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RISK MANAGEMENT IN PROGRAMS AND PROJECTS IMPLEMENTED BY PUBLIC SECTOR - CASE STUDY “BELGRADE ROOFS”

Abstract: *The public sector in Serbia is increasingly using projects and programs to run their own business ventures, thereby emulating the private sector. The goal of these programs and projects is to improve the quality of service that is delivered to users of public services, while improving other properties, reduce cost, scheduling the transfers and more. All the more project tasks are made and project teams are formed to implement the resulting tasks. Due to lack of experience, it happens that these projects are either doomed to failure, or to follow a number of risks, if they are not well identified and analyzed, and if not implemented renowned technology management services. The paper deals with a public program of the Belgrade company as an example of risk management.*

Keywords: *public sector, consumers of public goods and services, risk management, project, programs*

1. INTRODUCTION

Management of housing stock transferred to Serbia and in Belgrade, has the same characteristics as in other countries in transition. Purchase of flats under favourable conditions allowed that 90% of homes are privately owned. The new owners are not financially ready to make a significant independent investment and the state does not have mechanisms to stimulate investment in maintaining and improving the quality of housing.

In times of economic crisis and the general decline of social standards investments in maintenance is first to reduce and completely eliminate, which leads to neglect of maintenance of facilities. As a result, long-term deficit accumulates over time to keep it accelerates the need for reconstruction of buildings and spending more funds than it would normally be required.

Culture of housing is often very low.

Apartment owners do not recognize the interest in maintaining the common parts of the building and its surroundings, taking individual "intervention" in the apartments, common areas and the building without obey of regulation and supervision.

Program "Roofs of Belgrade" refers to the extension or adaptation of flat and pitched roofs of Belgrade, who have a leaking problem, and for which repair requests are submitted in behalf of the Parliament building occupants, and approved by the willingness of owners and users of flats, expressed in the form of collected 51% of land owners, and that there needed urban conditions and compliance with the requirements in terms of static Unimpaired subject and surrounding buildings. It is the highest level of capital maintenance.

The main objective of the project "Belgrade Roofs" is solving the problem of leaking residential buildings in the City of

Belgrade, in a rational and legitimate business method to achieve the concept of affordable and quality housing and various forms of public sector support to raising the quality of housing and its availability to the citizens of Belgrade.

The investor is the Public Utility service "Gradsko stambeno", Belgrade, regular business that generates profits and is able to present the project "Belgrade roofs" in the planned scope and schedule, in accordance with the activities for which the investor is registered, and is filled with formal legal requirement.

The main external stakeholders of the program, in addition to the investor, are Assembly of Belgrade, Belgrade citizens, interested companies and state agencies and institutions. [1]

2. PROGRAM DESCRIPTION

The project concerns the upgrading and renovation of flat and pitched roofs of Belgrade, who have the problem of leakage, and for which repair requests are submitted to the Parliament building occupants, and approved by the willingness of owners and users of flats, expressed as a 51% owner of collected surface and that there needed urban conditions and compliance with the requirements in terms of Unimpaired static stability of the underlying and surrounding buildings.

The program also defines the possibility of so-called roofing of flat roofs, where there is no possibility for recovery housing, where residents work invested in 100% of the contractors. It is the highest level of capital maintenance.

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availability to the citizens of Belgrade.

For monitoring and measuring program (and individual project) performance is responsible project manager, director of investor and the representative of the Founder Public Utility Service "Gradsko stambeno", Belgrade.

The project includes buildings that are located in the system maintenance Public Utility Service "Gradsko stambeno", Belgrade, and that due to leakage problems are the need for maintenance. The central idea of the program is fixing leaking in a more rational and more permanent way, or additions or adaptations as well as so-called roofing, which would solve the problem of leakage and gain new housing units for different users according to established criteria

Time planning involves defining the sequence of activities in the project, estimate the time of execution of certain activities and calculation of the overall project completion. In this procedure, it is more time planning technique of network planning and Gantt charts, both global and detailed plans. It is primarily a global (master) plan the project, then the network plan and Gantt chart of key events, and various operational and detailed network planning and Gantt chart relating to the part of the project, the phase of the project, the individual contractor, etc. Performs a time tracking and scheduling of the project and created a Gantt chart of activities.

The main tasks of the leader to lead the project, inspires atmosphere and articulate a vision. To be a good communicator, and that no autocratic approach, but democratic, or one of the leading alternatives.

The manager must be confident, secure, have a complete picture of the project, reliable and responsible, rational in spending, punishing and rewarding, and well-managed time and resources.

3. RISK MANAGEMENT OF THE PROGRAM

There are certain risks associated with this program and its projects, and for other construction projects for which project execution is at the required level, the product plan and the project management plan for the project. It is primarily the product level and duration of projects and a large number of participants. Also, the ability to make decisions under uncertainty, limited time and very often, the lack of information makes managers in the construction of high-worth population. [2] The program was prepared on the basis of theoretical and practice knowledge and experiences of participants. The program is defined as network-oriented activities with relation of championships and parameters (time, costs, and effects) that form the paths between the initial and final goal of the event or project. The essence of the optimization is to shorten the longest path between the initial and the beneficial event known as the "critical path". [3]

The project team has compiled a list of risks so that the list of risks that are common to all construction projects adding to the list of risks associated with the project. These risks have been identified from surveys of potential sources of risk related to the project, adverse events which carry within them the risk of adverse effects that would happen if we achieve an unwanted scenario. The process of risk management on the program "Belgrade roofs," began with identifying risks, realizing that this is the most important phase of risk management. Since the recognition of risk depends on a lot of experience of managers, and bearing in mind the experience of the project team, we can consider that most of the risks covered by the census of risks.

In the list of the most important risks is carried out and quality risk assessment. What the project team for this specific

project risk register is developed with a brief description of each risk.

Identification of risk

Special care in managing the risks presented to the project dedicated to the prevention of risks.

Some of the underlying risks of the project can be maintained in a table, as follows, and represents the risk register. Also, when considering risk in the project "Roofs of Belgrade", there have been three stages: risk identification, risk analysis and response to risk. Risk sharing on the project, from the point of project risk management, is the breakdown:

- Technical risks
- Organizational risks
- Control the risks
- Financial Risks
- External Risks

Table 1 Risks of Roofing Belgrade

URBANISTIC PROBLEMS
Satisfaction of necessary preconditions of urban
For buildings that are covered by the plan details regulation possible to increase the parameters in accordance with the instructions of the Ministry of Environment and Spatial Planning (parameters increase to 30% where applicable)
For buildings that are covered by the general urbanistic plan ability to define the major parameters
For facilities covered by the detailed urbanistic plan, there is a possibility of using the parameters of the GUP, choose the possibility of using the parameters of GUP
PROPERTY LEGAL ISSUES
Finding solutions to the problem of getting the right location and building permits in the area of acquiring the status of partial ownership of the land
Promptness public enterprises and institutions (securing the necessary permits and approvals)
Efficiency in addressing the conditions and approval of public utility companies (Serbia Electricity, Water and Sewerage, Belgrade Power, Telecom)

Efficiency in addressing the conditions and approvals of institutions (Institute of Cultural Heritage)
SECURITY PROBLEM PARKING PLACES (Jurisdiction of the Secretariat for Urban Planning and Construction)
It is necessary to provide parking spaces associated with new apartment owners or users of parking spaces
Geomechanics, STATICS AND STABILITY OF FACILITIES
Summary of soil mechanics soil, building statics and stability of the underlying and surrounding buildings

Risk identification was based on expert analysis of the project and documented lessons learned. The identified risks are, listed below:

Table 2 Categories of risk

DESCRIPTION OF THE RISK	CATEGORY
Incorrect preparation of bid documents for residential buildings to participate in the project	external factor
An error in the calculation of the estimated construction value	The human factor
Dissatisfaction urban conditions	external factor
Problem getting the right location and building permits	external factor
Inefficiency in dealing with conditions and approval of public utility	external factor
Inefficiency in resolving the conditions and approvals of institutions	external factor

Inadequate soil mechanics soil, building statics and stability of the underlying and surrounding buildings	external factor
Error in the choice of technology.	operations risk
The provisions of the contract or incomplete unadjusted project needs. according to established criteria and needs	operations risk
The delay in the delivery of machinery, equipment and materials.	external risk
Unresolved property / legal issues in the construction site.	operations risk
Incompetence member / members project team and staff in key executive positions (not knowing the technical aspects)	external risk

Given the characteristics of the project such as:

- The project's specific characteristics in terms of investors' commitments to conduct the procurement in accordance with the provisions of the Law on Public Procurement
- The investor is a public company.
- The extent and duration of the project.

It is concluded that the risks coming from the environment of the project, but also a significant number of risk comes from possible shortcomings in project management. Accordingly, the scope of the project as a significant and time, many

potential risks turned his face to be detected in the course of the project.

Risk Analysis

Some of the main risks are analyzed and the effects of environmental conditions, the contractor fails (poor planning, failures in the procurement of equipment and materials), as well as additional requirements and changes to the project.

Plan of responses to risks

Ignoring risk as a response strategy, apply to all risks that fall into the category of risk is very low priority.

Submission of risk, risk strategy agreement, applies to all risks that fall into the category of low risk.

At certain risk mitigation strategies implemented the risk, i.e. prevention strategies and risk event planning.

Monitoring and Control

When it comes to analysis of the project, we can say that this is a strategic project because it is about the highest form of investing, and as a concept is totally unique in the market:

- The long-term (11 years)
- Highly organized (project portfolio)
- A new approach (permanent investment)
- New technologies (new materials and modern technology)
- Unique in the market (new concept, original)
- Method of financing (a great investment for a public company, relying entirely on their own resources, the company generated a profit)

S-specific: unique in its concept and market investor

M-measurable-defined and fully informed and defined

A-attainable-and technologically feasible material

R-realistic-there are all the resources for its realization

T-timed

Monitoring the implementation of adopted response to risk is based on the approved plan and risk management strategies adopted for the answers. Data for a tactical measure must be prepared in the framework of the relevant services as well as owners themselves of risk. All data is then presented in the form of reports, the weekly meetings.

For a period of three weeks shall be audited risk register, the status of existing risks and evaluate the situation after the implementation of newly adopted strategies. Depending on the size of the project is expected to identify a large number of risks during the implementation of the project.

Shall be time monitoring and control of the project in order to determine whether the conduct of the project on the ground is going according to planned and constantly evaluate whether the entire project be implemented within the planned time. In accordance with the actual unfolding of the project in the field will intervene timely actions necessary to compensate for or minimize any delay and the implementation of the project back to planned deadlines?

Continuous monitoring will be conducted at the program site (site), and record data necessary for the temporal control of flow of the project. Records of this information on site will be carried out using standard documentation (construction and building log book), and also through special documents designed for a specific purpose. Based on data obtained from the field shall be updated and new processing network plans and Gantt chart as well as new estimates of the pace of work on the project - a new assessment of the possibilities of completion of certain phases of the project and the project as a whole. Then it will be to draw up appropriate control reports on

progress of the timeframes of the project and the progress of works on the project. There will also be organized various meetings on the progress of works (different in character and with different participants).

The plan is the monitoring and control of resources in order to determine whether the implementation of the project in terms of resources takes place as planned, and that would be timely noticed discrepancies that usually reflected in the lack of certain resources, and to promptly respond with appropriate decisions and necessary actions to eliminate discrepancies, or at least reduced to a minimum.

It is necessary to analyze the plans set out specific types of resources in a given time period - an analysis of specifications of materials, equipment and facilities by type and quantity, the analysis plan required by the labour structure and number, and analysis plans necessary machinery and other equipment performing the types and quantities, and then calculate the amount spent or engaged in the same period, the comparison of these quantities and define the necessary decisions and actions.

Management of other elements of the program relates, inter alia, the quality management program. Quality Management Program includes the planning, execution, tracking and measuring quality control:

- Design,
- Materials and equipment
- Performance (construction),
- Testing and acceptance.

Quality management programs in the field of design will start by establishing project requirements, regulations and standards must be applied. The designer who works the entire project will ensure that all project requirements and set conditions are met, and that by design strictly adhere to regulations and standards, to ensure the required quality of the project. All specifications, procedures,

technical descriptions, calculations, drawings and other must include the set conditions, requirements and standards and thus ensure the achievement of the desired quality of the created project.

Program design will be controlled by the individual phases, and completed the project will be subject to internal control, and technical controls and external audits.

The entire process of managing the quality of design and quality control projects and programs in general, will be monitored through appropriate reporting documents.

This needs to exercise control of all materials, parts, and equipment to be installed within individual projects and programs. This means that first made the identification of all necessary materials, parts and equipment, and to ensure that they are correct for use, or to comply with regulations and standards. In order to achieve this should be required of all participants in the program and each project, then by all suppliers and subcontractors to comply with all the necessary procedures and control measures that provide true and accurate materials, parts and accessories.

The entire process of managing the quality of design and quality control of the project will be monitored through appropriate reporting documents.

4. CONCLUSION

Unlike other projects, construction projects in the studies made on the basis of a single and quite homogeneous methodology, on the one hand, and a number of specific planning decisions. Since the project is a comprehensive study of engagement resources in a logical sequence of activities, stakeholders and the schedule between the initial and final event, it is clear that the construction industry referred to more complicated schemes, given the much longer duration

of the project involved a much larger number of economic and other subjects and more extensive documentation basis. Preparation and execution of projects in construction involves much more precise definition of strategic goals and depositing much greater reality of budgeting, planning more flexible, realistic and accurate schedule of project phases and processes of their implementation.

In accordance with the project set out "Roofs of Belgrade", we can conclude the following:

- Investor Public Enterprise "Gradsko stambeno" Belgrade has a good solvency for the investment that the project represents.

- Investor Public Enterprise "Gradsko stambeno" Belgrade has the necessary resources for investment that the program represents.

- Investor Public Enterprise "Gradsko stambeno" Belgrade is registered for performing activities described in the program.

- The project involves the highest levels of capital maintenance.

- The objectives defined by the project are realistic and achievable set.

- Benefits of the main external stakeholders are great.

- There is an adequate economic and business interest with program implementation.

- There is a social significance of the

program.

- Program has a non-profit character; a newly created value will be reinvested in new investment maintaining the highest level.

After completing a risk analysis to investors in this project there was a choice to accept, and I bear some risk, have him transferred to other participants, to abandon the project or to redefine the excessive risks and to provide for the case of realization of risk. The investor has decided that most of the risks borne by and some is transferred to other participants - primarily contractors. Namely, the tender and contract so made that the risk transferred to the contractor. The most common risks will be associated with contractor selection, contract terms, risks associated with the provision of financial resources, risks from the environment to which they cannot influence, and the risks related to environmental protection. It is well designed process of selecting the winning contractor or organized competition conditions in respect of officers and to guarantee good performance, according to the Law on Public Procurement (regarding that Public Utility Service "Gradsko stambeno", as well as indirect budget, client and contractor selection procedures must be carried out in accordance Regulatory - Public Procurement Law).

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