

Space, Contractors and Time Management in Renovation of Hospital and Special Facilities in Kosovo

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ABSTRACT

This paper presents an analysis of the state of projects of renovation or rehabilitation of facilities in which the process of daily performance due to the scheduling cannot be interrupted, such as hospitals, schools and other facilities of special importance.

Such facilities are specific and renovations are necessary due to facilities aging, but also due to regular needed renovations, but the renovation of these facilities is a challenge for contractors as well as for management of these facilities. This applies especially for management of different subunits spaces that cannot stop the working process, while on the other hand there are numerous problems that arise during the performance of these works, which cause very large delays in their execution and therefore make obstacles for the regular functioning of these facilities.

This paper presents the analyses and cases and follow the works of than 3 years in Kosovo Hospital Centre (renovations that have been carried out in all hospitals of the centre), where we analyse the problems related to the execution of works as well as the management problems by facilities management staff.

The main objective of this paper is to present the problems that emerge on the management and organization of spaces of these facilities, as well as problems that companies which execute works in these facilities encounter.

The proposed solution to this dead end between the management of hospital space and contracting companies will provide the only way to eliminate very large delays in execution of works, as well as to release the soon renovated surfaces to be used for the foreseen purpose.

Key words: hospital, management, contractor, facility.

1 INTRODUCTION

"A functional design can promote skill, economy, conveniences, and comforts; a non-functional design can impede activities of all types, detract from quality of care, and raise costs to intolerable levels."

Hardy and Lammers

Hospitals are the most complex of building types. Each hospital is comprised of a wide range of services and functional units. These include diagnostic and treatment functions, such as clinical laboratories, imaging, emergency rooms, and surgery; hospitality functions, such as food service and housekeeping; and the fundamental inpatient care or bed-related function. This diversity is reflected in the breadth and specificity of regulations, codes, and oversight that govern hospital construction and operations..

Based on the projects which were and are being developed in Kosovo, where we have very large problems as the quality of construction as well as the scheduling of work performance. These problems become a more significant problem in premises where the work which is carried out causes disruption of learning process or healing process.

More emphasized and bigger problem arise in hospital facilities when renovations are carried out.

According to the current experience, the problems consequently derive from the companies that perform the works but also by management of these facilities.

2 QUALITATIVE DATA

Problems which appear due to the company's fault:

1. Non-compliance with the scheduling plan
2. Poor quality of work
3. Poor engagement of labour force
4. No professionalism of the teams that executed contracted positions
5. Work in extraordinary circumstances (stress, severe cases of illness of patients, workers obstruction by medical personnel, different requirements from unauthorized persons for various positions)
6. Lack of work coordination / positions not connected among themselves
7. Lack of coordination and organization of working groups
8. Misinterpretation of the bill of quantity

Problems that appear during the execution of works due to the facilities management are:

1. Not emptying the areas where work will be executed,
2. Non-coordination of information with medical personnel where and in which part of the facility the work will be carried or which works will be carried.
3. Very large obstacles of medical workers by insisting on changing BoQ positions,
4. Obstruction due to patients' visits in wards, as large numbers of visitors who come to visit the patients does not adhere to the schedule of visits.
5. Not stopping the daily work in wards where renovation is carried out (as a result of ward managers obstacles but also due to the working process on some wards where it cannot be stopped even for an hour or a day as in the case of dialysis or emergency ward)

3 EMERGING ISSUES-COMPANIES' FAULT

3.1 Non-compliance with the scheduling plan

By analysing all the projects that are carried out in facilities in Pristina hospital centre, one could see that none of projects complied with scheduling plan; delays in execution of works are from one up to 3 years.

Therefore, it is concluded that with the scheduling plan provided by contracting companies, one cannot confirm or ensure that this plan will be respected and company will comply with it. Simply scheduling plan offered by contracting companies, is only a document that meets the procurement and contracting procedures.

3.2 Poor quality of work

The factors which impact the works in quality are as follows:

- Poor material although this factor can be controlled,
- Obstacles during utilizing the material on site
- Obstacles by medical personnel, patients and visitors,
- Different damage by human factor,
- Non professionalism in utilization of specific materials (according to special requirements stated in certain BOQ positions).



Figure 1: Not professional utilization of materials illustrated by putting concrete around trees



Figure 2: Construction waste put on the hospital yard

3.3 Poor engagement of labour force

Companies in these projects usually involve small number of workers, because there is no opportunity to engage a greater number of workforce due to not creating free spaces where construction work has to be completed, therefore the engagement of a larger number of the labour force requires a better organization and a close cooperation with medical staff, in order to create free space for working.

3.4 No professionalism of the teams that executed contracted positions

Companies that have committed to working in KCUC until now have shown a very small knowledge of delicate materials that are used during the performance of work in these facilities. Companies do not have specialized teams in delicate works, hence the lack of professionalism has raised problems outlined in the performance of the complex positions as the timeframe for completion of works as well as the quality of works that are performed.

3.5 Work in extraordinary circumstances (stress, severe cases of illness of patients, workers obstruction by medical personnel, different requirements from unauthorized persons for various positions)

None of companies during the presentation of offers for the work to perform, do not consider circumstances of the work to be carried out, having in mind that the construction work in these facilities varies with work in other objects. Listed companies should during bidding consider the working conditions especially stress and emotional conditions that can affect workers performing work in these positions (worker emotional stress from patients' cases of very serious health condition, severe emotional cases when witnessing a patient death). All these circumstances make it impossible to perform in a qualitative and timely manner.

3.6 Lack of work coordination / activities not connected among themselves

A more emphasized problem of contracting companies is no coordination of work between the different groups that execute works. We also have the problem of not coordinating positions among themselves, there have been:

- many cases when the position is done before the other position which has influenced the quality of the first one,
- damage incurred positions,
- repeating several times the working positions due to the very large area of KCUC's facilities

3.7 Lack of coordination and organization of working groups

Coordination between different groups in most cases is not good at all. This causes obstacles and deadline extensions for completion of works in most cases. More emphasized problems occur in the dismantling and mounting positions, the dismantling positions are done on time, but many teams delayed mounting positions which impacted the given timeframe for completion of the works and created a potential risk to people.

3.8 Misinterpretation of the bill of quantity

One of the most common issues among the companies that execute construction work is misinterpretation or errors in the BOQ that appear due to errors in construction drawing of projects carried out. Consequently, there are lots of problems such as:

- Misinterpretation or insistence to work as per the bill of quantity although for the supervisory body it is not acceptable
- Companies' insistence to justify those positions,
- Executing positions without consulting the supervisory body,
- Management involvement in changing positions or pressure on companies to change the positions without consulting the supervisory body,
- The insistence of the medical staff to execute works in those parts where according to project it was not required to intervene.

4 EMERGING ISSUES-HOSPITAL MANAGEMENT FAULT

4.1 Not emptying the areas where work will be executed

One of the main problems that companies face during execution of works in hospital facilities is not releasing the areas where the renovation needs to take place. This problem affects the scheduling plan of work performed. A very emphasized challenge is releasing wards which have a large number of patients as well as releasing the ward or suspending the functionality in wards, where due to the specifics of diseases that are treated, work process cannot be terminated for not even a single hour (the case of the dialysis ward which could not get renovated although it was planned due to the very large number of patients and health procedures that patients need to undergo in this ward).



Figure 2: Executing works in spaces with patients and medical personnel



Figure 1: Very difficult working conditions with ill patients

4.2 Non-coordination of information with medical personnel where and in which part of the facility the work will be carried or which works will be carried out.

Emphasized delays occur due the lack of medical personnel information regarding positions which will be carried out in different projects, which present problems during the implementation of positions as heads of departments do not allow to execute all renovation positions or the company is forced to perform work which were not included in the project. This happens due to the lack of information flow from management to the medical personnel on the project and the works to be carried out in these units.

4.3 Very large obstacles of medical workers by insisting on changing Bow positions

One of the problems that companies face in carrying out the projects is the KCUC management persistence:

- To change BoQ positions,
- To check the BoQ positions even they were not authorized to do so,
- Begin working with position they thought is a priority

5 QUANTITATIVE DATA

In the table and graph below are presented a number of some companies that have performed renovation work as well as delays the companies created in the completion of these projects.

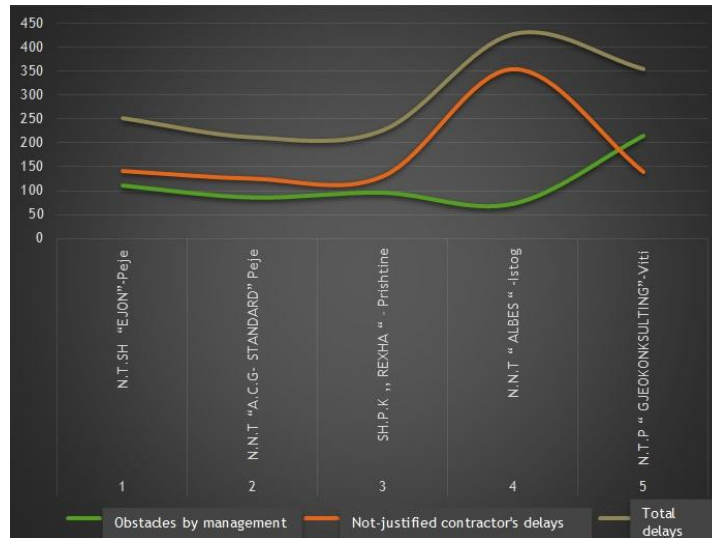


Figure 3: Graph of delays due to management and contractor's fault

Table 1 Different renovation delays due to management and companies' faults

No	Contracting company that has executed projects in KCUC	Delays in work execution due to management of KCUC	Delays in work execution due to company	Total delays
1	N.T.SH "EJON"-Peje	110 days	142 days	252 days
2	N.N.T "A.C.G- STANDARD" Peje	86 days	126 days	212 days
3	SH.P.K., REXHA " - Prishtine	96 days	131 days	227 days
4	N.N.T "ALBES " -Istog	73 days	355 days	428 days
5	N.T.P " GJEOKONSULTING"-Viti	215 days	140 days	355 days

6 CONCLUSION

Based on these facts and observations, the problems that arise are the main factors that influence the scheduling plan of work performance.

The proposal of the ideas or proposals has come after a detailed observing and analysis of these problems, which were possible as due to an active engagement in monitoring all works which are carried out in KCUC.

Therefore, the purpose of this paper is to suggest solutions to these problems, trying to maximally eliminate the delays that are now present in the execution of works that are being carried out now and in the future.

Having in mind what was the cause of problems listed above, it is concluded that:

- Apart from the original construction drawing, it is necessary to design a special project of renovation plan, on which both the contractors and the management have to agree upon. It is proposed that this project is integrated on the project development as it is shown on the scheme below:

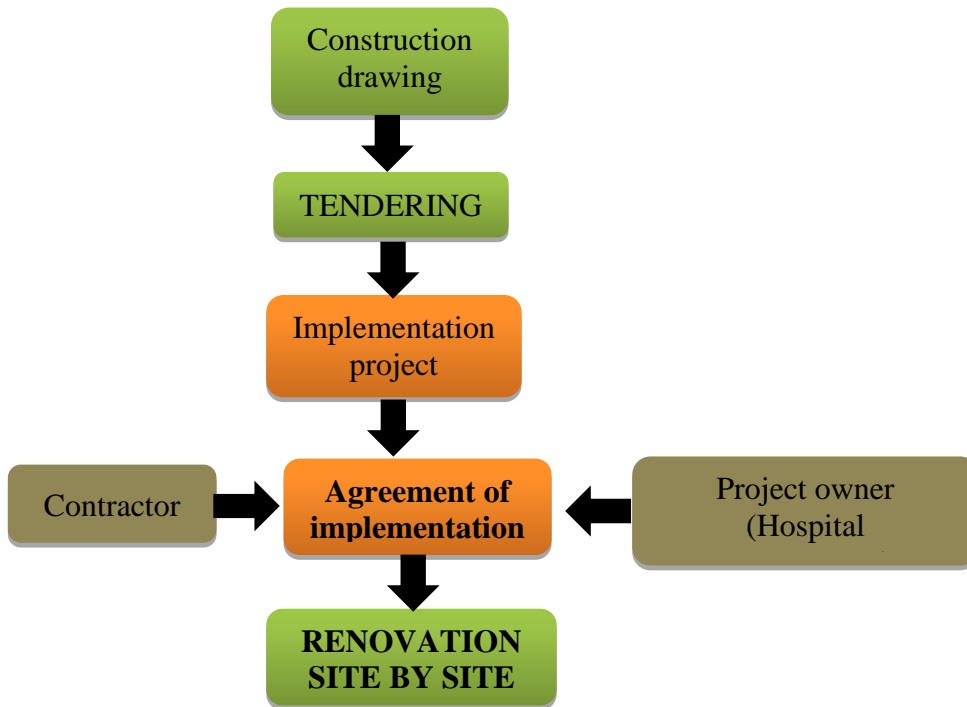


Figure 4: Organisational diagram with the additional step of implementation project and agreement

- In order to illustrate the proposal, a project of Internal Clinic is taken as a study case.



Figure 5 Aerial photo showing the position of the intern clinic of KCUC

In the execution project we propose closing one wing or ward of the clinic as it is shown below.

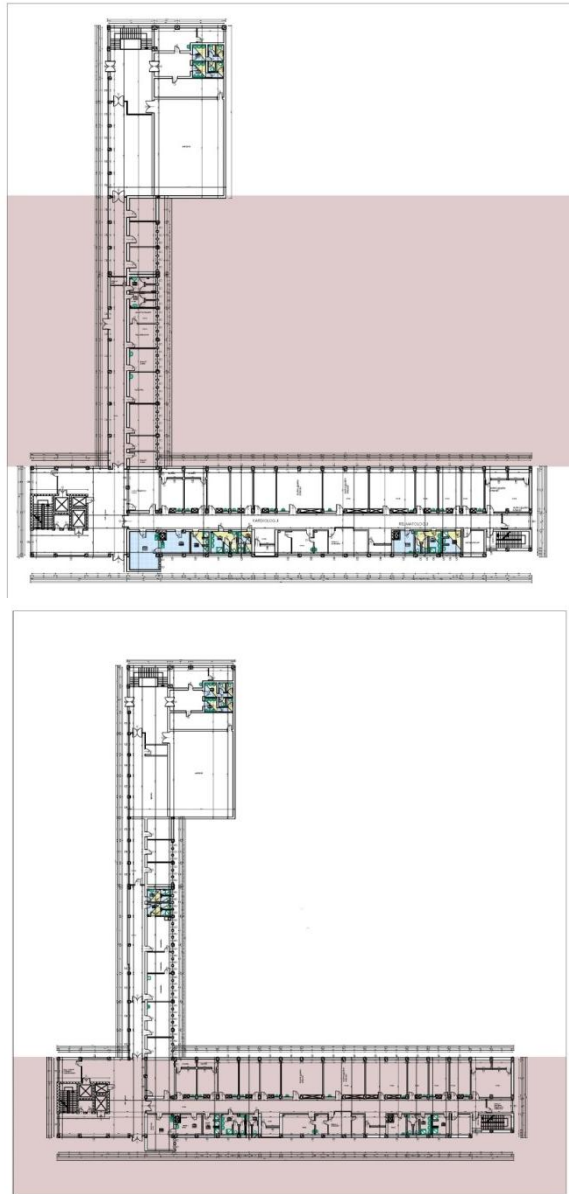


Figure 6 - 11. Schematic view of implementation project

- When preparing the scheduling plan according to the implementation project, it is important to identify and specify the activities which can be done at the same time, in order to be as efficient as possible in the empty ward,
- Good coordination of groups is an important key for successful completion of projects.

6 ACKNOWLEDGEMENTS

We would like to acknowledge the valuable contributions and advice our colleague Arch.Eng. Fadil Dalipi made to this paper, thereby increasing its quality level.

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