Classification of construction work types considered with worn of main production assets

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Abstract. The main results of the research consist in comparing the terms of construction work during the period of reconstruction or major overhaul in various normative documents and generalization to single result. Methods are proposed for resolving contentious issues, avoiding unnecessary costs and appealing to arbitration courts.

It is established that in recent years, the methods of organization and construction management have undergone significant changes.

It was revealed that normative documents of various institutions allow different interpretations of terms and concepts, which lead to controversial situations related to the classification of these works by tax authorities. The given problems arise at the stage of completion of construction work, when the adjustment in the design and contract documentation is practically impossible to execute.

An example of construction and installation works implementation during the overhaul of an industrial building is considered and analyzed. Discrepancies in terms are revealed in terms of performance of construction work during the reconstruction or overhaul period.

Keywords: reconstruction, overhaul, current repair, defective statement.

1 Introduction

Problems and difficulties arise at all levels of overhaul and reconstruction program. Some of them are connected with the imperfection of the legislative framework, which often does not take into account all the nuances. The significant worn of main production assets in the country's national economy and the need for an immediate solution to the urgent task of procuring the preservation and restoration of main production assets require their apropos overhaul (current) repair, modernization and technical re-equipment or reconstruction.

At present time, the significant changes in design and construction of buildings have formed around the world [1-3]. New ideas for solving the main problems appear in construction, i.e. information is carefully processed and general assessment of all identified survey results is carried out on basis of verification calculations of bearing capacity, as well as compliance with the conditions of safe facility operation [4-5]. Statistical data is used, a retrospective analysis is carried out to make estimates and comparisons with project data and the correct application of project decisions [6-7].

The quality of the execution of all design activities determines the correct functioning, endurance, comfortable operation, ultimate reliability of the designed building [8-9].

The technical condition assessment of building structures is carried out using normative documents, recommendations and scientific manuals. The main factor is the development of single requirements for determining the categories of structural elements states in building structures. Experts use the acquired statistics in the form of accumulated information and compare with the results obtained [10]. In this case, the results of building structures inspection and verification calculations of bearing capacity are analyzed and checked for maintenance suitability. The received information is checked and statistically processed [11-12].

A full examination of technical condition of building structures is the main direction of construction companies. Such companies are firmly united among themselves by a set of questions and tasks that are related to ensure the building maintenance safety with the implementation of all necessary actions for repair, construction and restoration activities with the execution of design estimates.
2 Materials and methods

Over the past 20-25 years, the materials, equipment, used in construction have changed significantly. But the main changes have been experienced the methods of organization and management, as well as senior staff, aimed at making more profit [13-15].

All participants in construction process are not insured from potential conflicts. Disputes are inevitable. Considering the large amount of documentation, the cost of judicial resolution of the conflict often exceeds the amount of the claim. As a rule, it is believed that “if your lawsuit has gone to court, there will be only one winner – a lawyer”. There are various methods for resolving conflicts: negotiations; mediation; court of Arbitration.

Negotiations mean find a compromise, reach an agreement and end the conflict. The advantage of this method is the minimum cost and certain result. However, the difficulty lies in the fact that this method is useless if one of the parties disagrees.

Mediation requires a third party that enjoys trust of both sides. In this case, compromise can be found if the mediator (usually an experienced expert) manages to convince the conflicting sides to reach an agreement.

The arbitration court is a fairly formalized process using the state system to resolve disputes. It requires a significant investment of time and money. Using the judicial system, a decision will be found even if one of the parties is not inclined to take it.

Consider some of the possible causes of disputes in the construction industry.

The problems of correct usage of concepts (terms) “overhaul” and “reconstruction” are currently especially relevant. Separation and classification of these concepts are necessary both for production of construction and installation works, acceptance of completed works and payment, as well as for determining the taxation procedure. Russian Federation Urban Planning Code article No. 190 provides the most comprehensive information on construction, overhaul and reconstruction, methods of work, construction control, from the registration of land plots to the commissioning of facilities, depending on their technical characteristics and their destination. It should be noted that there are no such concepts as “repair”, “current repair”, and “cosmetic repair” in Urban Planning Code, since these works are not regulated by Russian Federation Civil Code article No. 51. It does not disclose the concepts of “construction”, “overhaul”, “reconstruction”, “current repair”, but references are made to article No.14 of Urban Planning Code. Accordingly, the Civil Code does not specify which category the work belongs to. All of them are classified as work performed under a construction contract or a paid services agreement.

Using the mentioned regulatory documents, it would seem that you can perform works. Indeed, work can be performed using data from a technical survey of buildings and structures, defective statements, working drawings based on them, estimates approved by the parties in the contract agreement.

However, problems may subsequently arise. The fact is that it is quite difficult to determine the fine line between reconstruction, repair and overhaul. The decision on the accounting of costs by tax authorities and the implementation of repair work depends on what types of work will be assigned. The costs of capital or current repairs (there is no explanation of the terminology) are taken into account in the income tax expense of clause 1 of the article 260 of the Russian Federation Tax Code. And the costs of reconstruction are written off to amortization of fixed assets increasing their value and, of course, taxation. In Tax Code (TC), concepts and terms are used in the sense in which they are applied in the relevant branches of legislation, unless otherwise provided by the Russian Federation Tax Code (Clause 1, article 11). Accordingly, the definition of “reconstruction” is provided by Tax Code (paragraph 2 of the article 257), and it differs significantly from the definition of Urban Planning Code. But for tax purposes it is necessary to use only it.

In addition, in paragraph 2 of the article 257 of Tax Code, the terms describing the concept of “reconstruction” are given: “completion”, “additional equipment”, “modernization”, “technical re-equipment”, i.e. the names of those works that increase the initial cost of main production assets are given. However, much more often the work is carried out to carry out current repairs, which are
neither capital repairs nor reconstruction. Due to the lack of terminology in normative documents, the characteristics of the work performed have to be proved in an arbitration court.

To exclude different interpretation of concepts, it is necessary to use the explanations in the letter of Russian Federation Ministry of Finance dated 02.08.2010 No. 02-05-10 / 383. It explains the following terms: repair (current, capital); list of works related to repair; repair work results; the procedure for expenses for payment of works and services related to repair work, including expenses for the purchase of building materials for repairs, as well as other expenses for the maintenance of property; the costs of conducting a technical survey for development of design estimates, construction, overhaul, reconstruction.

However, often the tax authorities, without understanding construction features and the use of specific terminology in details, without sufficient justification and without involving experts, recognize the work performed as being subject to accounting for the value of main assets. Further resolution of such disputes takes place in court.

Litigation in their activities considers the norms and terminology of all applicable regulatory documents. It should be noted that the whole procedure requires considerable amount of time.

During the repair, the formation order of the building’s life cycle changes. If during new construction the pre-design stage is carefully carried out, consisting of marketing research, preparation of technical specifications and design assignments, then this procedure is violated during capital repairs. A technical inspection is required to identify defects. A report of possibility of further exploitation is being resolved. A report on the work performed is compiled and, with a positive opinion, they begin to carry out dismantling and construction and installation works [16-17]. Frequently, project documentation is being developed already in the process of conducting works, which is called “in place”. It should be noted that documentation for the overhaul, as a rule, does not pass the examination, so the solutions should be as typical and accessible as possible for the executors.

At the time of developing an investment overhaul project in order to distinguish between the concepts of “overhaul and reconstruction”, which differ significantly in taxation, it is necessary to carry out a detailed development of the entire set of documentation, not limited, as usual, to a defective statement and estimate [18].

In MDS 13-14.2000 of Russian Federation, in “Regulation on conduct of scheduled preventive maintenance of industrial buildings and structures” an integrated system for the reliable exploitation of buildings and structures, ranging from private inspections to capital repairs is provided. A procedure for technical documentation maintaining and its complete list is given. MDS 13-14.2000 was updated in 2013; therefore, its provisions and recommendations are actively used by the judicial authorities.

3 Results

The object of our study is existing building structures of the TPP building in Naberezhnyye Chelny. According to its functional purpose, the building is industrial and provides Avtozavodsky and Central districts of the city, as well as KamAZ plants. Their primary task is stable and continuous transportation of thermal energy (Figure 1).

![Figure 1. General view of the cogeneration plant in Naberezhnyye Chelny.](image)
Physical deterioration of structures, elements, systems or their sections is assessed by comparing the signs of physical deterioration obtained as a result of visual and instrumental examination with the ir values obtained in table 1 in the normative collection.

### Table 1. Physical deterioration of the building, %.

| Name of building elements | Estimated unit weight | Physical wear of the structure | Weighted average of physical deterioration |
|---------------------------|-----------------------|-------------------------------|-------------------------------------------|
| Foundations               | 18                    | 20                            | 3.6                                       |
| Walls                     | 29                    | 25                            | 7.25                                      |
| Overlapping, roofing, metal carcass | 25                    | 45                            | 11.25                                     |
| Finishing works           | 11                    | 20                            | 2.2                                       |
| Internal plumbing and electrical works | 9                    | 10                            | 0.9                                       |
| Other works               | 8                     | 20                            | 1.6                                       |
| **Total 100 %**           |                       |                               | **Pd = 26.8 %**                           |

Accordingly, the physical deterioration of the building is 27%. Therefore, the building meets all the requirements.

Given the survey, the reconstruction includes:
1) dismantling of the existing glazing from elev. + 10.800m to elev. + 25.200m;
2) dismantling of the metal frame (frames, crossbars) of the glazing from elev. + 10.800m to elev. + 25.200m;
3) temporary dismantling and subsequent installation of the metal ladder along axis 37 (elevation +0.000 to elevation + 30.000m);
4) installation of new crossbars and racks of a metal framework of a glazing from elev. + 10.800m to elev. + 25.200m;
5) reinforcement of the metal frame of the glazing from elev. + 10.800m to elev. + 25.200m;
6) preparation of metal structures before painting (primed m/c GF-021);
7) coating the metal structures of the frame with a flame retardant (to the fire resistance limit of R45 (45 minutes);
8) installation of window blocks;
9) anticorrosive protection of a metal ladder.

When compose defective statements, which are the basis for determining the estimated cost, it is necessary to avoid terms that have a double or triple meaning [19-22]. For example, the term “redevelopment” is not contained in the norms of paragraph 2 of article 257 of Tax Code as an element determining the presence of reconstruction or overhaul, but is indicated in the letter of Russian Federation Ministry of Finance dated 05.02.2010 No. 02-05-10 / 383 as the concept of carrying out non-capital redevelopment of premises, which clearly indicates the category of work on overhaul. The use of terms “modernization, additional equipment, technical re-equipment”, regardless of the work they explain, will lead to taxation as “reconstruction” (table 2).

### Table 2. Physical deterioration of structures of the structure with the design wording.

| Name of the structural element | Signs of wear | The approximate list of work |
|-------------------------------|---------------|------------------------------|
| Stained glass system around the perimeter of the building | Depreciation of the old type stained-glass system, rust, broken double-glazed windows | 1) dismantle the worn-out stained-glass window system; 2) installation of a new system, modern with two-chamber glazing |
Approximate scope of work in table 2 can be classified as work on overhaul, current repair and reconstruction. To unambiguously classify the work as a major overhaul, it is necessary to replace the wording as follows (Table 3).

### Table 3. Physical deterioration of structures with the necessary wording

| Name of the structural element | Signs of wear | The approximate list of work |
|-------------------------------|---------------|-----------------------------|
| Building glazing              | Depreciation of the stained glass system, rust, shattered double-glazed windows | Replacement of steel structures of stained-glass windows and double-glazed windows due to their physical deterioration and destruction by more durable, durable and economical, supporting their operational indicators |

### 4 Conclusions

When developing an investment project for overhaul, it is necessary to prepare a full package of documents. When preparing production for repair work, the customer, together with the project organization, must develop and justify the calculations with the most appropriate and rational options for the organization of construction work. When drawing up defective statements, work contracts, estimated documentation, use the terminology of current regulatory documents that clearly interpret the types of repair and construction work (capital repairs or reconstruction) without waiting for the judicial authorities to do this.

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