Methodology of research of design documentation for construction in order to assess its compliance with the requirements of special rules in the production of judicial construction and technical expertise (in the order of discussion)

The article proposes a methodology of research of design documentation intended for construction, reconstruction and capital repairs (hereinafter referred to as construction) of capital construction facilities within the framework of construction and technical forensic examinations, taking into account the regularly changing requirements of urban planning legislation. The list of issues resolved within the framework of these examinations is given. The objects of research are identified, the purpose of which is to resolve issues of compliance of project documentation with the requirements of special rules. The principal differences and exceptional provisions are indicated when conducting construction and technical forensic examinations of project documentation from the state examination of project documentation conducted by a state body within the framework of Article 49 of the Urban Planning Code of the Russian Federation (UPC of the Russian Federation). A list of regulatory requirements for project documentation is formed, which are presented in various time by documents of urban planning legislation and national standards. The stages of conducting research on the composition and content of project documentation, to which different requirements are imposed in different time, are considered. The proposed methodology for conducting research in relation to project documentation is intended for forensic experts conducting research within the framework of forensic examinations on the materials of criminal cases or materials of procedural checks appointed by the investigative body. Particular cases of application of regulatory requirements depending on the time of development of project documentation or other documents establishing the legal status of project documentation are considered.

Keywords: project documentation, buildings and structures, judicial expertise, construction, regulatory requirements, conformity assessment

INTRODUCTION

Forensic expertise is of great importance in the investigation of criminal cases and their subsequent judicial review. The theoretical and organizational foundations of forensic examination, the procedure for the appointment and production of judicial examinations are currently sufficiently elaborated by the criminal procedure legislation and are considered in detail in [1], as well as in numerous methodological and reference manuals. At the same time, construction and technical expertise as a kind of forensic expertise, in comparison with other types of expertise, is considered quite young. It can rightfully be said that this kind of expertise is still at the stage of its formation and development. General organizational approaches, methodological and legal bases for the appointment and production of judicial construction and technical expertise (JCTE) were formed and consolidated in numerous works by A. Yu. Butyrin [2, 3], practical manuals, for example, in the work of O.S. Vershinina [4]. However, it is worth noting that in the sources known to the authors, much attention is paid to the issues of studying the construction sites themselves within the framework of the JCTE, in isolation from their design documentation, and issues related to the study of design documentation for their construction, as well as methodological approaches to resolving these issues, are not given due attention, or are purely illustrative. But it is in the design documentation that the reliability of the future construction facility is laid down, and subsequently, in accordance with this design documentation, the condition of the construction facility is maintained throughout its entire life cycle.

The need for the appointment of a forensic examination to study the design documentation for construction is primarily due to the discovery during the investigation of the criminal case of the facts (circumstances) of the commission of a crime, which may presumably be causally related to the non-compliance of the design documentation with the requirements of special rules. Such facts (circumstances) may be, for example: defects (damages) of load bearing and enclosing structures of buildings (structures), which indicate the presence of danger to the life and health of citizens; non-compliance of indoor microclimate parameters with sanitary requirements; the collapse of a building or a separate part of it; the impossibility or limited possibility of using project documentation for the development of working documentation and construction...
of the facility, as well as other facts indicating that the crime could have been committed with intentional or negligent actions of persons during the preparation of project documentation, examination of project documentation, issuance of construction permits and (or) commissioning the operation of capital construction facilities, and so on.

It is important to note that in the production of JCTE, forensic construction experts do not replace or duplicate the bodies of state (or non-state) expertise of project documentation, which carry out professional activities within the framework of Article 49 of the Urban Planning Code of the Russian Federation (UPC of the Russian Federation) [5] and the Decree of the Government of the Russian Federation. The main and significant difference in the approach to the production of forensic expertise is that a forensic expert carries out his professional activities within the framework of Article 57 of the Code of Criminal Procedure of the Russian Federation. At the same time, they (the forensic expert) do not substitute the examination of draft documentation, which is provided for by urban planning legislation (Part 6 of Article 49 of the UPC of the Russian Federation [5]), with a forensic examination.

RESOLVED ISSUES

Based on the circumstances of the criminal case, among the main issues raised by the investigation or the court for the permission of an expert, the following questions can be attributed:

1. Did the project documentation comply with the requirements of special rules for the composition of sections of the project documentation and the composition of the content of these sections as of the date? If yes, the final version of the project documentation, the study of the changes made to it during the development of the project documentation and at the construction stage, as a result, several versions of the project documentation are formed. These changes must be registered by the design organization in accordance with Section 7 of the State Standard of the Russian Federation 21.1101-2013. Basic requirements for design and working documentation (approved and put into effect by Russtandart Order No. 156 dated 11.06.2013) — effective period from 01.01.2014 to 01.01.2021.

2. Did the project documentation comply with the requirements imposed on it by the state contract (or other contract, agreement) in separate paragraphs (determined by the results of consultations with an expert) and appendices thereto (terms of reference for design, calendar plan, etc.; if necessary, determined by the results of consultations with an expert)?

3. Did the project documentation comply with the requirements of special rules in certain parts of its sections (determined based on the results of consultations with an expert) in force on the date of issuance of the urban development plan of the land plot? This list of issues is usually not exhaustive. Thus, for the permission of a forensic expert, in the presence of characteristic signs directly indicating the presence of inconsistencies, for example, the presence of progressive defects and damages, deformations and rolls of capital construction facilities, questions may be raised about the compliance of specific sections of the project documentation with the requirements of special rules:

4. Is there a causal relationship between the appearance of defects (damages) in the load bearing and enclosing structures of a building (structure) with the non-compliance of the design documentation with the requirements of special rules?

5. Is the collapse of the building causally related to the non-compliance of the design documentation with the requirements of special rules?

We have considered the procedure and methodology for resolving issues 4 and 5 using specific examples in the methodological recommendations [6], as well as articles [7–9]. When resolving the above issues within the framework of the JCTE, in order to avoid expert error, it is extremely important to correctly interpret the results of calculations of load bearing building structures and verify computer models for the correctness of accepted calculation schemes when it is necessary to establish, for example, the cause of destruction of an object or part of it, as indicated by the authors of the work [10]. However, these issues are not considered in this article, as this is the subject of a separate study.

OBJECTS OF RESEARCH

The objects of research are project documents in paper or electronic form (scanned copies of project documents), as well as calculation results substantiating technical solutions adopted in project documents on paper and/or electronic media.

Since changes may be made to it during the development of project documentation and at the construction stage, as a result, several versions of project documentation sets are formed. These changes must be registered by the design organization in accordance with Section 7 of the State Standard of the Russian Federation 21.1101-2013. Regardless of the fact that the designer fulfilled the regulatory requirements and registered the changes made in accordance with the established procedure, different versions of the developed kits for which construction is carried out may be available to different participants in urban planning activities (the designer, the developer (technical customer), the authority that issued the construction permit, the general contractor, etc.). In this regard, the investigation may also have at its disposal different versions of sets of project documentation in relation to one capital construction object under consideration.

Therefore, before the appointment of a forensic examination of the project documentation, depending on the circumstances of the case, the investigator must determine which version of the project documentation should be sent for research. At this stage of the preparation of materials, it is recommended to involve a knowledgeable person with special knowledge in the field of construction design. A knowledgeable person may be a representative of a design or research organization in the field of construction.

The final version of the project documentation, the study of which is to be performed as part of the forensic examination, should be considered the version of the project documentation that meets the following requirements:

- has the latest version (with all changes);
- approved by the developer (technical customer) by affixing the appropriate stamp “for the production of works” or approved by an official letter from the technical customer, in accordance with Part 15 of Article 48 of the UPC of the Russian Federation No. 145 dated 03.05.2007.


4 Depending on the circumstances of the case, the date as of which it is required to conduct a study of the project documentation should be agreed upon as part of the preliminary consultation of the investigator before the appointment of the examination and unambiguously determined by the investigator in the matter being put to the expert’s permission.


6 The State Standard of the Russian Federation 21.1101-2009. The system of design documentation for construction. Basic requirements for design and working documentation (approved by the Order of RustechRegulation No. 525-st dated 11.30.2009) — the period of validity is from 03.01.2010 to 01.01.2014.
ПРАВОВЫЕ И СОЦИАЛЬНЫЕ АСПЕКТЫ

The project documentation acquires legal force if it is prepared and executed in accordance with the requirements of urban planning legislation and has a positive conclusion of the state (non-state) expertise of the project documentation (except for the cases provided for in Part 2 of Article 49 of the Russian Federation [5]).

During the study within the framework of the appointed forensic examination, it can be established that the project documentation, which received a positive conclusion from the state (non-state) examination, was amended after it was received. Changes that were made to the project documentation after receiving a positive expert opinion are considered insignificant and do not require repeated examination [5] if such changes are simultaneously [11]:

• do not affect the load bearing building structures of the capital construction facility, except for the replacement of individual elements of such structures with analogous or other elements that improve the performance of such structures;
• do not entail a change in the class, category and (or) the originally established indicators of the functioning of linear objects;
• do not lead to violations of the requirements of technical regulations, sanitary and epidemiological requirements, requirements in the field of environmental protection, requirements for the safe use of nuclear energy, industrial safety requirements, requirements for ensuring the reliability and safety of electric power systems and electric power facilities, requirements for anti-terrorist protection of the facility;
• correspond to the task of the developer or technical customer for the design, as well as the results of engineering surveys;
• correspond to the cost of construction (reconstruction) of a capital construction facility carried out at the expense of the budgets of the budgetary system of the Russian Federation, established in the decision on the provision of budgetary allocations for capital investments adopted in respect of a capital construction facility of state (municipal) ownership in accordance with the established procedure.

Thus, if, during the study of the project documentation within the framework of the JCTE, non-compliance with one or more of the above points was established, then this is the basis for concluding that the project documentation does not comply with the established regulatory requirements.

In the design documentation, the safety of the building (structure) must be justified by calculation [8]. The design justification of constructive solutions is an integral part of Section 4 “Constructive solutions”. In order to conduct a forensic construction and technical examination, the design justification of the design solutions of the object under study is requested from the investigative body at the request of an expert. If there are characteristic signs of damage to the object, indirectly indicating that Section 4 “Constructive solutions” does not comply with the requirements of special rules, this section should be examined for compliance with the requirements of Federal Law No. 384-FL [9] dated December 30, 2009 “Technical Regulations on the Safety of Buildings and Structures” [12]. At the same time, if the design justification of the design decisions is not available to the investigative body, the expert must independently verify the compliance of the design documentation with the requirements of the JCTE, non-compliance with one or more of the above points being established, then this serves as the basis for concluding that the project documentation does not comply with the established regulatory requirements.

THE LEGAL STATUS OF THE PROJECT DOCUMENTATION

The design documentation is the main document that establishes requirements for the safety of buildings (structures), as well as for their parameters and characteristics.

The project documentation is a legally significant document and has the appropriate legal force on the basis of urban planning legislation [5, 12] and legislation on technical regulation [13]. The working documentation is developed on the basis of the project documentation. The preparation of project documentation and working documentation can be carried out simultaneously [5] [9].

Due to the fact that the use of working documentation in construction without design documentation is not allowed, within the framework of forensic examinations, working documentation is considered only if there is design documentation in accordance with which it was developed.

The project documentation acquires legal force if it is prepared and executed in accordance with the requirements of urban planning legislation and has a positive conclusion of the state (non-state) expertise of the project documentation (except for the cases provided for in Part 3 of Article 110.2 of Federal Law No. 44-FL dated 04.05.2013 “On the contract system in the field of procurement of goods, works, services for state and municipal needs” [10].

7 What is defined by Part 3 of Article 110.2 of Federal Law No. 44-FL dated 04.05.2013 “On the contract system in the field of procurement of goods, works, services for state and municipal needs” (with amendments and additions, intro. effective from 01.01.2023).
8 Part 2.1 of Article 48 of UPC of the Russian Federation.
9 It is provided for in Part 3.8 of Article 49 of UPC of the Russian Federation.
10 An explanatory note containing the calculated justification of constructive solutions is stored in the archive of the project organization (the author of the project), this document is not provided to the customer.
11 Further Federal Law No. 384-FL.
the requirements of Federal Law No. 384-FL [12]. If the expert does not have competence in narrow areas of research that require resolution within the framework of the issues raised by the investigation, the expert is obliged to file a petition for the involvement of a person with special knowledge in this area of research.

The main requirements for project documentation, effective at various periods of time, are set out in the following normative documents [5, 14]: national standards and codes of rules (parts of such standards and codes of rules), as a result of which compliance with the requirements of Federal Law No. 384–FL, approved by documents [15–18]; documents defining the requirements for graphic and textual materials [19]; national standards and codes of practice (parts of such standards and codes of practice), as a result of which compliance with the requirements of Federal Law No. 384–FL approved by Orders is ensured on a voluntary basis [20–23].

During each study, the expert forms a list of regulatory documents, depending on the circumstances of the criminal case in relation to the design documentation of the object under study. As of the date set in the question submitted for the expert’s permission, it is necessary to select the valid versions of documents from the lists of national standards and sets of rules, as a result of which, both on a mandatory and voluntary basis, compliance with the requirements of Federal Law No. 384–FL is ensured [12].

In particular cases, it is necessary to use documents and their editions that establish regulatory requirements for a capital construction facility on the date of legally significant actions in the process of preparing project documentation (for example: the date of approval of the design assignment, the date of issuance of a construction permit, etc.). Following Part 5.2 of Article 49 of UPC of the Russian Federation [5], the study The design documentation can be performed for compliance with the regulatory requirements in force on the date of issue of the urban development plan of the land plot, on the basis of which such design documentation was prepared, in the same way as it is performed during the production of state expertise of project documentation.

According to Part 1 of Article 46 of the Federal Law “On Technical Regulation” No. 184–FL [13], before the entry into force of the relevant technical regulations, the requirements for products and related requirements for design processes (including surveys), production, construction are subject to mandatory execution only in the part corresponding to the goals of protecting the life or health of citizens, property of individuals or legal entities, state or municipal property. Within the framework of forensic examinations, this provision is understood as follows: if the design documentation does not contain other justifications for ensuring the safety of construction (for example, mechanical safety), such as the results of research, calculations and (or) tests (performed using certified or otherwise approved methods), then the regulations governing the methods of ensuring the safety of construction facilities from lists of documents approved by orders [20–23] in the field of standardization, as a result of which compliance with the requirements of Federal Law No. 384–FL is ensured on a voluntary basis [12], are considered mandatory.

**FINAL PROVISIONS**

The main provisions set out in this article have been tested in the course of judicial construction and technical examinations conducted at the Forensic Expert Center of the Investigative Committee of the Russian Federation as part of research on project documentation in criminal cases. Based on the results of this work, a methodology is proposed that is applicable to conducting research on project documentation intended for the construction, reconstruction and overhaul of capital construction facilities within the framework of the IJCTE, and the objects of research are identified. The principal differences between the forensic examination and the state examination of project documentation conducted by a state body within the framework of Article 49 of UPC of the Russian Federation [5]. The proposed methodology for conducting research within the framework of forensic examinations does not contradict the provisions of urban planning legislation [5] and legislation “On Technical Regulation” [13].

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12. The document used is the one that was valid during the time period in which the development of the project documentation was carried out.

Методика исследования проектной документации для строительства на предмет оценки ее соответствия требованиям специальных правил при производстве судебных строительно-технических экспертиз (в порядке обсуждения)

В статье предложена методика проведения исследований проектной документации, предназначенной для осуществления строительства, реконструкции и капитального ремонта объектов капитального строительства. Разработана методика проведения исследований проектной документации с учетом регулярно изменяющихся требований градостроительного законодательства. В статье предложена методика проведения исследований проектной документации.

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