

Operation of Utility Services in Multi Storey Buildings: A Review

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Abstract

Multistorey buildings are structures that are built for human habitation, which act as the process, art, or occupation of construction. Structures having more than four storey are referred to high rise structures which may be equipped with elevators, tall stair case avenues lined with rise apartment building. Multi storey building has several floors at different levels above the ground. The dominance of steel in the multi-storey structure is based on tangible client related benefits including the ability to provide column free floor spans efficient circulation space, integration of building services, and the influence of the site and local access conditions on the construction process. For inner city projects, column free floor, speed of construction, pre-fabrication, Environmental, Flexibility, Natural ventilation, Renewable energy technology are in consideration.

Keywords- Electricity, Gas installation, Multistorey building, Utility services, Water supply.

INTRODUCTION

A long process of development by trial and error during the late nineteenth century resulted in the establishment of a set of rule for utility services and layout of sanitary installations which when followed ensured satisfactory performance. It was not necessary for designers to understand the basic principles involve. Departures from established solution even if justified by satisfactory performance and based on sound and principles, were not acceptable. In recent years, problems of size of installation and particularly height of building, unprecedented in this country have had to be solved. Economy of established method has been questioned. Fundamental studies of the hydraulic behavior of utility services have been made principally by the American national bureau of standards and the building research establishments. New problems and methods and the freedom to design for a standard of performance infarct impose considerably more responsibility, required from designers if improved installation are to result, and much more fundamental knowledge than was previously the case [1]. Installation using electricity for power supply, lighting and communication, and water supply for drinking, bathing e.t.c. are now as essential provision in virtually every building.

UTILITY SERVICES

They are services (water, electricity and gas) that are essential in playing a vital role in the economic and social development

of persons and individual existence of life and properties within the building.

Electricity

The era of large-scale power distribution arguably began towards the end of the nineteenth century. The remarkable achievement that transform to modern electricity generation, transmission, and distribution was made possible by a series of invention and discoveries made during the preceding two century involving the generation and transportation of electric energy. Some of the discoveries were conceptual. Others were technical while some involved developing a technology to the point where it was economically practical; to produce and transport an electric power. In the production of electricity practice came first then concept followed. By beginning of the eighteenth century there was an agreement between a group of experimenters (sciences) that rubbing various materials such as glass produce a condition that was called 'electric' and associated with this condition were sparks and properties attraction and repulsion. In 1820, Michael faraday in London showed how this relationship could be used to produce motion.

Water Supply

Pure and portable water is one of the most vital of human needs. More essential on short term basics than food ,it also serve human comfort and conveniences in providing the means of washing ,bathing, cooking cleaning and laundering .In the improvement of food production irrigation ,has a measurable effect on the yield and quality of fruits and vegetable just as the washing of livestock has no meat. The safety of building occupants and the protection the material value of combustible structures and the content of both fire and non-fire proof building is enhanced when fire –hose stand pipe installations are available and overhead sprinkler systems are standing ready to cooperate at any dangerous rise in temperature. The control of environment comfort is often provided by circulating warns water for heat during the winter and chilled water for the removal of heat in summer .In the planning of building the architect, builder, and other engineers assume the possibility if proving for adequate water supplies in the correct quantities. Flow rates and temperatures with proper arrangement for changes and building expansion. For drinking, the water must be palatable bacteriological pure. It is Essential that its inherent chemical contents be controlled or modified to render it useful and to avoid clogging or corroding pipe and equipment. Controls must provide that the section of the building or its equipment can be valued off to

permit repairs or changes. Values, controls, and all equipment must be easily accessible with sufficient space for inspection and repairs. To avoid the encroachment of plumbing on the general aesthetic designs in the later stages of planning both must be considered integrally from the first. [2]. Sources of water to multi-storey buildings are numerous. This could be from rivers, lakes springs, boreholes, wells, ponds, stream, and large rainwater storage tanks. The latter are still in wide use today.

Gas Installations

Gas is a combustible fuel which burns with the luminous flame; it has the virtues of giving almost pollution free production of combustion entirely acceptable in clean air zones, and of flue requirement which are smaller than often very much simpler than those of solid fuel or oil. Recently the use of gas as a fuel has been revitalized by the discovery of natural gas under the North Sea. This has happened at a time of increasing expense and shortage of other fuel, and consequently also manufactured town gas. As a result all gas supplies in the world being converted to natural gas. The government policy is to ensure, as far as possible, the provision of a piped gas supply to domestic consumers, particularly to new building development, as a means of discouraging the future growth of liquefied petroleum gas cylinder.

CONCLUSION

In many cases sophisticated installation for control of alarm, security and other wiring such as electrical control gear are modest when compared with most of other utility services, it is important for everyone consigned with the design, construction and use of the building to be familiar with the general layout and accommodation of utility services and to have an approach of the way such installation function. Driven by the same option of that utility that had inspired vested, Faraday, in 1831 discovered that an electric current was produce in a wire moving near a magnet. This is the principle of the generator and the basis of modern electricity. The main objective of water supply installation is to ensure that water supplied remains uncontaminated, and that there should be no waste of water during supply. As such the school water supplier has a duty every building is provided with the quantity of water available but with the collection ad storage in order to cover the agreed variations and requirements. In this regard, a piped gas supply in the form of town/natural gas or from a bulk liquefied petroleum gas (LGP) storage installation should be planned for new developments.

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