CHAPTER ONE

INTRODUCTION

1.1 General Introduction:

Construction is one of the major industries in the global world- it is the creator of the built environment within which most other economic activities take place. Providing work for a significant proportion of the labour market and accounting for a significant share of the world Gross Domestic Product (GDP). Buildings and other construction products have a pervasive influence on social activity in modern society. The built environment of a society expresses its cultural values, and is a major influence on the visual beauty or squalor people experience. However, houses, roads, factories, offices, schools, hospitals are also part of complex physical infrastructure of daily life.

The Sudanese construction sector is characterized by many small and large projects and high labor intensity; it is also highly dependent on public regulations and public investments. The Sudanese construction industry also has a number of factories and materials suppliers that provide building materials and specialist fittings including but not limited to, concrete, sand, cement, plasterboard, timber, electrical fittings, pumping and heating fittings.

The construction sector is important to Sudan economy and it accounted for 3.2% of the country’s GDP in 2009, and grew by about 10% in 2010 in nominal terms, according to the Central Bank of Sudan. The sector employs 4-7% of the total population. The country has a large demand for construction works (Sal, 2010).
The hard, physical nature of much construction work, often undertaken in a poor working environment, its frequent combined with images of masculine stereotypes to create impressions of what construction work is like. At best a half-truth, the idea of ‘hard men’ dashing around construction sites with devil-may-care attitudes in attempts to make the most out of piece rates and bonuses may be used as part explanation of poor site safety, the young age profile of the workforce, and low-quality work. From this perspective, management may be said to do its best to contain the worst excesses, and is conveniently absolved of responsibility for their causes.

1.2 Definition of Construction Industry

Most definitions describe the construction process and features of the industry’s product as merely indications of what the construction industry includes or does not include. For instance, Colean et al. (1982), Lange et al. (1979), view construction as an aggregate of business engaged in closely related activities. Nam et al. (1989) suggest that, historically, construction refers to all types of activities associated with the erection and repair of immobile structure and facilities. The United States Department of Commerce (1984) defines construction by considering the immobility of its products.

Hillebrandt (1984) defines construction process as covering the parties involved in the construction processes and, to some extent, the suppliers of the industry’s inputs. In the review of statistics on the construction in the United Kingdom "construction” was interpreted to mean resources directly used in construction, the products of construction activity, and financial and operational aspects of the building materials and construction industries.
Considering the participants in the construction process, the various definitions appear to portray the industry as a series of related but discrete activities, persons, or organizations as shown in **Fig. 1**.
Fig. 1 The Construction Industry (Offori G., 1990, p.20)

The construction industry is often defined in terms of the activities and products that are included in, or excluded from it.

1.3 Construction industry sectors:
Construction is diverse. The construction industry includes everything from small project easily handled by a single worker to huge power plants or skyscrapers that require decades of planning and construction, and hundreds of people to complete. Some projects require extensive community and regulatory review, whereas others can be constructed by an owner without so much as a building permit.

Although the construction industry is complex and employs people across a wide spectrum of our economy, not all construction work is equally complex, requires the same skills, or has an equal impact on our economy. Construction is generally grouped into one of four broad sectors: residential, commercial, industrial and infrastructure. These four sectors typically differ in several ways: complexity, size, and type of project; the technology and equipment required; and how the project is funded. As a result of these differences, many designers, contractors or constructors as they often called, manufactures and suppliers specialize in only one or perhaps two project types or sectors.

1.3.1 Residential
The residential sector includes both new construction and renovation of single and multi-family residential properties including single-family homes, small condominiums and apartments.
Buildings in the residential sector are often wood frame and fairly low-tech: sophisticated and complex equipment or construction methodologies are not typically used. Residential projects include projects that are designed and built by the contractor but are more typically designed by architects with support of engineers. Much of the residential sector is built by a small general contracting and specially trade contracting companies.

Most residential projects are privately funded, that is, they don't use government dollars and are financed by the owner or an institution such as a bank.

1.3.2 Commercial

Commercial buildings are typically more complicated than residential projects. This sector includes offices, large apartment complexes, theaters, schools, hospitals and other such facilities. As with residential construction, commercial projects are usually designed by architects with engineers' support.

Often commercial projects use more sophisticated materials and systems than residential projects and therefore led themselves to specialization by the team that designs them and the team that builds them. Hospitals and laboratories, with complicated and costly equipment and very specific design requirements, are good examples of this.

Most commercial projects are privately owned and privately funded, but this not always the case, public buildings - such as schools, municipal buildings, prisons, and libraries – are also typically fall into the sector and they are publicly funded, which means that the government funds the project, using taxpayer money. That in turn, means there are generally extra regulatory requirements that must be followed. For example, the criteria used for hiring contractors to work on public
projects are highly regulated including a requirement that contractors have certain qualifications and that they provide a fix price of work.

1.3.3 Industrial

Industrial projects include refineries, electric stations, chemical processing plants, factories, and similar facilities. These projects are typically highly technical and specialized and are defined less by the architects of the structure than by what goes on inside them. A significant amount of the construction process for industrial projects is devoted to equipment installation.

Industrial projects are often privately owned and financed and, due to their complexity, require close operation between designers and builder. As a result of complicated equipment, systems, and specialized machinery; industrial projects are typically designed engineers not architects and required specialized construction expertise and licensing.

1.3.4 Infrastructure (heavy or horizontal construction):

Construction is not just about buildings. The category of construction referred to as infrastructure includes transportation and service projects such as roads, tunnels, bridges, ferries, and subways. Infrastructure are typically publicly owned and funded. These projects are designed by engineers and require specialized licensing of the contractors.
1.4 Research Components:

1.4.1 Scope of the research:

- This research studies the influences and the importance of the planning processes in the execution of construction projects in Sudan. The overall process of planning since the first step of work breakdown structure as well as the implementation of the basic line is the main concern of the study.

1.4.2 Research problems:

Form the experience and observation of the researcher, the research problem could be summarized as following:

- The planning process is not yet clearly identified among those involved in the construction industry and most companies care nothing about the issue.
- The construction planning is still carried out in traditional ways, with very low performance and productivity.
- Poor or lack planning process is a common symptom besides project improper leading.
- The progress is not monitored and controlled properly.

1.4.3 Research questions:

- Is planning helps in improving the performance levels in construction projects?
- Are constructions plans lead to achieve high productivity?
CHAPTER ONE

INTRODUCTION

• What are the problems expected because of poor planning methods?
• What are the most commonly used tools and techniques in project planning?
• Are there educational syllabi about planning that conducted in the engineering faculties?

1.4.4 Research hypothesis:

The study adopted the following hypothesis:

• Using planning tools and techniques leads to project success.
• Establishing work schedules is essential in planning process.
• Poor planning means poor project outputs.
• Training programs in the planning field are fruitful.

1.4.5 Research Methodology:

The researcher follows a scientific way in conducting the study. Two parts shall be considered, the first part, constitutes the theoretical part of the research where derived from references (books, journals, articles…etc.) and the second part, composed of the practical session which shows the data compilation, analysis and results interpretation in the light of the theoretical part, an Arabic questionnaire was conducted and distributed to the audiences. General recommendations are to be formulated out of the discussion.

1.4.6 Limitation of the study:

This study was confined in construction companies and construction sites located within the territory of the state of Khartoum.
1.4.7 Research Objectives:

This research aims to satisfy the following objectives:

1. To visualize and define the process of planning in the light of the local practice.
2. To identify the shortcoming, that arises in the local methods, used in construction projects.
3. To mention out corrective actions needed to remedy the situation.