ERG theory.

Alderfer argues that there are three groups of core needs – existence, relatedness and growth; hence the label: ERG theory. The existence group is concerned with providing the basic material existence requirements. They include the items that Maslow considered physiological and safety needs. The second group of needs are those of relatedness- the desire we have for maintaining important interpersonal relationships. These social and status desires require interaction with others if they are to be satisfied, and they align with Maslow's esteem classification. Finally, Alderfer isolates the intrinsic component from Maslow's esteem category and the characteristics included under self-actualization.

Besides substituting three needs for five, the ERG Alderfer's theory demonstrates that more than one need may be operative at the same time, and that once the gratification of a higher-level need is stifled, the desire to satisfy a lower-level need increases.

ERG theory, unlike Maslow's need hierarchy, does not assume that there exists a rigid hierarchy where a lower need must be substantially gratified before one can move on. A person can, for instance, be working on growth even though existence or relatedness needs are unsatisfied; or all three need categories could be operating at the same time.

ERG theory also contains a frustration-regression dimension. According to Maslow, an individual would stay at a certain need level until that need was satisfied. ERG theory counters this by noting that when lower-level need takes place, inability to satisfy a need for

social interaction, for instance, might increase the desire for more money or better working conditions. So frustration can lead to a regression to a lower need.

ERG Theory is more consistent with knowledge of individual differences among people. Variables such as education, family background and cultural environment can alter the importance or driving force that a group of people in other cultures rank the need categories differently-for instance, requirements-would be consistent with the ERG theory, but according to Alderfer as cited by Robbins (1995) there is also evidence that it does not work in some organizations.

Goal-Setting Theory

In the late 1960s, Edwin Locke proposed that intentions to work toward a goal are a major source of work motivation. In the light of Locke, goals tell an employee what needs to be done and how much effort will need to be expended. The evidence strongly supports the value of goals. Specifically, specific goals increase performance; that difficult goals, when accepted, result in higher performance than do easy goals; and that feedback leads to higher performance than does non- feedback.

Specific hard goals produce a higher level of output than does a generalized goal of "do your best". The specificity of the goal itself acts as an internal stimulus. Robbins(1995) presented an example thus *when a trucker commits to making eighteen round-trip hauls between Baltimore and Washington, D.C., each week, this intention gives him a specific objective to reach for.* We can say that, all things being equal, the trucker with a specific goal will outperform his counterpart operating with no goals or the generalized goal of "do your best." Goal commitment is likely to be enhanced when goals are made public and when they are set by the individual rather than imposed externally by the leader or management (Cole, 2004).

Expectancy Theory

The theory was developed by Victor Vroom's and is currently one of the most widely accepted explanations of motiyation. Although it has its critics, most of the research evidence is supportive of the theory (Robbins, 1995).

Essentially, the expectancy depends on the strength that a tendency to act in a certain way depends on the strength of an expectation that the act will be followed by a given outcome and on the attractiveness of that outcome to the individual. It includes three variables or

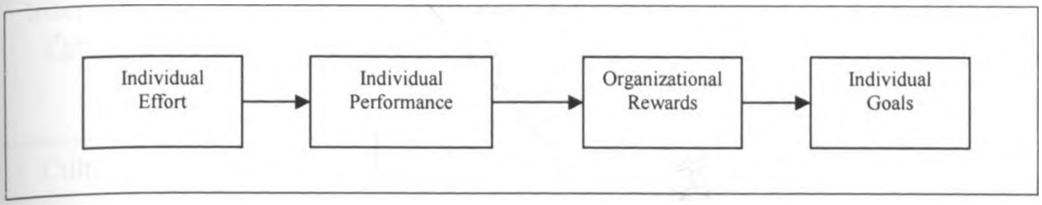
relationships namely attractiveness which refers to the importance that the individual places on the potential outcome or reward that can be achieved on the job and therefore takes into account the unsatisfied needs of the individual, performance-reward linkage which relates degree to which the individual believes that performing at a particular level will lead to the attainment of a desired outcome and effort-performance linkage; the probability perceived by the individual that exerting a given amount of effort will lead to performance.
Whether one has the desire to produce at any given time depends on one's particular goals and one's perception of the relative worth performance as a path to the attainment of these goals.

Figure 2.6 is a considerable simplification of expectancy theory, but it expresses its major contentions. The strength of a person's motivation to perform (effort) depends on how strongly he or she believes that he or she can achieve attempted tasks. If the person achieves this goal (performance), will he or she be adequately rewarded and, if rewarded by the organization, will the reward satisfy the person's individual goals? The four steps inherent in the theory can be answered by the following questions: first, what perceived outcomes do the job offer the employee? Outcomes may be positive: pay, security, companionship, trust, fringe benefits, a chance to use talent or skills, congenial relationships. On the other hand, employees may view the outcomes as negative: fatigue, boredom, frustration, anxiety, harsh supervision, threat of dismissal. Importantly, reality is not relevant here; the critical issue is what the individual employee perceives the outcome to be, regardless of whether or not his or her perceptions are accurate.

Secondly, how attractive do employees consider these outcomes? Are they valued positively, negatively, or neutrally? This obviously is an internal issue to the individual and considers his or her personal values, personality and needs. The individual who finds a particular outcome attractive – that is, positively valued – would prefer attaining it to not attaining it. Others may find it negative and therefore, prefer not attaining it to attaining it. Still others may be neutral.

Thirdly, what kind of behaviour must the employee produce in order to achieve these outcomes? The outcomes are not likely to have any effect on the individual employee's performance unless the employee knows, clearly and unambiguously what he or she must do in order to achieve them.

Figure 2.10 Simplified Expectancy Model



Source: Robbins (1995)

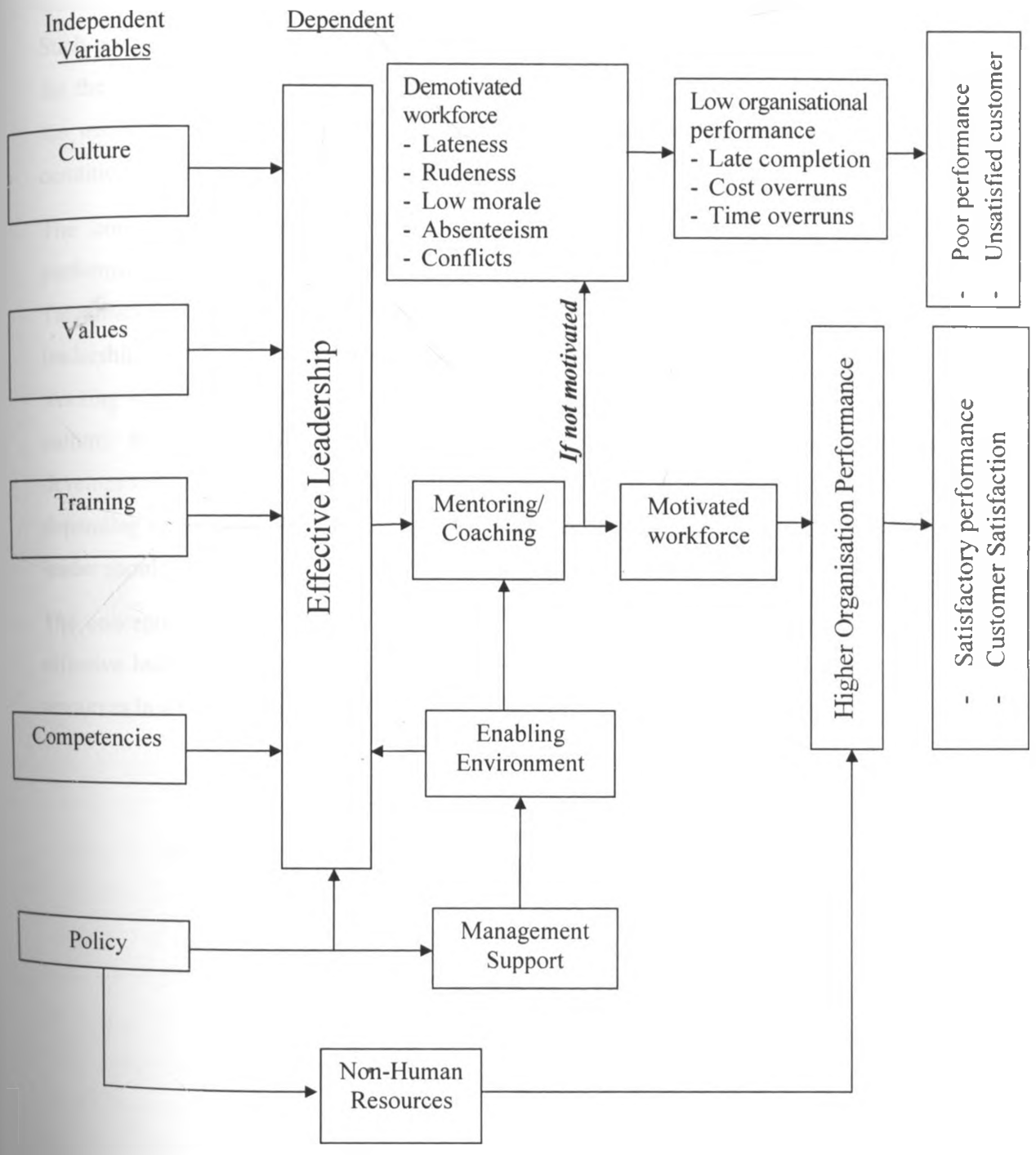
2.16 Conceptual Framework

The conceptual framework is the third level of theory. Here, descriptive categories are systematically placed in broad structure of explicit prepositions statements of relationships between two or more empirical properties to be accepted or rejected, according to Frankfort-Nachiamis, *et al* (2003).

To ensure that public building projects are executed duly as displayed in the project vision the management structures should be enabling. According to the 7-S project management principles (Maylor 1999) the organisation as a structure is the arrangement of human resources relative to lines of command and control and therefore the nature of the structure is important. Effective leadership is able to create high productivity in an organization and these are only possible if certain attributes are present in a team leader or project manager. Effectiveness is the ability to do right things or get things accomplished, and this includes choosing the most appropriate objectives and the most efficient methods of achieving the objectives (Griffith *et al*, 2004).

The main factors that influence effective leadership as shown Figure 2.7 are competency skills which entails special qualities such as intelligence, technical skill, human skills, attitudes etc, emotional stability and ethical behavioural style, organisational culture and values, environmental influence (external and internal), level and type of training and Government policies.

Figure 2.7 – Schematic Representation of the Concept



Source: Author – 2011

The above factors together with management support and enabling work environment results in a motivated workforce who together with other non-human resources results in higher organisation performance and real customers' satisfaction.

Government policies dictate the environment in which construction processes take place. Such policies like the Procurement policies and the conditions of contract provide guideline for the procurement of works and the implementation respectively. Work environment and the necessary infrastructure such as computers, fax machines and internet facilities and conditions of employment make organisations to perform.

The conceptual framework in Figure 2.7 goes further to explain that poor project performance is not only due to the facts as established in studies by Mbatha (1986), Talukhaka (1988, 1999), Masu (2006), Abwunza (2001) and Msafiri (2006) but also on the leadership effectiveness and enabling internal environment which takes account of the working conditions, the payment package and benefits, the policies and organisational culture. An effective leader should be able to navigate the teams through the project development and implementation process by adopting the right kind of leadership style depending on the prevailing circumstances. This is in line with the Path- Goal Theory that a leader should be flexible.

The conceptual model presented in Figure 2.7 is based on the assumption or theory that effective leadership can be realized through structured training and provision of optimum resources in a timely manner.

CHAPTER THREE

3.0 RESEARCH DESIGN AND METHODOLOGY

3.1 The Study Design

The study used descriptive survey design to examine the performance of the construction projects in the public sector in Kenya with focus on leadership and funding of public building projects in Nairobi Region. Mugenda & Mugenda (1999) defines descriptive survey research as *a study wherein a researcher describes existing phenomenon by enquiring the respondents' perceptions or feelings toward a phenomena.* The descriptive survey was appropriate in this design to enable researcher to gather sufficient data in a short period of time (Ary *et al*, 1996). Therefore, a descriptive survey design was considered appropriate in this study as it focuses on the performance of public building projects in Nairobi and it involves exploring both the technical and non-technical personnel of the Ministry of Public Works, consultants, contractors and other stakeholders of public building projects in Nairobi province.

3.2 Study Area

3.2.1 Position and size

Nairobi Region is one of the forty seven (47) regions in the Republic of Kenya. It is situated within 0-2° South of the Equator and between longitude 36° and 38° degrees west of Greenwich Meridian (Macmillan Kenya Ltd, 2009). It covers an area of 2,500 square kilometres and has a population of 3,138,369 according to National Census of 2009 (Republic of Kenya, 2009), increasing marginally from 2.9 to 3.0 percent annually in the last decade at a growth rate of 3.8 inters censual growth. It is also the Capital City of the Republic of Kenya and houses all the national headquarters and most of the international agency offices in Africa. The construction industry in Nairobi City is the most developed within the East Africa region.

Figure 3.1: Location of the Study Area in Kenya

Source: Internet (Google Maps - Kenya), 2011

Administrative and Political Units of The Province

Administratively, Nairobi province is divided into four districts namely: Nairobi West, Nairobi East, Nairobi North and Wetlands (Republic of Kenya, 2009). The four districts are further subdivided into division which includes Makadara, Kamukunji, Langata, Embakasi, Pumwani, Dagoretti, Kasarani and Parklands. Nairobi is under one Local Authority and the City Council of Nairobi. It is bordered to the west and south by the Great Rift Valley, to the north by Central and to the east by Eastern provinces.

Figure 3.2 Study Area in Detail

Source: Internet (Google Maps – Nairobi, 2011)

Climate Conditions

Nairobi is located at a mean altitude of 1550 above the sea level with the highest altitude of 1800 m in the west that gradually slopes to the east. The main types of Soil here are the Black cotton soil and the Red Soil. These types of soil are not suitable for infrastructural development in that they require heavy capital investment while putting up foundations (Republic of Kenya, 2001).

The province has a moderate climate resulting from its high altitude, temperature ranges from 26^{0} Celsius to 10^{0} (lowest). In terms of rains, the province has a bi- modal rainfall pattern. The long rains fall between March and May with a mean rainfall of 1300 mm while the short rains fall between October and December with a mean rainfall of 100 mm. The mean annual rainfall is 1150 mm. This means that the effect of weather on the construction programmes and speed of completion is minimal.

Physical Infrastructure

The main physical infrastructure in Nairobi include: roads, power stations, multi-storeyed buildings, major hotels, public works and residential housing.

Roads in the province are characterized by congestion due to increasing construction of offices and residential houses and vehicles without corresponding expansion of the infrastructure more specifically roads. The region has prioritized expansion of roads over the planned period by relocating business activities away from the road reserves (Republic of Kenya, 2009). Due to road congestion, the cost of transporting material especially carting away is enormous and thus increases the cost of construction tremendously.

3.2.2 Study Population

The population of the study are public building projects which were demarcated into units of completed and on-going projects, implemented or being implemented between 2000 and 2010. A total of 27 public building projects done over the last ten (10) years and administered from the MoPW's Headquarters were identified (Table 3.1). The 27 projects formed the entire population from which the study sample of projects costing Kshs. 100,000,000 were obtained. From the study population of 27 public building projects, a target of 16 projects costing more than KShs. 100,000,000 were identified. The researcher settled for projects of this magnitude because they take over a span of time more than one Government Financial Year and therefore presents all aspects of leadership and management of resources particularly the disbursement of funds from the Exchequer to the Client Ministry and finally to the contractors/sub-contractors and consultants employed on the project.

The study sample hence consisted of seven public building projects with a total of 130 respondents sampled by use of simple random sampling procedures from a total population of 243 staff from MoPW, Consulting and Construction Firms as the main project stakeholders presented in Tables 3.2, 3.3 and 3.4.

TABLE 3.1

PUBLIC BUILDING PROJECTS IN NAIROBI (2000-2010)

	Name of Project/ Job No.	Contract Sum	Final/Projected Cost	Date of Possession	Date of Completion	Actual/ Anticipated Completion Date	Project Status	Initial Contract Period (Weeks)	Final Contract Period (Weeks)	Time Overrun/ Delay (Weeks)	Cost Overrun
1	VP's Residence Completion at Karen-7937B	197,010,780.00	197,010,780.00	25/01/2006	25/01/2007	31/08/2008	Terminated	52	83	31	-
2	Completion of Government Quarters-7937C	383,066,066.00	383,066,066.00	21/09/2009	12/12/2011	7/6/2010	On-going	36	50	24	-
3	Westpark Housing Project-7278C (Phase I)	1,371,664,442.90	1,371,664,442.90	1/10/2009	30/09/11	30/11/2011	On-going	104	108	4	-
4	Completion of Senior officers, Mess, Ration and Works at Naivasha	212,911,073.60	212,911,073.60	10/02/2009	10/8/2008	10/8/2010	On-going	78	78	Not yet approved	-
5	Remodelling & Refurbishment to office of the Prime Minister-8363A	329,000,000.00	329,000,000.00	10/12/2009	10/6/2010	22/08/2010	completed	32	36	4	-
6	Completion of Mitihani House Ph. V-7256 E	865,582,801.00	934,299,450.00	21/10/2008	21/4/2011	21/04/2011	On-going	130	162	Not approved yet	68,716,649.00
7	Ongata Rongai Police Lines-7493 A	107,210,502.00	104,963,896.00	21/05/2004	11/11/2004	11/11/2004	Practically Complete	23	23	Not yet approved	2,246,606.00

8	*Completion of Kibish Police Lines, GSU Base Camp & AP Lines-7411B & 7412B*	2,111,024,033.00	2,111,024,033.00	12/1/2010	12/1/2013	12/1/2013	On-going	156	-	-	-
9	Police Lines at Dandora-8002A	60,000,000.00	60,000,000.00	22/08/2006	13/02/2007	11/12/2008	Final Acc. Pending	23	60	37	
10	Police Lines at Kamukunji-0279B	93,361,825.00	115,226,789.91	17/08/2006	20/03/2007	9/3/2011	terminated	29	131	102	21,864,964.91
11	Central Police Lines-0034B	91,441,195.00	161,136,307.74	28/08/2006	12/3/2007	29/09/2009	Final Acc. Pending	24	124	100	69,695,112.74
12	Kabete Police Lines-6705C	60,411,242.00	60,411,242.00	17/08/2006	17/08/2006	19/02/2007	Final Acc. Pending	25	25	Not yet approved	-
13	Completion of Police Lines at Industrial Area-5791K	54,833,956.00	54,833,956.00	27/07/2007	2/1/2008	29/09/2009	On-going	24	112	88	-
14	Pangani Police Lines at Pangani-6956B	58,437,626.00	58,437,626.00	31/08/2006	30/09/2008	30/09/2008	On-going	108	108	-	-
15	Completion of Addition Facilities at Embakasi	211,120,500.00	211,120,500.00	3/10/2008	3/10/2009	3/10/2009	On-going	52	52	-	-
16	Completion of Migori District HQS-7380 C	609,471,291.00	609,471,291.00	3/7/2009	29/07/2011	At large	On-going	104	112	8	-
17	Completion of Workshops, Warehouses, Fire Station, Other Civil Works at NYS Ruaraka	179,641,277.78	179,641,277.78	7/5/2007	30/04/2008	6/8/2008	Final Acc. Pending	52	65	13	-
18	Renovation and Additional Works at Highridge -6746G	41,207,605.68	41,207,605.68	3/3/2009	27/10/2009	27/10/2009	On-going	34	34	-	-

19	*Re-roofing and Refurbishment of 54 No. Flats at Kenya Airports (KAPU)-0037P*	152,399,814.00	152,399,814.00	3/3/2009	2/2/2010	2/2/2010	On-going	48	48	-	-
20	Ngong Police Lines-8006A	109,857,673.00	109,857,673.00	3/8/2007	31/07/2008	30/07/2009	terminated	100	148	48	-
21	Administration Block at National Intelligence Academy-8138A	44,101,909.00	51,158,214.00	26/09/2006	6/5/2007	14/02/2008	Complete	29	60	31	7,056,305.00
22	Construction of Kayole Police Lines	103,000,000.00	103,000,000.00	17/08/2006	19/02/2007	30/9/2008	Not Complete	22	98	76	-
23	Rehabilitation and Completion of Garisa TTC-7110C	57,000,000.00	57,000,000.00	23/03/2009	17/06/2009	17/06/2009	On-going	11	63	52	-
24	Completion of Longisa District Hospital-7117B	196,927,909.00	196,927,909.00	21/10/2008	20/04/2010	20/04/2010	On-going	78	78	Not yet approved	-
25	Completion of Showey Sub-District Hosp-7336 B	168,573,202.70	168,573,202.70	5/10/2006	5/2/2008	3/11/2009	Practically Complete	97	177	80	-
26	Completion of Kericho Ardhi House-6459 D	263,565,333.00	263,565,333.00	14/8/2009	6/5/2011	6/5/2011	On-going	90	90	Not yet approved	-
27	Proposed New Malindi Law Courts	285,720,844.70	328,248,971.41	28/06/2007	29/12/2009	01/02/2011	On-going	130	145	15	42,858,126.71

Source: Ministry of Public Works Contract Documentation and Contracts Registry Offices, 2010.

3.2.3 Sample Size and Sampling Procedure

In sampling the respondents, the researcher first constructed study sampling frame of public building projects from the Contracts Documentation Registry and Forward Planning Unit of the MoPW as well from others clients Government Ministries. According to Cooper, *et al* (2003) a sampling frame is a list of elements from which the sample is drawn. To ensure completeness of the sampling frame, the researcher interviewed government officers and staff of partners in the area then compiled a third list to capture the entire government financed building projects in the Region. Twenty seven (27) government financed building projects undertaken over the last ten (10) years and administered from the MoPW's Headquarters were identified in the entire study area as shown in Table 3.1. The researcher then demarcated building projects into completed and on-going projects to enable all the 27 building projects in the study area to form a systematic sample as they appear in the sampling frames.

Demarcating public building projects into completed and on-going projects gave every project the same probability of being included in the sample so that the level of accuracy in estimating parameter is increased. The projects were further classified based on the amount of money involved. The researcher settled on building projects in Nairobi Region, costing over Kshs. 100,000,000 and approved by the relevant line Ministry as they have all aspects of project leadership and management including required attributes of leadership necessary to organize other resources towards the desired goals. The researcher eventually proceeded to sample the projects and subsequently the respondents as follows:

3.2.3.1 Sampled Public Building Projects

The public building projects were demarcated in strata of building projects supervised by MoPW from the Headquarters and costing over KSh 100,000,000. Sixteen (16) building projects qualify for the study. The rest that did not qualify were excluded. However, owing to inadequacy of time and other resources, the researcher used simple random sampling technique based on the recommendation of Bell (1993) that one third of the total population is suitable for representation. This is further supported by Mugenda and Mugenda (1999) recommendation of minimum of 25% as fair representation of the total study population.

The projects that qualified were assigned random numbers as they appeared in the sampling frame. Random numbers were picked randomly then checked to find out the institution that had been selected for sample. To avoid biasness, a project was picked once. The same procedure was repeated for all the projects. Eventually seven public building projects were selected for the study.

The major sub-group of the study were the technical staff of the Ministry of Public Works forming the four Departments of Architecture, Quantities and Contracts, Structural Engineering and Electrical/Mechanical Engineering (BS). The researcher used systematic random sampling procedures and assigned all the staff random numbers at interval of five; distributed equally among them and then picked randomly at an interval of five the one picked formed the study sample. The hired consultants and staff of the building firms (contractors) form a minor sub-group of the study. Simple random sampling procedure was used to sample out consultants and staff (contractor) of the building firms.

The Departmental Heads from the Ministry of Public Works, user/client ministries of the projects and the directors of construction and consulting firms were sampled through purposive sampling techniques based on the fact that they were the ones who had the required information on the policy matters of the institutions.

The researcher therefore sampled 50 out of 132 staff from the MoPW, 31 out 62 from hired consultants, and 30 out 30 respondents from clients' ministries and 19 out 19 Directors /Site Agents of the construction and consulting firms resulting to 130 respondents distributed in Table 3.2 – Table 3.5 below.

TABLE 3.2 – RESPONDENTS/MINISTRY OF PUBLIC WORKS

NO	NAME OF PROJECT	MINISTRY/INSTITUTIONS TECHNICAL STAFF	NO. OF TECHNICAL PERSONNEL	SAMPLED RESPONDENTS
		MINISTRY OF PUBLIC WORKS		
1	TSC Headquarters			
2	Completion of Mitihani House Phase V -7256 E	HOD'S	4	4
		D/HOD	8	8
3	Westpark Housing Project - 7278C (Phase I)	Architects	32	10
		Quantity Surveyors	26	8
4	Ongata Rongai Police Lines - 7494A	Electrical Engineers	20	6
5	Re-roofing and Refurbishment of 54No. Flats at Kenya Airports (KAPU) - 0037P	Mechanical Engineers	20	6
		Structural Engineers	20	6
6	Ngong Police Lines	Chief Finance Officer	1	1
		Chief Accountant	1	1
			Sub-total = 132	**Sub-total = 50**

Source: Author (2011)

TABLE 3.3 – SAMPLED CONTRACTORS

NO	NAME OF SAMPLE PROJECT	CONTRACTORS	NO. OF PERSONNEL	SAMPLED RESPONDENTS
1	VP's Residence Completion at Karen - 7937B	Director(s) Site Agents	3 1	3 1
2	Westpark Housing Project 7278C (Phase I)	Director(s) Site Agents	2	2
3	TSC Headquarters	Director(s) Site Agents	3 1	3 1
4	Completion of Mtihani House Phase V - 7256E	Director(s) Site Agents	2 1	2 1
5	Ongata Rongai Police Lines - 7493A	Director(s) Site Agents	2 1	2 1
6	Re-Roofing and Refurbishment of 54No. Flats at Kenya Airports (KAPU) - 0037P	Director(s) Site Agents	1	1
7	Ngong Police Lines	Director(s) Site Agents	1 1	1 1
			Sub-total = 19	**Sub-total = 19**

Source: Field Survey (2011)

TABLE 3.4 - CLIENT MINISTRIES/BENEFICIARIES

NO	NAME OF SAMPLE PROJECT	CLIENT MINISTRY	NO. OF PERSONNEL	SAMPLED RESPONDENTS
1	VP's Residence Completion at Karen - 7937B	Office of V.P	2 1	2 1
2	Westpark Housing Project 7278C (Phase I)	Office of the President Department of Police	1	1
3	TSC Headquarters	Ministry of Education TSC	3 1	3 1
4	Completion of Mtihani House Phase V - 7256E	Ministry of Education TSC	2 1	2 1
5	Ongata Rongai Police Lines - 7493A	Office of the President Department of Police	2 2	2 2
6	Re-Roofing and Refurbishment of 54No. Flats at Kenya Airports (KAPU) - 0037P	Ministry of Transport KAP	2 2	2 2
7	Ngong Police Lines	Office of the President Department of Police	2 2	2 2
8	Kenya Institute of Business Technology	Ministry of Trade/Principal		
9	Embakasi			
10	Ruaraka			
			Sub-total = 30	**Sub-total = 30**

Source: Field Survey (2011)

TABLE 3.5 – SAMPLED CONSULTING FIRMS

NO	NAME OF PROJECT	CONSULTING FIRMS	NO. OF PERSONNEL				TOTAL PERS.	SAMPLED RESPONDENTS
			F 1	F 2	F 3	F 4		
1	VP's Residence Completion at Karen - 7937B	Director (s)	1	2	1	1	5	5
		Other staff	4	3	4	3	14	4
2	Westpark Housing Project - 7278C (Phase I)							
		Director (s)	1	2	2	1	6	6
		Other staff	4	4	4	3	15	4
3	TSC Headquarters							
		Director (s)	2	2	2	1	8	8
		Other staff	5	4	3	2	14	4
		Sub-Total					**62**	**31**
		Grand total	**243**					**130**

F 1, F 2, F 3, F 4, refers to the Consulting Firms of Architects

Quantity Surveyors, Structural Engineers, Electrical/Mechanical Engineers respectively involved in the projects shown against them.

IPPD May 2010

Source: MoPW's Contracts Documentation and Registry Offices & MoPW's

Based on the table above the researcher interviewed a total of 130 respondents out of a total population of 243 as shown in the table above.

3.3.1 Sources and Nature of Data Collected

The researcher used descriptive survey design to collect data due to vastness of the study population (Mugenda and Mugenda 1999). Both primary and secondary data were sought. The questionnaires contain questions on personal information, knowledge and understanding of the respondents on public building projects management with particular emphasis on leadership skills. Secondary data were obtained by reviewing literature of either published or unpublished materials. Both structured and open ended questionnaires that sought information on general building construction performance, leadership, management, funding and the industry inherent risks were administered to a total of 130 respondents from the Ministry of Public Works employees, consulting firms, directors of construction companies and site agents.

3.3.2 Validity and Reliability

In this study, it was necessary to ascertain the validity and reliability of the instruments used to collect data so that the outcomes are valid and reliable.

Validity – as described by Grinnell (1993) is the degree to which the results obtained from the instruments actually represent the phenomena under studies. For the researcher to ascertain content and face validity, questionnaire and interview schedules were presented before lecturers in the Department of Real Estate and Construction Management at a Seminar at the University of Nairobi where lecturers and fellow students critique to ascertain the validity. It was during the workshop that the instruments were scrutinized and the experts advised the researcher on the contents and impressions of the instruments which were then improved on and constructed based on experts' comments and advice before the final copies were developed.

Reliability – is the measure of degree to which research instruments yield same results under different but comparable conditions (Cohen, Manion and Marrison 2000). Therefore, in order to establish the reliability of the instrument, the questionnaire was tested in other line ministries (Water, Roads and Housing) within Nairobi which were not part of the study sample. The results obtained were used to clarify the vague and ambiguous content of the instruments.

3.3.3 Data Analysis and Presentation Techniques

Data collected by use of questionnaires on the attributes of effective leadership and management functions and the general ability of the sector to undertake construction of public projects on behalf of the government as well as on general challenges the sub-sector faces were analyzed using descriptive statistics in the form of frequencies. Data from the open-ended questions testing the relationship between the variables involved in the study were analyzed qualitatively by arranging the responses thematically, after which main themes and patterns in responses were identified. Responses from in-depth interviews and focus group discussions were transcribed and analyzed in on-going process according to themes, categories and sub-categories that emerged and then tallied to establish the relationship between the independent variables and the dependent variable in the study. Data collected from both quantitative and qualitative attributes of the study were analyzed using descriptive statistics. However qualitative data collected through interview and observation schedule were analyzed according to themes and sub-themes as they emerged.

Data were presented in frequency distribution tables depicting percentages, cross tabulations and weighted average measures which captured the effect of poor leadership in building project performance, functions of management in public building projects, government capacity in projects formulation, planning and implementation within the sub-sector. In addition they depicted and presented funding level process and their impact in the performance of the sub-sector. Responses from in-depth interviews and focus group discussions were presented in words and phrases. Use of Charts, Bar graphs and Maps were involved to illustrate various aspects of the study.

4.0 CHAPTER FOUR : RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter deals with data analysis, discussion and results presentation as received from the respondents comprising technical officers from the MoPW, Consultants, Construction firms' directors, finance officers and client ministries representatives. The results are presented in sections in which first section provides information on the demography, professionalism and legal status of the firms and their personnel as well as on nature of services they provide in the construction industry. The second section provides information on building project management functions and on stakeholders' capacity in project formulation, development planning and programme implementation in public building sub-sector. The third section presents funding level and processes in public building and its impact in the performances of public building projects. The fourth section gives information on the effectiveness of leadership in building project performance. Finally the fifth and sixth present results on potential risks that hinders the performance in the public building projects, criteria for improving and controlling the effectiveness of building processes respectively.

4.2 Management Functions in Public Building Sub-Sector

4.2.1 Demographic Profile of Technical Managers in the Building Sub-Sector

The researcher sent out 130 questionnaires and received back 114 representing 87.7% which is far above the average and therefore provided sufficient data for analysis, discussion and findings presentation. The responses received from cross sections of the respondents were distributed as in Table 4.2.1 below.

Table 4.2.1 Respondents Distribution by Institutions

Institution/Organisation	Questionnaire disbursed	Returned responses	Percentages returned
Staff of MoPW	50	46	92.0%
Consultants	31	28	90.3%
Client ministries	30	22	73.3%
Construction Firms Directors	19	18	94.7%
Total	**130**	**114**	**87.7%**

Source: Field Survey (2011)

Table 4.2.1 shows that the questionnaire and interview schedules were well answered as 87.7% of the disbursed questionnaires were received and analysed. The remaining 12.3% of the questionnaires not returned were either due to those targeted respondents who were involved in the implementation of the projects but were already transferred to other parts of the country or those who could not be traced within Nairobi. The responses obtained, therefore, provided the researcher with adequate ground to proceed with analysis, discussion and presentation of key findings on which recommendations are drawn and discussed.

The researcher assessed the academic, professionalism and experience of the technical personnel and consultants handling public building projects with a view of establishing their knowledge and effectiveness in executing their mandate of planning, organizing and directing public building resources towards positive results in performance of public building projects to achieve economic growth in the country. From the 46 responses received it was discovered that all the technical personnel in the Ministry of Public Works are graduate of university level and above and their experience status are as follows in Table 4.2.2 below.

Table 4.2.2 Academic and Experience Status of Technical Personnel in MoPW

Academic Status			**Years of experience**		
Qualification	No of respondents	% age	No. of responses	Years of experience	% age
Degree	37	80.4%	28	Over 15	60.7%
Higher diploma	5	10.9%	12	10 – 15	26.2%
Diploma	4	8.7%	6	5 – 10	13.1%
Total	**46**	**100%**	**46**	–	**100%**

Source: Field Survey (2011)

The above results show that MoPW personnel have adequate knowledge obtained through conventional training. Likewise they have wide range of experience varied from 60.7% with over 15 years, 26.2% serving at a range of between 10 – 15 years and only a minority 13.1% with experience between 5 – 10 years. These findings therefore made it possible for the researcher to infer that MoPW has qualified staff with vast experience enough to supervise projects successfully. It is also noted that MoPW practices good culture in making appointment based on merit and therefore upholds employment Codes of Ethics in the employment of qualified staff as provided for by Public Service Commission's Act Cap 185 (Republic of Kenya, 1979) and amplified by the Code of Regulations (COR) and the Schemes of Service for the technical staff namely: the Architects, Engineers and Quantity Surveyors.

The researcher further examined the human resource level in the construction firms – one of the major stakeholder in public building projects. The results show that 66.6% of the contractors/directors and construction site agents have at least a diploma in areas of construction/specialization both in building and civil engineering works. Similarly the consulted respondents in categories A – C admitted taking their senior employees for annual refresher courses.

The above results therefore show that the directors/site agents have the requisite basic knowledge in building and civil engineering works and if given the right environment, opportunity and resources would complete the projects in time, within budget, specification and to customers' satisfaction.

The researcher further examined the level of experience of construction directors/site agents The results reveal that building firms' directors are experienced personnel and well equipped with skills and expertise since 16.7% have over 15 yeas work experience in the industry as 27.8% have varying experience of 10-15 years. The industry through the private building firms continues to bring in new professional of which 33.3% are serving in the industry on experience status of between 5-10 years with only 22% newly recruited personnel below 5 years' service experience. These findings are indications that firms in the building sector have experienced directors though the sector is faced with the problem of inadequacy of professionalism due to low level of formal education of the lower cadre personnel in the building firms.

The study found out that out of the 19 construction firms' directors/site agents involve in the seven public building projects in Nairobi, 44.5% are diploma graduates in the field of construction engineering and 22.2% of them are holders of university degree mostly from Asia. Holders of ordinary certificates are 17.7% whereas secondary certificate holders who have served the industry for many years were 11.1%. The remaining 5.5% did not have any formal education certificate. The results above are distributed as shown in Table 4.2.3 below.

Table 4.2.3 – Academic Level of Building Firm's Directors and Employees

Directors				Other Employees		
Level of Education	**No. of Respondents**	**%age**		**Level (Category)**	**No.**	**%age**
Secondary	2	11.1		Below primary certificate	32	30.48
Certificate	3	17.7		Secondary graduates	18	17.14
Diploma	8	44.5		Artisan certificate	33	31.43
University	4	22.2		Craft Certificate	14	13.33
None	1	5.5		Diploma	4	3.81
				Higher Diploma	3	2.86
				Degree	1	0.95
Total	**18**	**100**			**105**	**100**

Source: Field Survey (2011)

The information provided in the table above make it possible to infer that most firms' directors are professional contractors in the field of construction, although at varied formal education; 66.7% are able to provide directive in the field of construction industry, though facing the greatest challenge of working with a large workforce with little or without any professional course of which 30.48% and 17.14% are primary and secondary graduates respectively constituting 47.62% of workforce in the sub-sector.

The results further revealed that 44.76% are holders of artisan and craft certificates. The sector has few employees (13.33%) with mid-level certificates at craftsmanship level with only 3.81% with Diploma. Higher Diploma graduates were minimal at 2.86% while university graduate accounted for 0.95% (Table 4.2.3).

From these results, we can conclude that public building sector is one of the main employers in the country that take workforce with lower level of education and professionals. This in a way results in poor performance in building projects as the sub-sector faces high labour turnout at the building firms' level. Regarding large number of workforce involved as the results above portray, there is need for clear policy guideline to manage the construction firms' workforce in terms of entry restriction for workers by setting an artisan level as the minimum level.

The researcher assessed legal and professional status of technical officers with the intention of getting information on technical staff registration with Board of Registration of Architects and Quantity Surveyors. The study established that all technical staff register with the Board of Registration under different categories with majority being Architectural (50%), Quantity Surveyors (30%), Graduate members QS(13%) as technician QS and technician architect take 4% and 3% respectively. This is an indication that architectural and quantity surveyors are the majority of technical staff in the industry, therefore the sectors have the professionals able to provide good leadership and management in the industry if the policy and management structure is enabling.

The study further assessed legal status of the building firms. It was realised that all the seven firms (100%) under study are registered with the Ministry of Public Works, though under different categories. Four (57.14%) of the firms under general building works whereas two (42.86%) register as specialist contractors. The firms that register with the Ministry of Public Works as general building companies too were discovered to be under different categories as discussed below.

Regarding general building companies, 48% register under category A and implement upto unlimited amount of money. Twenty nine percent (29%) of the company fall under Category B which undertake construction work whose value do not exceed Kshs. 250,000,000/= while 23% undertake up to Kshs. 150,000,000/=.

The companies under category D that register as specialist contractors undertake projects of lower value that goes up to Kshs. 20,000,000/= representing 39% while under category C which undertake work of up to Kshs. 30,000,000/= were found out to be 61%. The results above confirm that the country has well established companies with different capacities which if given effective and efficient management are able to provide satisfactory public building projects to clients.

The survey on the kind of construction work revealed that 38% of the firms undertake building work and civil engineering works, while 30% are electrical firms, 21% are mechanical engineering firms while the remaining 11% take both electrical and mechanical engineering. It was however learned that none of the firms undertake all kinds of construction work. These results show that there are sufficient degree of specialization on the categories and nature of work being undertaken by firms involved in the construction industry.

It was further revealed that specialization extends to employees of the building companies. The main areas of specialization are distributed as shows in the Table 4.2.4.

Table 4.2.4 – Construction Workforce Distribution by Specialization

Specialization / Trade	Frequency	%age
Masons	200	29.85
Carpenters	36	5.37
Steel fixers	33	4.93
Brick layers	20	2.99
Painters	45	6.72
Plumbers	39	5.82
Electricians	25	3.73
Mechanical technicians	15	2.24

Regarding general building companies, 48% register under category A and implement upto unlimited amount of money. Twenty nine percent (29%) of the company fall under Category B which undertake construction work whose value do not exceed Kshs. 250,000,000/= while 23% undertake up to Kshs. 150,000,000/=.

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Plumbers	39	5.82
Electricians	25	3.73
Mechanical technicians	15	2.24

Specialization / Trade	Frequency	%age
Tillers	21	3.13
Glazers	18	2.69
Electrical technicians	17	2.54
Others (Unskilled)	201	30.00
Total	**670**	**100**

Source: Field Survey (2011)

Specialization in the building industry clearly portrays that majority in the lower cadre are masons (29.85%) followed by painters (6.72%), plumbers (5.82%), Carpenters (5.37%), bricklayers (2.99%), electricians (3.73%), steel fixers take 4.93%, while the rest account for percentages as shown in the table above. The findings above are indications that even though building sector is characterised by workforce with lower level of formal education, it has different specialization (careers) particularly in the field of general building work.

Regarding the refresher courses for skills updating, it was found out that building firms (57%) rarely take their junior employees for skills improvements. Nineteen percent (19%) of the firms acknowledge taking their staff for skills updating, while the remaining 24% admit that they do not send their staff for any skills improvement on work. Further probe through interviews revealed that professional skills improvements by the employees of the firms is a personal effort. This clearly illustrates the difficulties among the employees of building firms as opposed to technical personnel who have high profile professionalism and keep on updating their skills. This results to serious knowledge gap between technical staff of MoPW, consultants and the personnel of building firms.

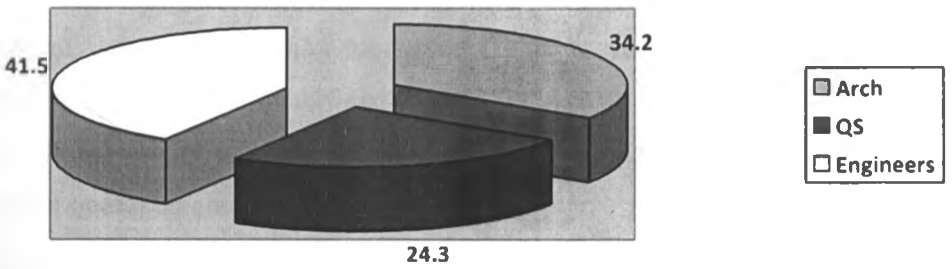
Assessment was made on skills improvement and professionalism updating by technical staff in the Ministry of Public Works. Twenty one representing (45.7%) attend skills updating programs four times a year while 20 (43.5%) confirms twice a year. The remaining 10.8% update their skills once annually. This attests and confirms that the Ministry of Public Works technical personnel have a lot of professionalism in their area of work and are all registered (100%) with the BORAQS or ERB

It is however worth noting that technical work officers are professionals who undertake services of different nature with majority (56%) providing Architectural and Quantity Surveying services, followed by electrical engineering (16%) as civil engineering and

structural engineering takes 13% and 11% respectively while CCTV accounting for only 4%. This shows that MoPW is well equipped with multi-discipline resource personnel in the field of construction able to undertake building works of all categories given good leadership and management which the respondents admitted was lacking.

The researcher further examined professionalism, knowledge background and legal status of the private consultants – a key stakeholder in public building sub-sector. The 28 consultants (100%) who were surveyed are university graduates mainly in the field of building and construction engineering. The results are represented in Figure 4.4.1 as follows:

Figure 4.2.1 Composition of the Consultants by Profession



Source: Field Survey (2011)

Like the technical staff of the MoPW, 34.2% are architects, 24.3% are quantity surveyors while 41.5% are Engineers. From these findings on the level of education and professionalism among the consultants, it is established that public building consultancy is made of professional engineers of different specialization highly skilled hence equipped with both analytical and conceptual skills to guide the construction industry.

As professionals in the building sub-sector, 60% exist on partnership basis, 30% as private liability company while 10% operate as sole proprietors. All the surveyed consultancy firms are registered with MoPW in their respective professions. However, majority of the firms fall under category B (40%) with A and C taking 30% each. This shows that there is clear policy guide to regulate and monitor building consultancy firms in the country. Further, the results on the category by registration imply that the firms have capacity to undertake the

implementation of huge sum of money involved in the sector. To achieve efficiency and effectiveness in construction industry, 53% of the firms are involved in the joint ventureship. The respondents (32%) went ahead to state that they form partnership to pull human resources together and 15% to acquire greater financial power.

The researcher further investigated consortium setups (systems) in construction firms. Directors in construction firms were asked to state whether they have been involved in joint venture. The results are shown in Table 4.2.5(b). The information provided showed that 10(60%) of the directors confirmed having been involved in active joint ventureship while 6(33.33%) have had dormant ventureship. The remaining 3 (7%) were not involved in partnership.

The contacted respondents who were involved in consortium gave various explanations for joint ventureship contracts. The reasons provided included; 28% prefer joint ventureship in order to pull human resources together, 55% to achieve efficiency and effectiveness in terms of technological transfer while 17% form consortium to gain financial power and reduce borrowing ratio for the individual firms. The findings above are clear indications that construction firms prefer joint ventureship to achieve the benefits of efficiency and effectiveness in operation and to pulling resources together.

Table 4.2.5(a) Mode of Operations and Partnership in Consultancy

Mode of Operation in consultancy firms		**Registration Class**		**Reasons for consortium**	
Existence Mode	%ages	Reg. Class	%ages	Reasons	%ages
Partnership	60	A	30	Efficiency/ Effectiveness	53
Private Liability Company	30	B	40	Gain Financial Power	15
Sole Proprietorship	10	C	30	Pull Human Resources	32
Total	**100**		**100**		**100**

Source: Field Survey (2011)

Table 4.2.5(b) Construction Firms Partnership

Construction Firms Level of Involvement in Partnership	%ages	Reasons for Partnership	%ages
Active	60.00	Pull Human Resources	28
Dormant	33.33	Efficiency/ Effectiveness	55
Not involve	16.67	Gain Financial Power	17
Total			**100**

Source: Field Survey (2011)

It is therefore clear that construction firms too have joint ventureship with main intention of increasing their capacity to achieve efficiency and effectiveness in their field and to lower risks in undertaking projects.

The other 16.67% who keep off joint ventureship gave the following reasons: fear of losing identity, unfair profit distribution and legal costs of drawing up joint venture agreement.

From the foregoing discussions, it is clear that public building sector is made up of different stakeholders with varying human resource in terms of physical number of personnel with building firms hosting the highest number of employees. It is nonetheless clear that MoPW and consultancy firms have a pool of professional human resource capable of providing effective and efficient direction in physical projects construction under enabling policy and enhancing management structure, even though the employees of building construction firms have low level of education and professionalism which reduces the general performance of the industry. However, the respondents were concerned that most of the technical staff in the sub-sector have no professional knowledge in leadership and organizational managerial skills.

4.3 Public Building Management Functions and Organizational Setup

The study examined and highlighted management functions and set up in public building projects. The researcher assessed MoPW technical staff knowledge on management position

in the building sub-sector. Forty six respondents (100%) examined demonstrated clear understanding of their roles as technical staff of the MoPW. From the responses provided, it is noted that main role of project technical staff differ depending on Job Group of each officer at the various Departments.

However, out of the 46 respondents contacted, 40(86.96%) formed part of project management organ in MoPW. The 86.96% respondents concurred that as managers they do feasibility study before the project initiation, involve in planning for short-term plans depending on the job description, undertake liaison role, providing correspondences, tendering process, reporting and monitoring projects implementation processes.

The reasons highlighted by the MoPW project managers confirmed that technical staff demonstrated good understanding of their roles as managers. The respondents further provided specific roles they perform on various stages of building projects. At the feasibility stage, technical staff are involved in getting full description of the project or business problem, listing solutions to fix the problem, presenting all available options and resources for delivering a solution and assessment of the feasibility or viability of each option in terms of technology and cost effectiveness and finally selecting the preferred option or solution for implementation of the project.

At planning stage, the technical officers cited preparation of the project plan, drawing of the project organisation structure and planning for manpower and other resources, setting time frame for the project, and planning the expenditure or estimated amount of money on time-phase scale as some of the functions.

The respondents further mentioned clarification of any queries or ambiguity in the tender document as what they do as managers in tendering of the project. At the project implementation stage, the manager oversees the actual construction works by controlling all the activities in accordance with the contract provisions.

Likewise, during the crucial stage of the project termination, the contacted respondents agreed that they review the work on progress against the project quality manual to ensure that clients/customers requirements have been met in terms of functionality and timeliness as the project phases out. From the foregoing discussions, it can be said that technical staff in the MoPW clearly understands their managerial roles. This in a way confirms the earlier finding that 100% of the consulted technical staff in MoPW forms a pool of human resource technocrats with high level of education and professionalism. This confirms the findings by

Austen, *et al* (1984) that MoPW personnel are equipped with both analytical and conceptual skills to advise other Ministries on construction of building projects.

Further assessment was made in consultancy firm to ascertain the understanding of the staff on management and managerial duties. Twenty eight consultants surveyed (100%) unanimously concurred that they are familiar with the term "project management", the term which they said is always associated with their daily life. Like their counterpart in MoPW, Consulting firms' directors were also asked to specify their roles which they cited as the supervision of the construction process and ensuring that quality standards are adhered to, advising the client ministry through the MoPW on the appropriate and economical designs, and contract administration.

These findings confirm that both technical staff of MoPW and consulting firms' consultants have good knowledge of their role. Out of the twenty eight consultants contacted, 3 (10%) have been direct project managers in public building projects.

From the results provided, it can be said that MoPW and consultancy firms have good understanding of their technical roles, hence able to provide technical duties in the busy public building sectors.

Partnership arrangements therefore exist in the entire building sub-sector which has a big number of stakeholders. The study revealed that 42 out of the 46 responses received from MoPW technical staff (95%) confirmed that building sector is composed of MoPW, Consulting firms, construction firms and the clients' ministries. Like the consulting firms, the results show that building firms too have an articulate of association with clauses spelling the roles and responsibilities of each member so as to avoid an oversight/overlap in the managerial duties and further to avoid discord among members.

To ascertain how best partnership is managed in public buildings sector, the researcher sought to know the role of managing partner from the tendering stage up to the end of project closure stage. The managing partner ensures that all the tender documents approved by the project manager are delivered to the employer before the advert in the press is done.

The findings above show that 37 (88.09%) out of the 42 respondents had been in the partnership and have clear knowledge of their roles in the partnership set up. This makes it possible to infer that there is clear job description 69 (93.2%) among partners involved in public building projects. This enhances cordial relationship among the larger number of stakeholders in the public building sub-sector projects. In this case, the two major

stakeholders – MoPW and consulting firms involve in the public building sub-sector enjoy a great deal of partnership benefits.

Based on a study by Barbara and Swailes (2010), it was discovered that public building industry requires strong and enabling leadership. The study assessed leadership ability in the industry to undertake management of public building projects on behalf of the government and clients partners.

In order to examine leadership styles in public building projects implementations and capacity of the consultants to steer vital building projects on behalf of the government to the clients, the researcher sought the opinion of 93 respondents from the three partners. A total of 6- Likert type items were used to determine staff opinion pertaining to their leadership ability. The outcomes as per the researcher's findings were distributed in frequency distribution table based on maximum possible score (A) being *strongly* followed by *Reasonably* (B), *Not Much* (C) and *Not at all* (D) as the minimum score.

The frequency of the responses given in support of the idea helped the researcher to make judgement on the type of leadership adopted in the public building sub-sector by the stakeholders. The outcome as per the researcher's findings from 93 responses from the three partners in the sector (MoPW, building construction firms and consulting firms) are distributed as follows in Table 4.3.1.

Table 4.3.1 – Respondents Opinion on Leadership and Management

1. Team members should be closely supervised in process of duty	**Frequency**	**%age**
A = Strongly	45	48.39
B = Reasonably	25	26.88
C = Not much	14	15.05
D = Not at all	9	9.68
Total	**93**	**100.00**
2. Team members should be encouraged to set their own goals	**Frequency**	**%age**
A = Strongly	35	37.63

B = Reasonably	30	32.26
C = Not much	25	26.88
D = Not at all	3	3.23
Total	**93**	**100.00**
3. Team members made to fear punishment for not conforming	**Frequency**	**%age**
A = Strongly	37	39.78
B = Reasonably	21	22.58
C = Not much	19	20.43
D = Not at all	16	17.20
Total	**93**	**100.00**
4. Members encouraged to have personal initiative in planning daily activities	**Frequency**	**%age**
A = Strongly	17	18.28
B = Reasonably	26	27.97
C = Not much	35	37.63
D = Not at all	15	16.13
Total	**93**	**100.00**
5. Teamwork in decision-making	**Frequency**	**%age**
A = Strongly	20	21.51
B = Reasonably	15	16.13
C = Not much	43	46.24
D = Not at all	15	16.13
Total	**93**	**100.00**
6. Institutional initiative on avenues that foster team members development	**Frequency**	**%age**
A = Strongly	40	43.01
B = Reasonably	25	26.88
C = Not much	20	21.51

D = Not at all	8	8.60
Total	**93**	**100.00**

Source: Field Survey (2011)

Regarding leadership style, the results show that MoPW leadership style is quite authoritarian in nature as 48.39 % indicated that members should be closely supervised on the process of duty without being left on their own to discharge their duties. This erodes personality initiative power of most employees in public building project setup.

In the Public building sub-sector like in any other public or private sectors, the team of professional technical staff of MoPW and the consultants form the management and planning organ in building industry. As the planning, management and key monitoring team, they are in charge of a large number of participants and junior staff under their jurisdiction, and as already noted in Table 4:3.1, they tend to display 48.39% autocratic leadership style which does not promote team building process as 37.63% of the respondents strongly admitted. The respondents were of the opinion that junior technical staff should not be encouraged to set their own goals on behalf of the institutions but exercises their expertise under close scrutiny of seniors. Furthermore the results as Table 4:3.1 showed that 39.78% of the responses confirm that leadership atmosphere among stakeholders in public building sector lead by instilling fear in the juniors to conform other than acting out of personal conviction to pursue common goals. This does not provide motivation to the staff in the sub-sector. These results make it possible for the researcher to call for an urgent need to reverse the autocratic leadership style among the key stakeholders in the sector.

The researcher went ahead to assess motive of the respondents' desire for being in project leadership among the technical staff of MoPW and Consulting firms. Seventy four respondents were examined. Analysis of the responses provided revealed the reasons for seeking leadership position in the sub-sector as increasing scope and freedom through opportunity, decision making and exercising greater power, desire for respect among the colleagues and general public, getting noticed and improving opportunity for advancement and or promotion, dealing with risks in building projects, achieving personal development and/or gaining satisfaction, and improving institutional job satisfaction.

The researcher probed the respondents further to establish frequency trends and general

motive for seeking leadership roles in a project. The outcome of the findings are distributed as shown in Table 4.3.2.

Table 4.3.2 – Respondent's Motive for Seeking Leadership

Reasons/Motive(s)	Frequency	Percentage
1. To improve job satisfaction		
• Very strongly agree	37	50.68%
• Strongly agree	24	32.43%
• Disagree	6	8.11%
• Strongly disagree	7	9.46 %
2. To increase scope and freedom for more decision making and exercise greater power		
• Very strongly agree	39	52.7%
• Strongly agree	21	28.38%
• Disagree	6	8.11%
• Strongly disagree	8	10.8 %
3. Desire for respect		
• Very strongly agree	10	13.51%
• Strongly agree	7	9.46%
• Disagree	27	36.48%
• Strongly disagree	30	40.54%
4. To be noticed and improve the opportunity for advancement and promotion		
• Very strongly agree	12	16.22%
• Strongly agree	10	13.51%

Reasons/Motive(s)	Frequency	Percentage
• Disagree	28	37.84%
• Strongly disagree	24	32.43 %
5. To deal with projects risks		
• Very strongly agree	48	64.86%
• Strongly agree	18	24.32%
• Disagree	3	4.05%
• Strongly disagree	5	6.76%
6. For personal development and or gain Satisfaction		
• Very strongly agree	6	8.11%
• Strongly agree	9	12.16%
• Disagree	29	39.19%
• Strongly disagree	30	40.54%

Source: Field Survey (2011)

From the findings above, the study found out that 48% of the respondents examined seek leadership in public building projects mainly for common good of the organization and attainment of the project objectives. This is a clear indication that building sector's personnel from MoPW and consulting firms put institution's welfare above individuals' interest. As the results show 64.86% very strongly agree that they aspire to be project leaders to handle the potential risks in the building sector. This receives the support of 24.32% who confirmed that they strongly agree that they seek leadership position to act on risks in public building projects. The results above are indications that 89.18% are motivated to be project leaders to oversee general advancement of the sector above their own gains. In a similar rejoinder, 52.7% concurred that they wish to be and or remain in power to increase scope and freedom for decision making and exercise greater power.

In an interview with a cross-section of the respondents who put organizations goal above personal motive supported the ideas that with power, one is able to make decisions and exercise authority to ensure that goals and operational objectives of the projects are

accomplished. This in a way explains why and as noted earlier in Table 4.3.1 in which 48.39% of managers in public building projects practice autocratic leadership in managing public building projects especially during the contract administration stage. The respondents expressed concern that the industry has a large number of stakeholders who have different motives hence autocratic leadership is at times necessary in decision making, resources allocation and execution of daily operation work. This only works well with autocratic leadership set up as 75.27% agreed at different levels (Table 4:3.1).

This finding supports the work of Walker (2007) that during construction stage of a project under traditional contract conditions, the project manager will normally have to adopt a directive or autocratic style as the contractual context places specific obligations upon him or her to act. However, the respondents regrettably accept that, under some circumstances, leader have to adopt autocratic leadership even though it erodes humans relations style but when it turns out to be the best option for solving a problem especially in public building projects that have large number of participants that occasionally require top-down directive to accomplish a task within a scheduled.

The study further discovered that almost a similar large percentage admire leadership to improve job satisfaction in public building sector. The result shows that 50.68% of the respondents very strongly agreed that they wish to be project leaders to improve job satisfaction. This is followed by a higher percentage 32.43% of the respondents who strongly agree with only 8.11% and 9.40% disagreeing and strongly disagreeing respectively. This is a clear confirmation that majority of the project managers in MoPW and consulting firms in public building projects strive to perform their best for job satisfaction purposes and to empower themselves to be able to handle potential risks.

The above results make it possible to infer that technical staff of MoPW works in close partnership with consulting firms to oversee timely and satisfactory projects completion on behalf of the government or clients ministries are all university graduates. They are legally registered with the relevant Boards of Registration with a majority of 50% in architectural and engineering, 30% as Quantity Surveyors and the remaining 20% as graduate members. Furthermore with experienced spanning over 15 years (60.7%) and 10-15 years (26.2%) (Table 4.2.2.), the building sectors has human resource capable of undertaking implementation of huge projects of large sum of money on behalf of the government. This received more support from the findings that majority of the project leaders represented by 83.11% strongly agreed that they aspire to be and remain in leadership to ensure job

satisfaction among the staff with a view of handling potential risks (89.18%) – a process which they admit work well when public building projects are implemented in enabling environment with increased scope and freedom for making decision by the leaders to exercise their managerial process to execute their roles and duties. From these findings, we can conclude that given enabling and facilitating policy, financial resources and necessary infrastructure, then MoPW would be able to provide public building projects that meet desired standards to client ministries.

Further assessment was conducted to find out whether public building projects leaders put personal desire above the common goal of the project. The results in Table 4.3.2 show that 39.19% disagrees with common knowledge that public project officers aspire for leadership to gain respect with another, 40.54% strongly disagreeing with the above common opinion and only 22.97% of the respondents agreeing with the contentions that public projects leaders aspire leadership to gain respect is a clear indication that public projects leaders do not put personal interests above the institutions objectives. This received the backing from another assessment that sought the respondents' opinion on whether they wish to be project leaders in order to be noticed and or improve the opportunity for advancement and promotion. The result shows that 37.84% categorically disagreed as 32.43% strongly disagreed with the assertion that they desire leadership to be noticed, for self aggrandizement and to be promoted.

Personal ambition in public building projects was further represented by 40.54% of respondents who strongly disagreed and another 39.19% (Table 4.3.2) disagreed with the assertion that public building project leaders put personal motive for personal development and or for gaining personal satisfaction above the common mission of MoPW and Consulting firms. The foregoing discussions made it possible to conclude that human resource personnel and other key stakeholders in the sector have professional technocrats who aspire for leadership in the ministry and consulting firms mainly to achieve goals of the sector. It is learned that leaders' main intention for leadership is to encourage their followers to encompass change and elevate interest of the project beyond their personal concerns. This supports the essential characteristic of transformational leadership such as charisma and according to Walker (2007) the concept of leadership includes inspiration, adornment and an equal relationship between leader and the followers. Robbins (1995) assert that transformational leaders pay attention to the concerns and developmental needs of individual followers; they change individual followers' awareness on issues by helping them to look at

old problems in new ways thus making them able to perform by arousing their eagerness and inspire them to put extra effort to achieve group or organizational goals.

To enable MoPW, consulting firms and construction firms' personnel to pursue their roles and duties effectively and efficiently, the researcher carried out an assessment among the respondents to examine their sources of power. A total of 96 respondents were examined. The respondents had the option of choosing from a list containing optional sources of power such as personality power, role power and knowledge power. The source of power and role play were ranked from 1 to 3 with 3 being the highest score (*very true*), 2 (*true*) and 1 (*somehow true)* as the minimum score in descending order. The assessment mainly targeted team/group leaders, team members and contractors within the public building sub-sector. A total of 91 respondents made up of consulting firms, team leaders, consultants, 40 team members and 18 construction firms' directors were assessed. The results were distributed in Table 4.3.3 as follows:-

Table 4.3.3 – Sources of Power in Public Building Sub-Sector

Source(s) of Power and Role Play	**Response**	**Frequency**
1. Team/Group leader power comes from:-		
(i) Personality Power		
Very true	21	23.08%
True	29	31.87%
Somehow true	41	45.05%
(ii) Role power		
Very true	66	72.53%
True	17	18.68%
Somehow true	8	8.79%
(iii) Knowledge power		
Very true	49	53.85%
True	28	30.77%
Somehow true	14	15.38%
2. Team Member power comes from:-		
(i) Personality power		

Source(s) of Power and Role Play	Response	Frequency
Very true	37	40.66%
True	34	37.36%
Somehow	20	21.98%
(ii) Role Power		
Very true	58	63.74%
True	24	26.37%
Somehow true	9	89%
(iii) Knowledge power		
Very true	63	69.23%
True	18	19.78%
Somehow true	10	10.99%
3. Contractor power comes from		
(i) Personality power		
Very true	28	30.77%
True	39	42.86%
Somehow true	24	26.37%
(ii) Role Power	54	59.34%
Very true	24	26.37%
True	14	15.38%
Somehow true		
(iii) Knowledge power		
Very true	59	64.84%
True	24	26.37%
Somehow true	8	8.79%

Source: Field Survey (2011)

The results from the study clearly show that team leaders and members are equipped with both role and knowledge power. Team leader being the top management organ in public building sector are equipped with role power based on code of work and policy principle of quality implementation and general management duties. The outcome of the study reveals that 72.53% of the respondents are of the opinion that team leaders in the building sector

mainly possess role power backed up with reasonable degree of knowledge power 53.85% the respondents acknowledged. The study however learned that team leaders have very low personality power ranked at 23.08% resulting into poor interpersonal relationship; hence poor leadership that confirms the theory that poor leadership is the cause of poor performance in public building sector.

The study results show that team leaders have strong role power graded at 72.53% than knowledge power at 53.85% and very low personality power at 23.08%. In this case the study confirms that Public Works technical officers are only managers equipped with necessary managerial skills but poor leaders due to lack of interpersonal skills. This explains as noted earlier in Table 4.3.1 that 48.39% of the project managers in the sector are autocratic leaders.

Nonetheless, team leaders possession of more role power backed up by knowledge power than personality power is of advantage to the busy public building projects as this enables the sub-sector to ensure that task are accomplished as scheduled and within precision that projects deserve i.e. provision of satisfactory projects to clients. Team leaders' possession of high role power to discharge their duties in time and promptly enables them to ensure that short term quality results are achieved to cope up with the phase of first class performance as recommended by Smith (2004) and Gido, *et al* (2002). However, the respondents' observation and feelings do not go well with the general expectations as it is a confirmation that public sector management personnel in the public building sub-sector are more of managers equipped mainly with managerial skills devoid of leadership traits which ideally is necessary to enable them cope with both technical managerial duties and leadership challenges.

In the contemporary development perspective and especially in public building sector, public projects managers should be good leaders to direct a team of other professionals, team members and other stakeholders in conceiving, planning, organizing and implementing daily operations. It is however in order as Table 4.3.3 shows that team leaders are equipped with knowledge power (53.85%). This enables them to analytically conceptualize realistic and achievable project objectives on behalf of sponsors/owners and to make sure that plans are implemented according to the mission of the project.

The results above make it possible to infer that public building sub-sector have able team leaders (professionals) who possess managerial roles and duties based on policy procedures.

However, from the rankings of the study results, the researcher feels that public building sector team leaders do possess very low personality power (23.08%) which hardly goes well with project leaders who are expected to motivate their juniors to perform willingly. The respondents discussed with concern the need for management reforms in MoPW to enhance leadership ability to take cognizance of the inter-relationship among participants to foster effective leadership role and provide direction in pursuit of a common good; in this case, the results implies that the sub-sector should equip management organ to balance managerial roles alongside effective leadership by providing management unit with role and knowledge in addition to effective personality power. The respondents expressed the need for rigorous training and skills updating programmes with focus on leadership to enhance team leaders' personality power and to enable them to pursue participatory team building and motivate team members to perform satisfactorily.

Investigation was further made on sources of power for team members. The findings show that team members who by default are directly responsible for implementation of project operational objectives and activities should possess technical competencies to execute tasks before them with well defined goals and objectives. It is learned that when team members have knowledge power to comprehend, articulate and translate MoPW and sponsors project goals into achievable activities, then the sector performance is expected to be first class in ranking. Knowledgeable team members would inspire and motivate other service teams by providing the right knowledge and direction to enhance timely completion.

The results in Table 4.3.2 above shows that team members possess high knowledge power 69.23% followed by some degree of role power 63.74% which on cross examination with the respondents shows that even though they possess knowledge power act only on directive from team leaders. As the earlier findings revealed (Table 4.3.1), the autocratic team leadership prevails in the system (48.39%), hence team members are equipped with more knowledge power than role power. It is however regrettable as the results reveal that like team leaders, team members have little personality power (40.66%) but equipped with good role power (63.74%) the respondents acknowledged. This explains why Chandra (2000) proposes that team members being the incumbent of the public sectors projects on behalf of group leaders should inspire and motivate workforce under them to willingly implement huge resources at their disposal into useful end product that meet set standards. The results above concurred with Geoff (2004) findings. In general, management skills (knowledge power) 69.23% seem to be stronger than the personality power (40.66%) among the professionals

leaders, public building sector is not an exception.

It is further noted that in MoPW, team members are role players and have adequate knowledge power 63.74% as the examined respondents confirmed. This goes well with MoPW and in line with BOOM (Republic of Kenya, 1974) which requires that the project team members who act on behalf of project leader which by default is Works Secretary or the Chief Architect or Chief Engineer should have adequate role power to make sure that tasks are completed within the schedules to avoid the problem of cost and time overrun-common challenges associated with building sector. However several studies are concerned with low personality power in public building projects causing poor performance. As D' Souza (2006) remarks, any institution worth its name and charged with responsibility of discharging huge volume of national resources as MoPW should have personnel with good interpersonal skills to provide effective leadership that meet the need for others by performing the needed functions which require strong directives (role) power to ensure effectiveness especially when directions are needed to refocus goals and objectives of institutions. This only goes along well with interpersonal skills to inspire and motivate workforce to willingly pursue common good of the institution. The respondents ranking in Table 4.3.3 however indicates that personality power which requires interpersonal skills scores lowest (40.66%) compared to role power 63.74% and knowledge power scoring the highest at 69.23%.

From the results above, the researcher can infer as Loosemore, *et al* (2003) findings showed that modern managers and leaders rarely reconcile the organization needs for production and efficiency that results into human resource being taken as production instruments and a resource through whom the organization achieves and who should therefore enjoy satisfaction that are not directly associated with financial or materials gains but receiving enjoyments arising from undertaking the work itself. . During discussions, the respondents expressed urgent need to improve and foster personality power to facilitate effective and efficient leadership in public building sector and hence improve the performance in the sector.

Public building sector is devoid without the presence of the contractors who are directly concerned with actual building process and other general work. Research was conducted to examine the role and knowledge power as well as the personality power among the contractors who undertake the construction work within the sector. Contractors like team members (consultants) in the building sector possess stronger knowledge power (64.84%) than role power (59.34) but very low personality power which the respondents rank at

30.77%.

This causes concern especially at the construction site where there is presence of a large workforce with low educational level (Table 4.2.3) in which majority are mere secondary graduates 17.14% without any professional training while 30.48% are without primary certificate and another larger percentage 31.43% are mere artisans (craftsman) the highest number of employees.

The respondents raised concern on poor interpersonal skills resulting to low personality power among the partners especially when team leaders having lowest rank at 23.08%, contractors 30.77% and team members at 40.66% in public building and proposes mutual supportive reform in human resource management set up to provide effective leadership to enable the Ministry to achieve her vision of being a leading institution on construction and maintenance of public building projects and other public works. It emerged during the discussions with respondents that the sub-sector should pursue human resource management reforms to enhance management capacity to provide effective leadership to undertake effective service development, delivery and general implementation to meet set standards for government projects as had earlier been recommended (Republic of Kenya, 2001).

As the results show, technical staff of Ministry of Public Works and private consultants have good disposition of role power back up with sufficient professionalism out of skills acquired through formal trainings which surmount to knowledge power. The study however sought to know from the consulting and construction firms and Ministry of Public Works technical personnel their opinion towards holding individual team members accountable to any omissions that arise on their parts. Ninety three responses were analyzed. The outcome showed that 51% of the respondents were of the opinion that each team member should be held accountable to their own omissions. However 39% agree while 10% did not agree that team members should be held responsible for the omission on their parts.

The researcher probed further to find out reasons for feelings that team member should be held accountable to their own omissions. The results revealed that 90% of the respondents support the idea that individuals should be held accountable for their own omissions. The respondents who agreed were of the feelings that even though team building process is encouraged especially from projects conception, planning, implementation and other decision making process as guided by professional ethics and code of work, but where omission arises from personal motives or failures, the concerned party should be held accountable

individually so as to avoid the tendency of shifting blames. Nonetheless, 10% of the respondents who were of the opinion that team members should not be held accountable for the omissions arising from their parts were of the opinion that when individuals are held responsible for their omissions, then team building process and joint responsibility ceases. From the results provided above, it become possible to infer that management in public works projects is well articulated in terms of positioning and individual responsibility with 90% unanimously agreeing that individuals though in team work process should be held responsible for omissions arising on their parts is a clear manifestation that personnel are not only with knowledge power but also role power as had already been seen.

From the common knowledge and professional code of ethics, team building process requires that team members should have cordial relationship and willingness to have joint responsibility. The study sought the respondents' knowledge on team building process and willingness to work together. Ninety responses from Ministry of Public works, consulting and construction firms were analyzed. The outcome showed that even though team work in public building is encouraged, only 13% admit members willingness to work together, the majority 87% expressed concern that team member hardly desire to work as team. Reasons for discomfort in team work is due to poor mentoring and coaching as it is not well articulated in the professional code of work even though technical staff are grouped in team to pursue certain good on behalf of the partners.

The study discovered that 87% of the team members are unwilling to work together due to suspicious amongst them because of lack of cohesiveness brought about by poor team development at the initial stages. Furthermore across section of the respondents were of the feeling that team members were not willing to work together because of members' selfishness. Members are self-centred and hold their professions as the most important- an attitude which often causes dispute in matter that require consensus.

The study further assessed role balancing and sharing towards a common goal. The outcome showed that role balancing is missing (75%) because of poor interpersonal relationship and autocratic leadership in the sub-sector as reported by the respondents and therefore team members do not have projects goals as their priority. This finding contrasts Giddo *et al* (2002) and Lock (2004) work which recommends that team members should put project goal above personal interest. The respondents further expressed the opinion that differences in opinion and freedom of expression are restricted as seniors have final say on matter of decision making. Respondents went a head to state that matters of projects designs or

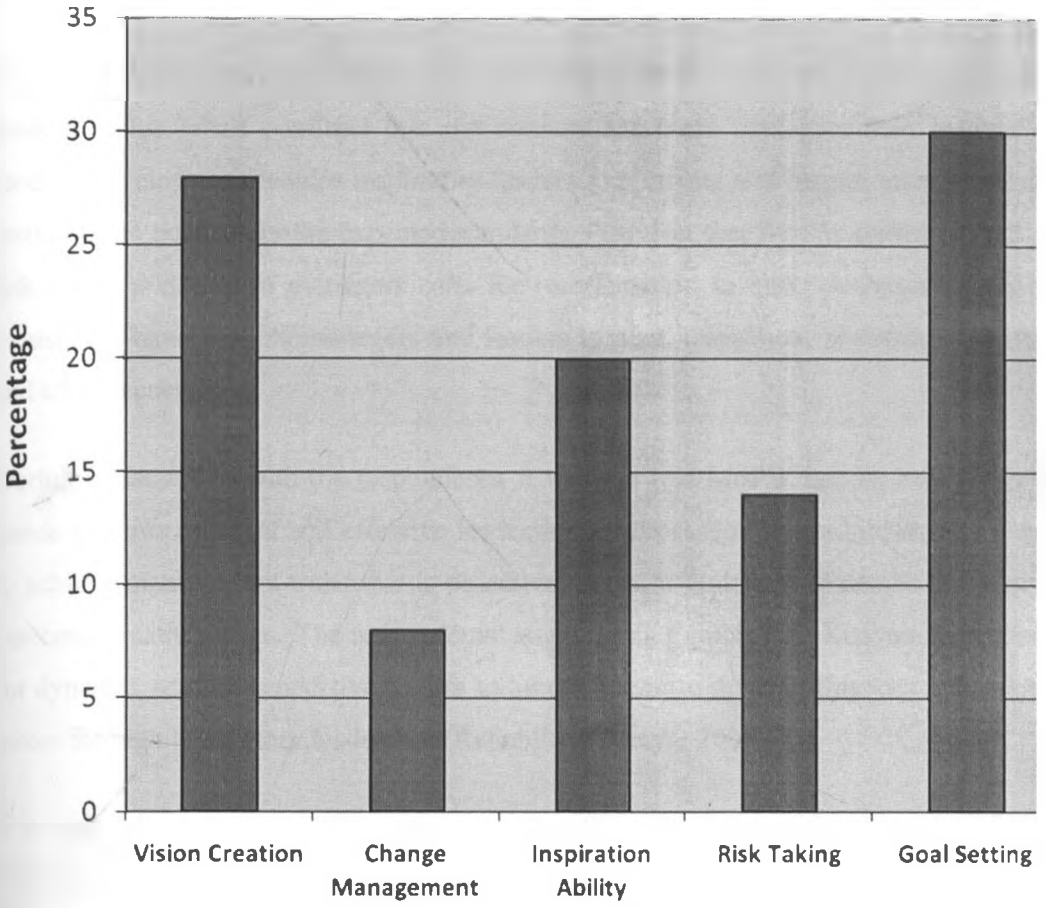
measurement done by junior are subjected to scrutiny and approval by seniors. In an interview with the respondents, there emerged a consensus that unwillingness and differences in opinion and freedom of expression can be sorted out by proper brainstorming and norming stages of the team formation.

From the above results, it become apparent that there is need for re-orientation of team members to work together and the concern for role balancing need to be readdressed so as to enable team members to work together in pursuits of common goals.

4.4 Leadership and Motivation in Public Building Projects

To ascertain the efficiency and effectiveness of leadership in public building projects, a study was made on Ministry of Public Works technical officers' ability on risk-taking, vision creation, staff inspiration, goal setting and change management. The 46 technical officers from the MoPW who were reached for comment ranked leadership in the Ministry as follows in Figure 4.4.1 below.

Figure 4.4.1 – Distribution of Efficiency and Effectiveness of Leadership in MoPW



Source: Field Survey (2011)

The results from Figure 4.4.1 above show that only 8% have capacity to manage changes. Since change is inevitable in a complex industry like public building projects, it become apparent that over 90% of the project leaders are not willing to accept and manage change as reported by the respondents. It is even worrying that only 14% of the MoPW managers are risk takers. However, given rapid changes in the global construction industry, the leaders' unwillingness to take risk and inability to manage changes explain in a way poor performance in the industry due to leadership inability to take aggressive changes. It is however applausable that MoPW technical staff are credited for goal setting ranking highest at 30% followed by vision setting at 28%. These show that MoPW technical team are good planners (goal setters) and quite visionary. During an interview with MoPW technical staff, it was explained that technical staff are good managers because of their knowledge power to plan and set goals but poor leaders, hence bad implementers because of their inability to manage

changes and take risks. Likewise 20% of respondents felt that they are moderate motivators (inspiration).

From the above results, it can be concluded that MoPW staff are good managers but poor leaders. This result confirms that the country has more managers than leaders' yet the modern development require inspiratory leaders to motivate and inspire team members of an institution to perform to the expected standards. The fact that MoPW technical staff are not risk takers and change managers calls for re-orientation to make management unit in the industry to have capable managers and leaders to plan, implement promptly with efficiency and effectiveness.

During a discussion with the respondents, it was felt that MoPW handle heavy investments, hence requires efficient and effective leadership to direct, control and inspire team members to achieve management traits that is proactive, outward looking and results oriented to meet customer's satisfaction. The respondents' suggestions supports the Kenyan Government call for dynamic, mutual supportive reform to human factor to manage finances and other capital actors through inspiratory leadership (Republic of Kenya, 2001).

The respondents were asked to assess whether their leadership skills is strong, fair or low. The intention was to ascertain leadership strength in the Ministry to undertake management of the huge resources at the disposal of the Ministry. The question was answered by 91 respondents from MoPW, consulting and construction firms. The results show that 40% have adequate leadership skills and 60% of the respondents were of the feelings that leadership skills in MoPW are not adequate. Further probe was conducted to ascertain the actual degree. The probe revealed that 23% were of the knowledge that technical staff of MoPW have leadership skill while 19% ranked leadership skill as very strong whereas 58% was of the opinion that leadership is fair. This clearly illustrates the fact that leadership in MoPW is low.

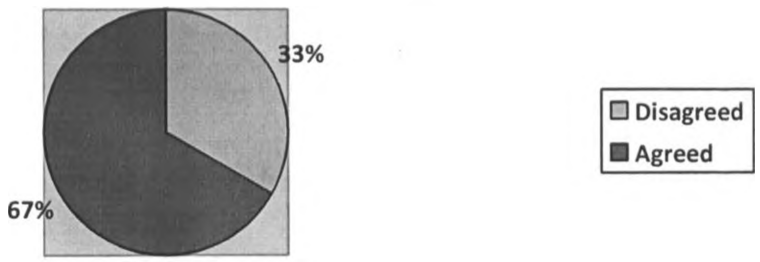
The respondents were asked to suggest modalities of improving leadership in the industry to enhance performance. The respondents suggested further training in Human Resource Management, Construction Laws, Risk Management, Coaching and Mentoring.
From the foregoing discussion, the results apparently shows that leadership in MoPW is low and the Ministry is therefore urged to enhance skills of technical staff to improve their leadership ability to cope effectively with management basics of the industry. With good

leadership, Maylor (1999) noted, MoPW would be able to obtain quality results by influencing team members to perform.

To enable members to work without coercion and effectively, Forty Six technical staff from the MoPW and Twenty Eight respondents from the consulting firms who were assessed agreed that leaders should possess individual skills and positive attitudes which enabled them to co-ordinate huge volumes of resources and a large number of stakeholders in the sub-sector. They unanimously concurred during the interviews and focused group discussions that good leaders should be able to influence and motivate others to perform.

The researcher requested respondents to discuss and explain some of the incentives that influence employees to perform. A total of 74 respondents from the MoPW and consulting firms were reached for comments and had the opinion as shown in Figure 4.4.2

Figure 4.4.2 Respondents Opinions on Provision of Incentives



The study discovered that 67% which represented 50 respondents out of the 74 contacted agreed that some incentives are being provided to staff. Further analysis was made on the sub-sector representation in incentives provision among the stakeholders involved. The fifty respondents who confirmed incentive provision were further segmented inline with the organizational representation. It was discovered that only 11(22%) were from consulting firms while 39 (78%) from MoPW who were the majority agreed that some incentives are provided to in the sub-sector to induce staff to perform better towards a common goal. However, the remaining 33.0% who declined to acknowledge any form of incentive were mainly from construction firms. These results hence show that MoPW and consulting firms motivate personnel to perform. It was realized during the discussion that motivation plays a

crucial role in inducing personnel to perform as people are motivated by various need. The outcome from this discussion confirmed Chandra (2000) findings that a good leader should take note of various need of workers which when provided for, then the individual perform faster, better and without coercion. The respondents who acknowledged the fact that the ministry and consulting firms provide incentive to personnel discussed the incentives in the industry. The respondents agreed that training, recommendation for promotion, exchange programmes, participatory management in planning and other decision making, recognition are some of the most common incentives provided in the industry.

The respondents agreed that the aforementioned incentives are well spelled in the Ministry's Code of Work even though their provision is often overshadowed by authoritarian leadership in the sector as acknowledged by 48.39% of the respondents as shown in Table 4.3.1 and as espoused by Taylor Scientific Theory and supported by Douglas Mc Gregory's theory X which proposed amongst others that to induce adequate efforts and results, the supervisor must threatened punishment and exercise excessive power (supervision). It is this tendency that respondents agreed causes minimal participatory management in the building sub-sector and erodes the expected team building process which results into dismal recognition of human aspect in Job satisfaction. This consequently results into human workforce alienation from the work hence dismal output. The respondents confirmed the reverse when leaders motivate team members and enhance team leadership.

4.5 Public Building Financing Processes and Status

In as much as human factor in MoPW may be strong in management and dictatorial leadership, other variables equally play significant role in determining the performance of the industry. A research was conducted to investigate the funding processes and level in the sector. The study discovered that public building projects require huge capital outlay and most private investors shy off investment in public facilities as they consider them unprofitable. The study sought to understand the funding process in the industry.

The question was answered by 71 (95.95%) respondents from private consulting firms and technical team of MoPW. The results showed that funding process begin when treasury send A.I.E to the clients in two instalments, then the exchequer is released to the implementers. The exchequer is released on quarterly basis by the Treasury for payment. It was however

noted that the process is very slow. The respondents' blamed the slow financial disbursement phase to the project on bureaucracy in the sector.

Financial disbursement from the Treasury delays causing huge losses to the contractors due to high interests charged on credit facilities from bank and suppliers. The cost is passed to the client Ministry by the contractor through levying of interest on delayed payment.

The respondents summarize funding durations as follows:-

Table 4.5.1 – Time Taken between Application and Date of Payment

No. of Days	Duration (in days)	Percentage
1. ≤30	10	10
2. 30 – 44	15	15
3. 45 – 90	50	50
4. 90 – 180	20	20
5. > 180	5	5
Total	**100**	**100**

Source: Field Survey (2011)

From these results, it is learned that majority of the respondents 50% were of the opinion that most of the payments are made between 45 – 90 days from the date of application by the contractor. The situation often gets out of the contractors' control as the responses showed especially where some payments (20%) take over 90 – 180 days from the time of application while 15% cited 30 – 45 days. Only minority 10% cited about 30 days or less while 5% marked over 180 days. Credit facilities offered by banks and suppliers to contractors are short term as 80% take one month while 20% take three months. This confirms the study by Talukhaba (1988) and Mbatha (1986) that delay on honouring certificate is one of the major risks in the performance of public projects.

Delayed disbursement makes most contractors defaulters as they hardly pay on time because public project financiers rarely release funds promptly. The contractors who make application for payment monthly according to PPOA 2006 Edition (Republic of Kenya, 2005) Form of Contract are entitled contractors for payment within a period of one month upon certification of work (i.e. 44 days from the date of application). However, contractors hardly find payments made to them within the period stipulated in PPOA form. As a result both the financier/government) and the contractor incur losses.

The study realized that clause 26 in PPOA form allows contractors to charge interest on delayed payment to them at 3% higher than CBK lending rate to cover interest on bank and suppliers charges on loans. Poor funding or late payment certification is the main cause of delay in projects completion or stagnation because large percentage of project capital is taken by interest charges. The contacted respondents raised concerns that project managers who are directly in charge of the projects supervision are helpless as they have no control of the projects funds.

These findings confirms Austen, *et al* (1984) findings that public project managers are mainly bestowed with power to control quality but have no financing power, hence mainly manage by persuasion. From this outcome, it is learned that financing in public building projects is the main bottleneck and main cause of poor performances nearly as 90% of payments are often not honoured within one month from the date of application.

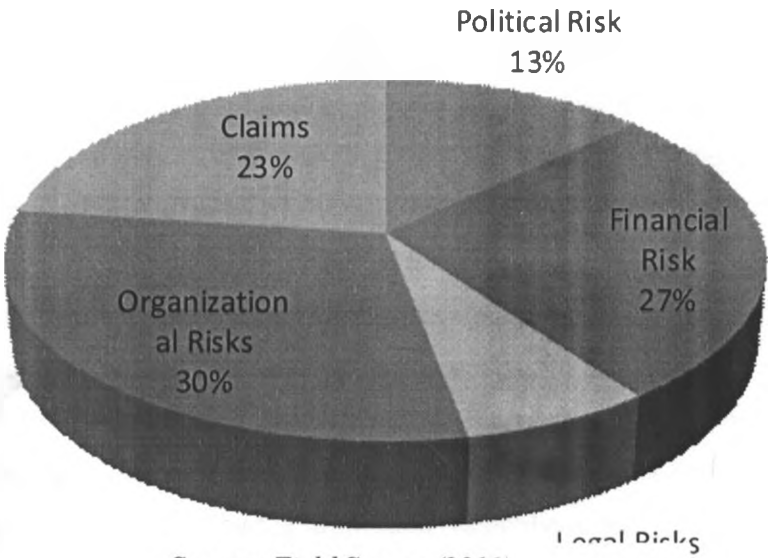
4.6 Public Buildings Projects Risks/Challenges

The study noted that unlike other public sectors, public building sub-sector is overwhelmed with a number of risks as reported by Flanagan *et al* (1993). To ascertain the nature, magnitude and potential of the risks/challenges in public building projects, the researcher carried out an investigation to identify the sector's potential risks/challenges with the intention of delineating main risks/challenges and stipulating possible solutions as aided by suggestion from the respondents. A study was carried among the four stakeholders in the public building sub-sector which include MoPW, client Ministry, consulting and construction firms. A total of 109 questions representing 95.61% were answered.

The study specifically sought specific risks in the industry as noted by the respondents. Analysis of the responses revealed the following risks/challenges;- Legal risks, Claims, Organisational/managerial risks, Financial risks and Political risks

The aforementioned risks/challenges were discussed by the respondents in an effort to identify the magnitude of effects they have on the projects. The outcome was distributed as in Figure 4.6.1 below:-

Figure 4.6.1 – Potential Impacts of Risks/Challenges in Public Building Projects



Source: Field Survey (2011)

In in-depth interviews, focused group discussions and responses from questionnaires, organisational risk which is mainly managerial risks associated with human errors was noted to bear the greatest risks (30%). It was reported to be the most detrimental risk or drawback in public building project performance. It is mainly due to lack of relevant information which leads to poor implementation and occasioned by slow phase of decision-making. The respondents concurred that organisational risks are majorly managerial caused by bureaucracy in the sub-sector. Lack of information on project causes delay or improper implementation as procedures and basic principles as set by clients or project managers are often not clear. Lack of clarity occasionally results into changes in project definitions. The respondents agreed that organisational challenges or risks are the main causes of public projects failure and late completion. It was suggested that organisational risks/challenges are best solved through sufficient administrative organizational procedures to minimise human errors and enhanced projects designs, planning and estimates analysis before project is initiated.

The outcome further shows that public building sub-sector is often faced with financial challenge/risks ranked at 27% hence the second greatest risk/challenge in the construction industry. Given that building sector involves investment in huge capital on public projects,

therefore requires careful decision on financial policy on short or long term funding, retention of financial reserves for future uncertainty and proper financial prediction on prices of materials which often fluctuate. The respondents concurred that it is not easy to predict inflationary trends in the sector. Proper financial projection required that project financier should have sufficient information on the financial market, but due to constant global financial trends most public building projects are faced with financial risks leading to stalling or delayed completion. This finding supports Ron (1995) that noted that most public building projects are affected by overall decline in global funding since the sector depends on external aid. As a result of dwindling national and global funding, most public projects are faced with financial challenges that result in aggressive adjustment on projects often leading to sub-standard project completion, cut in supplies to the project, erratic or underfunding; deviation from the projected project standard and occasionally abandonment of the project by the contractor or general dismissal of the contractor by project financier which has seen most public projects settled in court or arbitration (Republic of Kenya, 2004).

Since human error are common in public building projects, the financier of public building are faced with huge losses resulting from claims. Claims ranked the third greatest risk/challenge (23%) in the sector. The study discovered that claims in the industry are mainly made by contractors due to employers' inability or unwillingness to honour their contractual obligations or documentation errors occasioned by the consultants on their behalves. Other claims were reported to be made by local authorities or statutory bodies as a result of failures to comply with statutory requirements. The study further revealed that some claims are third parties or other interested parties as a result of damages to home or business properties. Like organizational risks, claims are mainly due to human errors arising either from the principal who commission the project or the agent acting on behalf of the chief principal (government). It was noted that claims can be minimised or avoided through insurances. The study discovered that the claims if not proactively addressed may occasion huge financial lost to the organization.

In isolated field interviews with the respondents, it was suggested that financial challenges/risks in the sector can be minimized or avoided by establishing a dedicated project fund for every project and the use of bonds as a means of payment for work done where the Exchequer has a problem.

Construction industry is probably one of the public sectors with the highest risk as the sector deals with provision of public social goods hence attracts attention of the political arm of the

government. It was discovered that the government is the principal financier of most public building projects and at the same time a key player in the regulatory of the economy through fiscal policies on taxes, tariffs and other important restrictions. Any political instability affects public projects negatively and also erodes public confidence on the projects, and has often seen political clashes on the projects. The study ranked political risks at 13% above legal risk (7%). The study noted that political risk affect demand and supply resulting in prices increases.

It was discovered during the study that public building projects are marked by lots of political disputes causing lack of agreement with other statutory bodies like city council, municipalities, provinces, water boards and other interested parties with regard to method of execution, architectural designs, finishing/repair or adoption of infrastructure to the environment, zoning plans and with compulsory purchases/acquisitions.

Occasionally some public building projects are faced with the political challenge/risk of failure to obtain statutory permit and permission or to receive them on time. Respondents discussed and felt that political challenges can be minimised or avoided by making the implementing institution (MoPW) be independent in the planning and implementation of the projects and that the funds for construction be vested in the project manager to improve accountability as recommended by Garland (2009).

During in-depth interview, focussed groups discussion and responses from questionnaires ranked legal risks at 7%. It was realized that it occurs as a result of insufficient insight in all legal requirements on the projects. Lack of adequate insight causes improper environment assessments on the project, lack of adequate safety measures, planning and implementation procedures which eventually result into losses and often delayed completion or stalling of projects.

During interviews and discussions with the respondents, it was suggested that legal risks/challenges due to insufficient insight could be solved through provision for proper impact assessment, tenders, invitation and evaluation before permits for project initiation is granted.

From these results it was therefore possible to conclude that public building sub-sector is overwhelmed with risk as a consequence of uncertainty. The organisational risks (30%) as a result of human errors causes the greatest threat and heavy financial losses due to pricing, increment, time overrun and failure to meet expectations. It became a major concern among

respondents especially on realization that MoPW staff who are the immediate agents implementing public building projects have low risk taking skills (14%) as shown in Figure 4.6.1. From these results, the study is in support of Kholi *et al* (2008) calls for urgent need to re-train of MoPW's technical staff to have broader understanding of the industry's risks since it is noted that risk management begin with analysis of risk itself. The respondents agreed that proper risk management is possible when project planners and implementers have greater understanding of the risk, hence greater possibility of achieving project goals by making realistic designs, plans, reducing cost overruns, minimising losses, delays and increasing greater certainty of project completion with desired specification.

4.7 Performance of Public Building Projects

The study aimed at assessing the performance of public building sector with the intention of determining strength and weakness of the sub-sector so as to formulate future performance benchmarks for the MoPW to be in focus with Kenya Vision 2030. Given that the country relies on MoPW and other stakeholders in production of public building projects- the main social facilities for citizens, the efficiency and effectiveness of production are matters of concern for the government and general public. This is due to the fact that public projects take huge portion of public resources and any decline in the performance result to enormous losses to the economy. The study hence examined the performance of the sub-sector since 2002 with the intention of determining the efficiency and effectiveness of public resources utilization and the satisfaction obtained from the projects.

The study is therefore in line with government efforts that attempted to improve performance through review of functions and management of various public bodies with the aim of enhancing their efficiency and effectiveness to achieve greater output from the intended projects (Republic of Kenya, 2002).

An examination was done to determine the level of government involvement in provision of public building projects and the effectiveness of the government involvement in the provision of social projects. Seven public building projects in Nairobi were assessed to aid in production of sufficient data to make the generalization of the study findings possible. Construction firms' directors/site agents involved in the seven projects were asked to state the

average number of public projects they have had apart from the private ones within Nairobi area since 2002.

The answers provided revealed that 99% have had an average of four projects. This mounted to a total of 27 public building projects handle from MoPW headquarters. The rest of the public projects handled by the government are decentralized to the district headquarters and handled by authorized district team supervised by headquarters personnel

Further a survey was conducted to determine the level of honesty and integrity with which public projects are handled. This was done to assess professional ethics, best practices, transparency and level of accountability. Forty six responses from MoPW who were reached expressed the same opinion that stakeholders in the sector should be treated with utmost respects, courtesy, fairness and impartiality in an endeavour to provide satisfactory services to the Ministry's clients and/or users. The researcher further made investigation to identify transparency with which public building projects are handled. The contractors were asked to state the process through which they secure contract of the projects that they handle on behalf of the government. Eighteen responses analysed were distributed as shown in the Table 4.7.1

Table 4.7.1 Mode of Contract Procurement in Public Building Projects

Tendering Modalities	Responses	Percentages
Open tendering	12	66.7
Selective Tendering	3	16.7
Quotation Request	2	11
Negotiation	1	5.6

Source: Field Survey (2011)

The results from Table 4.7.1 showed that 66.7% secured projects construction contracts through open tendering while 16.7% indicated award through selective tendering where as 11% and 5.6% cited request for quotation and negotiation with MoPW respectively.

In a joint discussion with MoPW technical staff, consultants, directors of construction firms and representatives from client ministries, it was discovered that open tendering is the most common mode of contracts provision by MoPW except in few cases (16.7%) that require

selective tendering particularly when services or goods can only be obtained from some known source or where the services of consultants are required in which case a request for proposal is put in papers of national circulations as the respondents reported. During interviews and discussions, it was found that the other percentages (11%) which involve request for quotation and negotiation with MoPW (5.6%) are rare cases being discouraged by MoPW.

From the above responses, it is possible to infer that the sector subscribes and is committed to values that guide and promote honesty, integrity, works ethics, meritocracy, accountability and transparency. These results further shows the government' (MoPW's) unwavering commitment to timely provision of standardized projects that meet set criteria. It was further learned that few cases of anomalies in contracts award are dealt with by the Public Procurement Oversight Authority which is one of the stakeholders in public funded projects as provided for in the Public Procurement and Disposal Act of 2005 (Republic of Kenya, 2005).

To determine the efficiency and effectiveness in terms of time span that the projects take to be completed, the researcher contacted the respondents during the field survey with the intention of determining timeliness and promptness in projects completion.

The nineteen (19) directors/site agents of construction firms were asked if they have ever completed any public project on time. The responses show that 14 out of the 19 representing 73.68% have never completed on time. For triangulation purposes as supported by Armstrong (2009, the same question was directed to employees of the MoPW and client ministries. Out of the 40 respondents only 10 sated that they know of projects that have been completed on time thus implying that 75% of public projects are complete late. This compares very well with the responses fro the constructing firms of 73.68%. Further, the findings presented in Table 3.1 show that out of the population sample of 27 public projects implemented between 2000 and 2010 only 3 (representing 11.1%) were completed on time and that only two (2) (projects listed as no. 2 and no. 5) within budget. The above confirms the Public Expenditure Review Report of 2003 that projects are never completed on time (Republic of Kenya, 2003).

The study further made inquiry to establish reasons why most public building projects (75%) are never completed on time. Various reasons were highlighted and forwarded by the respondents in an effort to identify and explain causes of late projects completion. Reasons provided were distributed as follows in Table 4.7.2

Table 4.7.2 – Reasons for Late Public Projects Completion

No.	Reasons for late completion	Frequency	Percentage
1.	Wrongful withholding of payments certificates	1	2.70%
2	Failure to certify valuation within the stipulated time	10	27.03%
3.	Failure to honour certified payment	10	27.03%
4.	Lack of details/issuing of late details	4	10.81%
5.	Inclement weather	1	2.70%
6.	Non availability of materials	1	2.07%
7.	Lack of construction knowledge on the part of workers	0	-
8.	Extra work	7	18.92%
9.	Approval of extra work by procuring entity (employers)	2	5.41%
10.	Strike by Workers	-	- -
11.	Increase in price materials	1	2.70%
	Total	**37**	**100%**

Source: Field Survey (2011)

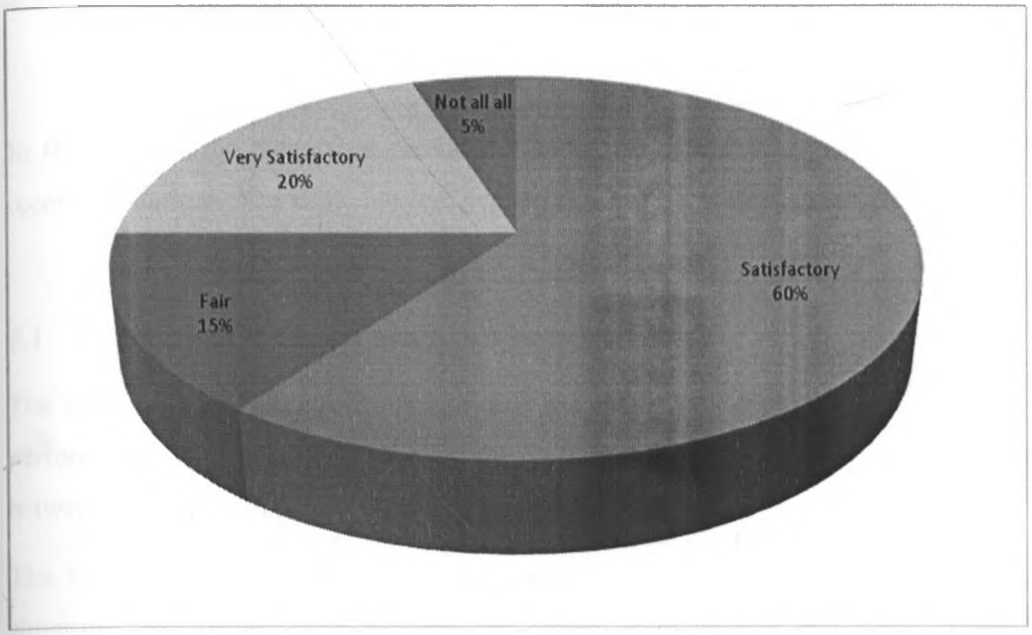
Failure to certify valuation within the stipulated time and failure to honour certified payments were noted to be the main causes of late projects completion since both ranked at 27.03% of the total reasons for late completion. As was noted earlier Figure 4.6.1 (30%) of the challenges facing the industry is mainly human/organisational errors. As the results shows, certification of valuation statements from the contractors by the MoPW/consultants within the 14 days deadline from the time of application/submission id hardly met as MoPW/consultants often delay to carry out their contractual obligations. Similarly, the Employer/client ministry delay to honour certified payment which according to PPOA Form Clause 23 requires that payments be made to contractors within 44 days upon submission of an application. From this outcome, it is possible to say that delay in payment is one of the causes of late projects completion and is due to lack of commitment to pay contractors on time. The researcher therefore calls for culture change within the MoPW to enhance timely valuation honouring and timely payment to certified payment vouchers.

Extra works (18.92%) and approval of extra works by employers (5.41%) respectively were noted to be the third and fourth reason for failures to complete work on time. As Figure 4.6.1 shows, most public building projects are faced with the challenge of lack of clarity on projects design, procedures and basic principle as set by clients or projects management units, as a result project definition often changes leading to extra work to contractors. This makes many contractors to request for time extension to accomplish extra activities. The study discovered that extra work that lead to late projects completion is caused by poor projects design plans and financial estimates. These findings call for need to improve on projects designs, plans and estimates to achieve projects precision and improve on timely service delivery in an endeavour to meet set deadlines in all activities and satisfy clients' needs.

It was agreed by the respondent that lack of good plan or quality designs amount to carelessness in drawing up contractual work in the Ministry of Public Works. The respondents felt that there is need to improve communication both internal and external to achieve precision in projects design and meet deadlines. It was however discovered that increase in price of construction materials, inclement whether and non availability of materials are inconsequential since each were ranked at 2.70%. Strike by workers in the construction sector and lack of construction materials were noted to be non-existence. From the foregoing discussions it is possible to infer that human failures by financial management organs in the building sub-sector are the main causes of financial crisis in the industry.

As noted earlier, the Ministry of Public Works is charged which the responsibility of facilitating provision and maintenance of adequate stock of physical infrastructure facilities in the country in close liaison with relevant ministries and government departments. The aim as recognized in the vision 2030 is to improve both quality and quantity of existing facilities in order to contribute to attainment of qualitative products completion and efficient services delivery to clients (Republic of Kenya, 2010). The researcher therefore evaluated satisfaction clients attained from the government financed projects. A follow up on the government projects within the study area was made. A total of 101 out of 114 respondents made up of representative from client ministries, Ministry of Public Works technical staff, consulting and construction firms participated in answering questionnaires, interviews and focused group discussions. The outcome of the study was distributed as follows in Figure 4.7.1.

Figure 4.7.1 – Opinions on the Effectiveness of Building Projects



Source: Field Survey (2011)

From the information provided in the figure above, 60% of the respondents concurred that end products meet set standards and are within set criteria despite myriad organizational challenges that the industry faces on process of services provision. Furthermore with 20% responses showing that end products of government financed projects are very satisfying make it possible to conclude that Ministry of Public Works is a leading institution in construction and maintenance of quality public building works for sustainable socio-economic development.

The respondents discussed and agreed that Ministry of Public Works is the leading institution in the construction industry as they concurred that even though projects completion rate 75% is often behind schedule, finished projects meet set criteria. The results show and are clear indications that building sector is performing positively in terms of qualitative services provision in the Republic however poorly in terms of schedules and cost overrun as shown in

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

In this chapter the researcher provides a summary of the study findings, conclusions and recommendations. The study also recommends areas for further research.

5.1 Summary of the Study and Key Findings

The study assessed organization structure and leadership effects on construction projects' performance with specific focus on public building projects in Nairobi Region, Kenya, between the years 2000 and 2010.

The study focused on the following objectives: examination of the effect organisation structures and design with a focus on project management structures, identification of management functions in public building projects and examination of the effect of leadership in building project performance highlighting management functions in a public building project that includes planning, directing, staffing, and control with a focus on project formulation, development planning and implementation projects and programmes within the building sub-sector. The study further examined potential risks that hinder performance in the public building projects.

The study relied on organisation theories from the classical era to the modern systems approach to organisation design and management.

Both primary and secondary data were sought by use of questionnaires, interviews and focussed groups' discussions, and review of related literature. A total of 114 responses were returned and analyzed by the use of descriptive statistics. The data are presented in cross tabulation, graphs and charts.

The major outcome of the study is that the completion rate for public building projects is 11.1% over the period of study 2000 -2010 (Table 3.1). As represented in Table 4.7.2 failure to certify valuation within the stipulated time (27.03%), failure to honour certified payment

(27.03), lack of details/issuing of late details (10.81%) and extra works (18.92%) are the major causes of delay in project completion and hence poor performance. Of the four major reasons for late completion, only failure to honour certificates in time is outside the jurisdiction of the organizational structure processes and in particular leadership. The other three such as failing to certify valuations within the required period, lack of details/issuing of late details and extra works are part of the duties of the PM as they form part of the internal systems. The long chain of command for certification or failure to allow effective decision making by the project manager shows a weak structure with only persuasive and communicating duties

It was found that the situation is worse in projects that are handled by Public Works through consultants. The consultants do the certification and the same is passed to the Ministry to approve within its chain of command. This not only creates bureaucracy but also duplication of resources for the consultants are qualified and have insurance indemnity for services offered

The fact that 48.39 % of the respondents reported that team members in MoPW are closely supervised through the formalized bureaucratic structures demonstrates that MoPW leadership style is quite authoritarian and therefore lack leadership skills.

The study also found that the risks in the sub-sector are mainly managerial (30%) failures blamed on human errors that cause poor projects designs and implementation plans. The other risks are claims (23%), financial (27%), political (13%) and legal (7%). Management failures are attributed to ineffective leadership and the failure or lack of appropriate management systems within the organisation. Lack of details is both a management risk and symptom of dysfunctioning organisation.

The results on the other key stakeholders namely the construction firms showed that it is only 22.2% of the directors of the construction firms are holders of university degree certificates while higher diploma holder were 44.5% with only 11.1% who are in possession of either artisan or craftsman certificates. The sub-sector is noted to have greater knowledge and skill gaps in which majority of general workers have very low level of education and professionalism with majority (30.48%) being primary graduates and only 2.86% diploma holders as 0.95% being university graduate, craftsmanship accounted for 13..% as the rest are without any certificates as in Table 4.2.3.

5.2 Conclusion

From the findings of the study, it can be concluded that the MoPW which is the agency responsible for planning and implementation building project has a weaker and obsolete organisation structure based on the Ministry's Buildings Organization and Operations Manual (BOOM) and poor leadership which contributes to poor performance. Project officers in public building sub-sector have formal education and professional training in the fields of Architecture, Quantity Surveying and Engineering but none of them have adequate leadership and management skills hence limited orientations towards human resource management aspects of projects. Further because of the project leaders have little minimal delegated powers to make decisions which therefore hinder their performance.

The results of the study affirms the Null Hypothesis (Ho) that inappropriate project organisation structures and ineffective leadership are the root causes of poor project performance.

5.3 Recommendations

5.3.1 Organisational structure

For the Ministry to meet its core made it must re-structure the existing project organisation structures and the operating systems giving project management prominence and relegating the technical skills of Architect, Quantity Surveyors and Engineers to their rightful place. Further the delegation of project authority should be effective to enable the PM to have high latitude to deal with both the internal and external sub-systems of the project.

Strong and effective leadership is necessary to promote greater competency and to monitor wide range of professionals, contractors, and suppliers who have considerable influence on the way the projects perform and the organisation structure must therefore be re-designed to facilitate this.

5.3.2 Leadership

The Project Manager's roles are basically the management of others skills, use of project management tools and employ appropriate management process. It is therefore recommended

that the project manager should have not only the specialist knowledge but also strong, leadership skills, and necessary experience to reduce the levels of project risk and improve chances of success. Other than the formal authority which he is given by virtue of his position on the project, the manager has still to possess a good level of informal authority or power based on superior knowledge, ability to persuade people to his way of thinking, have a suitable personality and ability to establish rapport with other team members and external stakeholders, a favourable reputation with peers and associate and the ability to build confidence in them, have the patience to listen to problems of peers and willingness to help whenever necessary and least but not last the ability to resolve conflicts among team members All these can be attained by re-training the public project leaders.

5.4 Suggested Areas for Further Study

From the foregoing discussions and explanations in order to improve on productivity and service delivery in public sector construction projects it necessary that further research be carried out following areas in project management:-

(i) Strategic leadership in public building projects

(ii) Organisational culture and behaviour in project administration.

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APPENDICES

APPENDIX 1 – QUESTIONNAIRES

PART I

Questionnaire for Construction Firms Directors and Site managers

1. (a) Name of the organization ----------

   (b) Physical address of the Head office----------

2. (i) What is the legal status of your firm?

   (a) Registered ☐

   (b) Unregistered ☐

   (c) On the process ☐

   (ii)Under what legal structure do you operate?

   (a) Sole proprietorship ☐

   (b) Joint Venture ☐

   (c) Public limited company ☐

   (d) Private limited company ☐

3. Please tick as appropriate your years of experience

   (a) Below 5 years ☐

   (b) 5- 10 years ☐

   (c) 10- 15 years ☐

   (d) Over 15 years ☐

4. Tick as appropriate the level of your education

   (a) Secondary ☐

   (b) Diploma ☐

   ☐

(c) Universuty

(d) Others ☐

Please specify:- Institution..... Country.....

5. (a) How many permanent employees (more than 1 year with the company) are in your firm/ organization? Tick as appropriate

(i) 0-10 ☐

(ii) 11-20 ☐

(iii)21-50 ☐

(iv)51-100 ☐

(v) > 100 ☐

(b) Indicate the number of your employees in terms of their academic qualification

Category	No. of employees
(i) Below KCPE level	☐
(ii) KCSE/KCE graduate	☐
(iii)Artisan	☐
(iv)Craft	☐
(v) Diploma	☐
(vi)Higher diploma	☐
(vii) Degree	☐
(viii) Degree + Post Graduate course	☐

(c) Indicate the area of specialization or trade by numbers

Specialization/trade	No. of employees
(i) Masons	
(ii) Carpenters	
(iii)Steel fixers	
(iv)Briclayers	
(v) Painters	
(ix)Plumbers	
(x) Electricians	
(xi)Mechanical technicians	
(xii) Electrical technicians	
(xiii) Tilers	
(xiv) Glazier	
(xv) Unskilled labour	

6. Indicate the number of Directors/partners in terms of their academic qualification

Category	No. of Directors
(i) Below KCPE level	
(ii) KCSE/KCE graduate	
(iii)Diploma	
(iv)Higher diploma	
(v) Degree	
(vi)Degree + Post Graduate course	

7. (a) Are you registered with the Ministry of Public Works?

Yes ☐ No ☐

(b) If your answer is 'Yes' for the (a) above, under what category?

General Building Works

Category	**Value Limit (in Kshs.)**	
A	Unlimited	
B	Upto KShs. 250,000,000.00	
C	Upto KShs. 150,000,000.00	
D	Upto KShs. 100,000,000.00	
E	Upto KShs. 50,000,000.00	
Others (specify)	Kshs. 5,000,000 – 20,000,000	

Specialist Contractors

Category	**Value Limit (in Kshs.)**	
A	Unlimited	
B	Upto KShs. 50,000,000.00	
C	Upto KShs. 30,000,000.00	
D	Upto KShs. 20,000,000.00	

E	Upto KShs. 10,000,000.00	
Others (specify)	Kshs. 1,000,000 – 4,000,000	

8. What kind of construction work do you engage in?

(a) Building work ☐
(b)Electrical ☐
(c) Mechanical ☐
(d) Civil engineering works ☐
(e) Both (a) and (b) ☐
(f) All the above ☐

9. (a) How frequent do you send your junior staff for skill improvement courses?

(i) Annually ☐
(ii) Twice in a year ☐
(iii)Quarterly ☐
(iv)Rarely ☐
(v) None ☐

i. What criteria do you use in choosing you employees for skills improvement?

(a) Willingness to pay part of the training fees
(b) Level of education ☐
(c) Physical fitness ☐
(d) Age ☐
(e) Apptitude ☐
☐

(f) Sex

(g) Others ☐

Please explain

_____

_____

(c) Are there some incentives provided to induce the employees? Yes ☐ No ☐

(d) If your answer above is yes, specify some of the incentives you do provide to your employees?

(i) _____

(ii) _____

(ii) _____

(iv) _____

10. (a)How many projects have you had in the last ten (10) years?

(i) Below 2 projects ☐

(ii) 2-3 projects ☐

(iii)4-5 projects ☐

(iv)Above projects ☐

(b) How did you secure the contract?.Please tick inside the boxes as appropriate

(i)Negotiation with the Ministry in charge ☐

(iii)Open tendering ☐

(iv)Selective tendering ☐

(v) Request for Quotation ☐

(vi) Others: Please specify---------- How many did you complete on time?----------

11. (a) How often do you make the application for payments?

(i) Monthly ☐

(ii) Weekly ☐

(iii) As agreed with Employers ☐

(b) How fast are payments honoured after certifications?

i. Within 45 days ☐

ii. With 30 days ☐

iii. With in 14 days ☐

iv. After 45 days ☐

12. (a) How do you finance you construction activities

i. Through bank credit/ overleaf ☐

ii. through credit facility from suppliers ☐

iii. Through own funds ☐

iv. Mixture of (a) and (b) ☐

(b) What is the longest duration of credit facility that your suppliers offer?

(a) One week ☐

(b) One month ☐

(c) Biannually ☐

(d) Three months ☐

13. How do you summarize the general financing process by the partner concern?

_____

_____

_____

14. (a) Have you been involved in joint venture contract? YES ☐ NO ☐

(b) If YES how many times

i. Once ☐
ii. Twice ☐
iii. More than twice ☐

Please give reasons _____

_____

(c) please specify how the management is carried on in the system

_____

_____

_____

15. (a) What are the major challenges/ risks do you face on the process of working on public building projects?

_____

_____

_____

(b) List any three risks you faced at the tendering stage in public project

_____

_____

_____

(c) Suggest ways of dealing with risks

_____

_____

_____

16. (a) Have you ever completed any public project on time?

Yes ☐ NO ☐

(b) If you answer above is NO Please state reasons why you have not been able to do so by picking appropriately.

(Rank: Most Frequently = 1; Frequently = 2; Not Frequently = 3)

Reasons	Ranking		
(a) wrongful withholding of payments certifications	☐	☐	☐
(b) Failure to honour certificates in times	☐	☐	☐
(c) Lack of details/ issuing of late details	☐	☐	☐
(d) Failures to certify the valuations with in the stipulated time	☐	☐	☐
(e) Inclement weather	☐	☐	☐
(f) Non availability of materials	☐	☐	☐
(g) Lack of construction knowledge on the part of the workers	☐	☐	☐
(h) Extra works	☐	☐	☐
(i) Approval of extra works by procuring entity (employer)	☐	☐	☐
(j) Strike by workers	☐	☐	☐
(k) Increase in price materials	☐	☐	☐

(c) What suggestions would you make to speed up the completion of public building projects in time?

(i) ----------

(ii) ----------

(iii)----------

(iv)----------

17. (i) Kindly rate the efficiency and effectiveness of the management of public building project by the project managers office by ticking one

a. Very efficient and effective ☐

b. Efficient and effective ☐

c. Fair ☐

d. Not at all ☐

(ii) Please explain you answer

_____

_____

18 (a) Have you ever completed any public building project with in the budget/ contract sum?

Yes ☐ NO ☐

(b) Explain your answer in (a) above

_____

_____

_____

19. Have you ever completed any public project on time?

☐ Yes ☐ NO

PART II

QUESTIONNAIRE FOR PROJECT CONSULTANTS

Personal Data

1. a) State your name

.....

b) State your academic qualifications and area of specialization.....

.....

c) State your firm's name

.....

2. State the legal structure of your consultancy firm

a) Sole proprietorship ☐

b) Partnership ☐

c) Private liability company ☐

d) Public liability company ☐

e) Others (Specify) ☐

3. (i) Have you ever been involved in joint venture contracts/consortium?

YES ☐ NO ☐

(ii)If the answer above is "Yes", state reasons (Tick one)

a) Pulling together resources ☐

b) Increase capacity ☐

c) Financial position ☐

d) Liability ☐

e) Statutory requirement ☐

(iii)In the joint venture, what were your roles?

i) .....

ii) .....

iii) .....

4. (a) Are you registered with the Ministry of Public Works? YES ☐ NO ☐

b) If so, state category

i) A ☐

ii) B ☐

iii) C ☐

iv) D ☐

5. What category or nature of services do you undertake? (tick appropriately)

i) Architectural ☐

ii) Quantity Surveying ☐

iii) Structural Engineering ☐

iv) Civil Engineering ☐

v) Civil and Structural ☐

vi) Mechanical Engineering (BS) ☐

vii) Electrical Engineering ☐

viii) CCTV ☐

ix) Environmental Management ☐

6. (a) Have you come across the term "Project Manager"? Yes ☐ No ☐

(b) If so state the roles of a Project manager

_____

_____

_____

(c) In your view, suggest the requisite leadership qualities of an effective manager

_____

_____

_____

7. Have you ever worked as a project manager in public building project?
If so, list the other consultants, stating their roles?

_____

_____

_____

8. What were the roles of the managing partner from commissioning stage to end of project closure?

i) .....

ii) .....

iii) .....

9. As the management/lead partner in a consortium project implementation, attend to the following question on your leadership style.

i) A = Strongly

ii) B = Reasonably

iii) C= No much

iv) D = Not at all

(i) Team members should be closely supervised at all times

A ☐ B ☐ C ☐ D ☐

(ii) Team members should be encouraged to set their own goals

A ☐ B ☐ C ☐ D ☐

(iii)Team members should be aware that punishment for not conforming is severe

A☐ B☐ C☐ D☐

(iv)Team members should be able to plan their work themselves as much as possible

A☐ B☐ C☐ D☐

(v) Team members should be included in decision making, if possible

A☐ B☐ C☐ D☐

(vi)Team members should encourage avenues that foster their development

A☐ B☐ C☐ D☐

10. (a) Why would you wish to be the project leader? Please tick the appropriate answer

Reasons/cause	**Opinion**			
	Very Strongly agree	**Strongly agree**	**Disagree**	**Strongly disagree**
a) To improve job satisfaction				
b) To gain more respect				
c) To be noticed and improve opportunity for advancement or promotion				
d) To increase scope and freedom through opportunity to make more decisions and exercise greater power				
e) To make a name for themselves				
f) Carrier development and/or satisfaction				
g) To deal with project risks				

(b) Kindly explain your answer in the space provided below

_____

_____

_____

11. What are your main sources of power in dealing with team members and the contractor in order of preference?
Ranking: *3= very true* *2 = true* *1 = somehow true*

i) **Team Leader / Group Leader**

Personality power	
Role power	
Knowledge power	

ii) **Team Member**

Personality power	
Role power	
Knowledge power	

iii) **Contractor**

Personality power	
Role power	
Knowledge power	

12. (i) As a key player in public building, please state and explain major challenges you do encounter in the industry

_____

_____

_____

(ii) Kindly suggest appropriate solution to the challenges/risks listed

_____

_____

_____

13. (i) Kindly rate the efficiency and effectiveness of the management of public building projects by the Ministry by ticking one

a. Very efficient and effective ☐

b. Efficient and effective ☐

c. Fair ☐

d. Not at all ☐

(ii)Please explain you answer

_____

_____

_____

14. Please help us to judge the efficiency of the financial flow (disbursement) between the key players in the industry ticking as appropriate

i) Very efficient and effective ☐

ii) Efficient and effective ☐

iii) Fair ☐

iv) Not at all ☐

15. As a partner in public building project. What recommendations would you make to enhance the management efficiency towards improving the efficiency of public building project process?

19. Have you ever completed any public project on time?

☐ Yes ☐ NO

20. Do you think the type of project organizational structure we have for public *projects is*

appropriate?

☐ Yes ☐ NO

21. If the answer to above question is "No", suggest structural arrangements for the project, giving reasons.

_____

_____

_____

END

PART III

QUESTIONNAIRE FOR MINISTRY OF PUBLIC WORKS TECHNICAL OFFICERS

Personal Data

1 (i) (a) State your name

.....

c) Academic qualifications

.....

d) your department

.....

(ii)Please choose s appropriate your years of experience:

(a) Over 15 years ☐

(b) 10-15 years ☐

(c) 5-10 years ☐

(d) Below 5 years ☐

2. (a) Are you registered with the Board of Registration of Architects and Quantity Surveyors? YES ☐ NO ☐

(b) If so, state category

(i) Architectural ☐

v) Quantity Surveyor ☐

(ii) Graduate member QS ☐

(iii) Graduate Architect ☐

(iv) Technician QS ☐

(v) Technician Architect ☐

3. a) Are you registered with the Engineers Registration Board? YES ☐ NO ☐

b) If so, state category

(vi) Civil Engineer ☐

vi) Structural Engineer ☐

(vii) Highways Engineer ☐

(viii) Mechanical Engineer ☐

(ix) Graduate Engineer ☐

(x) Technician Engineer ☐

(xi) Others (Specify).....

4.As a registered technical staff in the MoPW concerned with the provision of leadership to a large number of stakeholders in public building sub-sector ,how frequently do you go skills improvemts programmes?

(a) annually ☐

(b) twice ayear ☐

(c) quarterly ☐

(d) rarely ☐

(e) none ☐

5. What criteria does the top management in the organization use in the training of serving officers?

(i) Abilty to pay training fees ☐

(ii) Level of education ☐

(iii)No. of years in service ☐

(iv)Meritocracy ☐

(v)Allocation (voyed) ☐

(vi)Others Please Specify ☐

6. What category or nature of services do you undertake? (Tick appropriately)

a) Structural Engineering ☐

b) Civil Engineering ☐

c) Civil and Structural ☐

d) Mechanical Engineering (BS) ☐

e) Electrical Engineering ☐

f) CCTV ☐

g) Environmental Management ☐

7. (i) In your team construction project, do you have a project manager?

YES ☐ NO ☐

(ii) If the answer above is "Yes", state his roles during:

a) Feasibility studies.....

.....

b) Project Planning Stage.....

.....

c) Tendering.....

.....

d) During Project Implementation.....

.....

e) During Project Termination.....

.....

8. In the Project Setup, what are your roles as a technical staff of the ministry?

i) .....

ii) .....

iii) .....

9. (i) As the project manager in a public building project where consultants are involved in the design and supervision works, attend to the following question on your leadership style.

(i) A = Strongly

(ii) B = Reasonably

(iii) C= No much

(iv) D = Not at all

(a) Team members(consultants) should be closely supervised at all times

A☐ B☐ C☐ D☐

(b) Team members should be encouraged to set their own goals

A☐ B☐ C☐ D☐

(c) Team members should be able to plan their work themselves as much as possible

A☐ B☐ C☐ D☐

(d) Team members should be included in decision making, if possible

A☐ B☐ C☐ D☐

10. Why would you wish to be the project leader? Tick as appropriately

Reasons/cause	**Opinion**			
	Very Strongly agree	**Strongly agree**	**Disagree**	**Strongly disagree**
1. To improve job satisfaction				
2. To gain more respect				
3. To be noticed and improve opportunity for advancement or promotion				
4. To increase scope and freedom through opportunity to make more decisions and exercise greater power				

Reasons/cause	Opinion			
	Very Strongly agree	Strongly agree	Disagree	Strongly disagree
5. To make a name for themselves				
6. Carrier development and/or satisfaction				
7. To deal with project risks				

11. (i) What are your main sources of power in dealing with team members and the contractor in order of preference?

Ranking: 3= very true 2 = true 1 = somehow true

a. **Team Leader / Group Leader**

Personality power	
Role power	
Knowledge power	

b. **Team Member**

Personality power	
Role power	
Knowledge power	

c. **Contractor**

Personality power	
Role power	
Knowledge power	

(ii) Do you have any other tool of management? Yes ☐ No ☐ If Yes Please list and explain----------
---

In your view kindly suggest any solution ----------

---

12. (i) In your view, do you think that team members (consultants) should be individually be held omissions/ commissions on their part?

a. Strongly agree ☐
i. Agree ☐
ii. do not agree ☐

(ii) Kindly explains your answer

_____
_____

13. (i) Have you heard of the term project handbook ? YES ☐ ☐

(ii) If yes state how useful it to project

(a) .....

(b) .....

(c) .....

14. As a project Manager/ Practitioner in the Public Works consortium, what would you say about the working relationship between the form various department in reference to :

(i) Willingness to work together?

_____
_____

Please explain your answer and suggest any possible solution in case you feel that members are not willing to work together

_____
_____

(ii) Role balancing and sharing towards a common goal?

_____
_____

(iii) Differences in opinion and freedom of expression?

_____

_____

15. As a Project Manager of a public project appointed by the Works Secretary assess your leadership skills with the following self-assessment. Use a 1 to 6 scale:

1 = almost never

2 = once in a while

3 = less than half the time

4 = more than half the time

5 = most of the time

6 = all the time

16. (a) As a technical officer in the middle cadre of the Ministry, do you believe that the top project management group / leaders (Job Groups P-T) have:

Strongly agree = 1; Agree = 2, Disagree = 3, Strongly disagree = 4

a)	Conceptual skills	☐	☐	☐	☐
b)	Human skills	☐	☐	☐	☐
c)	Technical skills	☐	☐	☐	☐
d)	Ethical standards	☐	☐	☐	☐

(b)What recommendation can you make based on the above?

_____

_____

17. How do you rate the leadership of the Ministry against each of the following?

(Ranking: Very Poor = 1, Poor = 2, Fair = 3, Good = 4, Very Good = 5)

a) Positive attitude ☐ ☐ ☐ ☐ ☐

b) Creating a vision ☐ ☐ ☐ ☐ ☐

c) Inspiring ☐ ☐ ☐ ☐ ☐

d) Goal setting ☐ ☐ ☐ ☐ ☐

e) Risk taking ☐ ☐ ☐ ☐ ☐

f) Managing change ☐ ☐ ☐ ☐ ☐

g) Leading by example ☐ ☐ ☐ ☐ ☐

h) Mentoring and coaching by the leaders ☐ ☐ ☐ ☐ ☐

i) Integrity ☐ ☐ ☐ ☐ ☐

j) Application of ROM ☐ ☐ ☐ ☐ ☐

Kindly explain you answer and suggest any possible solution

_____

_____

18. As a Project Manager in the 21st Century.

(a) Do you posses adequate leadership skills? YES ☐ NO ☐

(b) If YES please categorise the degree

(i) Very strong ☐

(ii) Strong ☐

(iii)Fair ☐

(iv) Not at all ☐

(c) What suggestions would you give to improve your leadership skills?

_____

_____

_____

_____

19. (i) What are the main risks/ challenges you face on the process of work with in public building industry?

_____

_____

_____

_____

(ii) Of the challenges/ risk listed which ones are the most pressing (dominant) on the process of your involvement in the public building projects?

_____

_____

_____

_____

20. Risk Management

When evaluating a project which has failed, it is usually taken as failure to;-

i) achieve the project deliverables

ii) complete on time

iii) complete with budget

iv) satisfy the customers – for buildings and roads the public and the implementing Ministry/Donor.

v) meet the quality requirements

The above five failure characteristics are some of the affects of risks inherent in construction projects. In the spaces provided, please explain in the action plan how you would tackle the problems with regard to public projects.

Problem	**Action**
Objective not clear at start	
Project definition is verbal (no Terms of Reference)	
Project definition is verbal (no Terms of Reference)	
Reasons for project not clear	
Unclear authority/accountability	
Personality clashes	
Senior Managers not committed	
Senior Managers not understanding	
Unrealistic time scale	
Organizational bureaucracy	
Poor motivation	

Problem	Action
Favouritism/Nepotism	
Change of objectives	
Resource limitation	
Change of management	
Political interference	
Natural disaster	
Price / exchange rates	
Policy	

21. Assuming project risks have been identified, as a team member or project manager, explain how you will handle the risk during the following stages of the project

a. Planning

_____

_____

_____

b. Feasibility

_____

_____

_____

c. Final drawings

_____

_____

_____

d. Procurement of resources (having been appointed as Project Manager or team leader)

_____

_____

_____

(e) Contract administration_____

(f). Budgeting_____

22. Please rank the following difficulties in order of how they affect your programme performance during post contract

1 = *Very much*, 2 = *Much*, 3 = *Not much*, 4 = *Rarely*

(i) Inadequate funding ☐ ☐ ☐ ☐

(ii) Delay in fund disbursement to the ministry (from the Ministry of Finance) or to the firm ☐ ☐ ☐ ☐

(iii) Bureaucracy in financial requisitions within the ministry ☐ ☐ ☐ ☐

(iv) Procurement difficulties / challenges ☐ ☐ ☐ ☐

(v) Inadequate supplies ☐ ☐ ☐ ☐

(vi) Inadequate managerial skills ☐ ☐ ☐ ☐

23. Briefly explain the funding process in public building projects

_____

_____

_____

24. (i) How would you summarizes the funding process and its implications with in the industry.....

(a) Very satisfactory ☐

(b) Satisfactory ☐

(c) Unsatisfactory ☐

(ii) Please give reasons for your answer.....

25. (i) Please list down policies and legislative issues that affect financial flow with in the industry

_____

_____

_____

(ii)How do they affect your performance?

_____

_____

_____

(iii)Suggest ways of overcoming the challenges or risks

_____

_____

_____

19. Have you ever completed any public project on time?

☐ Yes ☐ NO

0. Do you think the type of project organizational structure we have for public projects is appropriate?

☐ Yes ☐ NO

1. If the answer to above question is "No", suggest structural arrangements for the project, giving reasons.

20. Do you think the type of project organizational structure we have for public projects is appropriate?

☐ Yes ☐ NO

21. If the answer to above question is "No", suggest structural arrangements for the project, giving reasons.

_____

_____

_____

APPENDIX 3 – SAMPLED LETTER OF COMMISSIONING FOR ARCHITECTS

M/S ----------(Name of Consultant)

Dear Sirs,

Name of Project

WP ITEM NO..... NB..... JOB NO.....

I have pleasure in confirming your appointment as the Architectural Consultant for the above project, which is to be commenced this financial year for the Ministry of Education, Science and Technology.

Your appointment is in accordance with the latest " Conditions of Engagement and Scales of fees for Professional Services for Building Works 1985 issued by the Ministry of Roads and Public Works and particularly I refer you to clauses for time charges and ..... to for the whole project.

Your services will include the preparation and production of a full development plan, sketch plans, working drawings and complete documentation in conjunction with the Quantity Surveyor as well as post contract supervision etc., as applicable.

The Ministry of Roads and Public Works Architect for this project will be Mr..... Superintending Architect Extension..... whom you should contact for all details of the brief, etc. You will be required to liaise with him/her in all matters regarding the client's requirements and written confirmation must be obtained from him/her for any changes to the brief, project content, etc.

You will be required to familiarize yourself with all government procedures in connection with work being carried out on behalf of a government body, and in particular with the Ministry of Roads and Public Works' Drawing Handbook and relent circulars. I refer you particularly to circular No. 9 Ref. B. 14/A/20/12945. Your commission, being under the direction and control of this Ministry will be covered by covered by these procedure and any

such instructions, directives, or regulations that may issued from time to time by the Government of Kenya.

The estimate total project cost (*which includes construction, furniture etc.*) is K£. ---- ..... This cost must not be exceeded and you will be required to send full documentation for tender purposes to this office at the latest by ..... 20.....

It is stressed that your duties as co-ordinator of this project involves keeping the client Ministry, through the Ministry of Roads and Public Works fully aware of its future financial commitment as far in advance as possible.

You are advised that the Ministry of Roads and Public Works proposes to commission the following consultants in connection with this project:-

- Quantity Surveyor.....
  Structural Engineer.....
  Electrical/Mechanical Engineer.....

with whom you should liaise and coordinate your programme in order to meet the tender date as previously stated.

Will you please indicate your acceptance of this commission and confirm that you are in a position to undertake this work immediately without any delay. Please also note that you are required to quote the Works Programme Item Number and Job Number shown on this letter on all correspondence and documentation connected with this project. Will you also please forward the name of the Architect in your firm who will be in charge of this project.

In accepting this offer of commission you should note that you waive all rights of copyright and that clause 209 (comprising sub-clause 209.02 and 209.03) of the 1985 Edition of the Condition of engagement for the professional Services is deemed to apply.

Yours faithfully,

THE PERMANENT SECRETARY

N.O.O

Copy to :-

Chief Architect	Ministry of Public works
Chief Quantity Surveyor	Ministry of Public Works
Chief Engineer Structural	Ministry of Public works
Chief Electrical & Mechanical Engineer	Ministry of Public Works

Group Leader, Attention Mr.

.....

Forward Planning Group

.....

APPENDIX 4 – SAMPLE LETTER OF COMMISSIONING FOR QUANTITY SURVEYOR

M/S ---------- (Name of Consultant)

Dear Sirs,

NAME OF THE PROJECT
WP ITEM ..... NB .....
JOB NO. .....

I have pleasure in offering you the commission as a Quantity Surveyor Consultant for the above project which is to commence soon for the Ministry of Health.
The terms of this commission shall comply with the current edition of the conditions of engagement and scales of fees for professional service for building works issued in 1980 by the Ministry of Works Housing and Physical Planning.
Your commission includes for all the pre and post contract services as specified under clauses ..... to inclusive.
The total construction cost limit which includes construction, furniture etc is K ..... This cost must be exceeded and you will be required throughout the construction process to monitor and advice on the cost of the project and any variations in order to maintain the project within the cost limits set.
Superintending Quantity Surveyor for this project is Mr.
.....Ext. .....
With whom you should communicate on all matters which may arise during the execution of your duties. The Departmental Representative with whom you should liaise is of duties. The Departmental Representative with whom you should liaise is
....., P. O Box
..... Nairobi.
You will be required to familiarize yourself with all Government Policies and procedures in connection with the work being carried out on behalf of a Government Body. Your commission being under direction and control of this Ministry will be covered by these

procedures and such instructions, directives or regulations that may be issued from time to time by the Government of Kenya.

Please indicate your acceptance of this commission by return of post to the Chief Quantity Surveyor and confirm that you are in a position to vary on with this work and to complete within the time and cost limit indicated. Please forward the name of the Quantity Surveyor in your firm who will be in charge of this project.

In accepting this offer of commission you should note that you waive all rights of copyright and that clause 209 (comprising sub-clause 209.02 and 209.03) of the 1989 Edition of the Conditions of Engagement for Professional Services is deemed to apply.

Yours faithfully,

PERMANENT SECRETARY

N.O.O

Copy to:-

M/s ----------Consulting Architect
P O Box 30725
NAIROBI

Chief Architect
Ministry of Public Works
NAIROBI

Chief Engineer (Structural)
Ministry of Public Works
NAIROBI

Sup. Quantity Surveyor, Mr.

.....

Supt. Architect, Mr.

.....

Forward Planning Group

Ministry of Public Works

NAIROBI

File NO. Q.D/.....

File No. PCD

Source: *Republic of Kenya (1989); Conditions of Engagement and Scales of Fees for Professional Services for Building and Civil Engineering Works (Second Edition).*

APPENDIX 5 – SAMPLE NOTICE FOR EXPRESSION OF INTEREST

MINISTRY OF PUBLIC WORKS
(where Public Works is the Procuring Entity)

PRESS NOTICE
EXPRESSION PF INTEREST

The sixth schedule of the constitutions provides for the creation of 47 counties under the devolved government. The schedule further requires that the counties should be operational by the year 2013.

The ministry of public works mandate is to provide basic infrastructure facilities to the public and these include the development and maintenance of government buildings and other public works as per presidential circular No. 1/2008. Pursuant to this thereof, the ministry is already spearheading the design and development of the proposed County Assemblies, Country Offices and Governor residences among others in readiness for the 2013 deadline.

The purpose of our intervention is to provide the physical infrastructure to enable the county governments effectively discharge their duties and functions as provided for in the constitution. To this end the Ministry invites consortia of consulting firms to design and supervise construction of the following.

(i) County Assemblies
(ii) County Offices
(iii)Governors residences

The consortium firms should have wide and well proven experience in the field whose services comprise.

1. Architectural
2. Land Surveying
3. Quantity Surveying
4. Electrical Engineering
5. Mechanical Engineering
6. Civil /Structural Engineering

Eligible potential firms with relevant experience may obtain Request for Proposal Documents from Contracts Documentation Office, 4th floor Ministry of Public Works Ngong Road, in person or against written application upon payment of a non-refundable fee of Kshs. 5,000.00. The non-refundable fee is to be paid in cash to account No. 0-401-000-3520300 at the Cash Office before 4.00 pm on normal working days or in banker's cheque payable to the Permanent Secretary, Ministry of Public Works, Nairobi.

Interested bidders should note that only those meeting the criteria indicated below as a minimum, supported by relevant documents at submission will be considered for further evaluation.

1. Each Consultant must be registered with Ministry of Public Works
2. Provide Tax Compliance for each Consultant.
3. Principals must be registered with respective Boards and be members of at least one professional body and with current practicing licence where applicable.
4. Principals must have 10 years postgraduate experience.
5. Applications should be in a consortium.
6. Being in more than one consortium is discouraged.
7. Each consortium to apply in only one zone. (Indicate preferred other zones in terms of preference).
8. Members of the consortium should not have more than 4 No. projects at pre-contract stage in the Public Sector.
9. Provision of audited accounts of at least 3 years of the last five years will be added advantage.
10. Applicants should provide documentary evidence of experience in projects of similar complexity.
11. The firms to have been in existence for at least 2 years.

Non compliance in above criteria will result in automatic disqualification

Each consortium shall submit one original and one copy of Request for Proposal document clearly marked original or copy and packaged together and should be addressed to:-

The Permanent Secretary
Ministry of Public Works
P. O. Box 30743-00100
NAIROBI.

Or deposited in the ministry of Public Works Tender Box situated on 5th floor Works House Ngong Road, Nairobi or sent by post so as to reach the above address not latter than 14th March 2011.

The candidates or their official representatives who wish to attend the opening of the envelopes at the works house are invited to do so at 10.30 am in the Boardroom on 5th floor.

XYZ
For: PERMANENT SECRETARY