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CONSTRUCTION ENDORSEMENT PROCESS IN RUSSIA

Bachelor's Thesis 2010

ABSTRACT
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The construction endorsement and receiving of construction permit is a long lasting and very complicated process in Russia. There is no one and only instruction how to get the permit. Mainly it depends on the region of prospective construction. But the process is always individual in every single case.

The purpose of this work is to summarize all the accessible information into one concept of receiving the construction permit. It is also essential to describe the whole designing and approval process from the first contract agreement till starting work on the construction site. Both current normative documents and practical experience of construction companies had to be used. Moreover, the cost estimation and time scheduling were to be included into the thesis.

The topic chosen requires processing large information quantity. The main difficulty is the absence of one code describing the whole permissive process. All its stages are regulated by different norms. Few crucial events are not mentioned directly, but implied in some documents and are meant to be performed before the application for the construction permit.

The basic information has been taken from codes and other normative documents, including those, which have already expired, but still helpful. Information missed by codes is described somehow on internet sites owned by layer companies specialized in construction endorsement. The rest has been found in different articles and essays. However, the lack of information has even forced me to interview a few specialists.

From all this data I studied that the permissive process in different cities varies a lot. It is so because of local codes and laws. Obtaining a construction permit in Moscow is twice more complicated than in small towns. But the topic does not provide specialization in any city. So this thesis is based on a compilation of All-Russian codes, local laws and some unofficial information.

As a result of the research the whole designing and permissive process has been described by stages. Also an illustration of it has been created. I have provided lists of documents required for every permit, resolution or endorsement in common case, without reference to any region. Finally, I have made an attempt to estimate the exact price and time, but have not succeeded, because they may vary from region to region up to 3-5 times. So all information provided about it is approximate.

KEYWORDS: Investor, Head Design Company, Contractor, Subcontractors, Technical conditions, Initial data, Technical assignment, Initial Permissive Documentation, Design documentation, Detailed Documentation, Pre-design.

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1 INTRODUCTION

The client of this thesis is Quattrogemini Ltd, a group of international contractors starting up, designing and executing construction investments predominantly in Russian market. (Quattrogemini Ltd., 2009). Although the company has quite a large experience of working in Russia, there is a need of summarizing all gathered information about construction endorsement into one common guide for receiving the construction permit. Moreover, the construction legislation in Russia is constantly changing, and the system of normative documentation is confusing and complicated. In conformity with it, the situation requires a permanent research and analysis of ongoing events.

The legislation base numbers more than four hundred laws and normative acts. However, even such a quantity of normative documents does not provide legal regulation for all stages of the designing process. The situation is aggravated by the fact that there are inconsistencies and contradictions in laws and regulations. This makes it very difficult and in some cases even impossible to apply a common law without a state of highly qualified lawyers possessing extensive experience in the construction industry. A lack of experience in the construction endorsement process becomes a certain impediment to progress not only for small companies, but for big ones as well.

Firstly the task of this work was:

1. to find out all the administrative barriers on the way of receiving the construction permit
2. to compose a list of required permissive documents, endorsements and their price.

The deeper the research was going, the clearer it became that this topic requires a description of all construction designing and endorsement process from the very beginning. Working through it required a deep exploration and study of legislative

and normative acts regulating this process. It was discovered that effective norms (predominantly secondary local norms, but not federal ones) describe every step quite well for every subject of the Russian Federation. But there is no federal law fixing the sequence of endorsements, explaining what documentation should be developed and when approved. So the primary target became the creation of a design flow chart providing that knowledge. And it was quite understandable in advance that this schema would not be a success, because the order of receiving permits is different in every single city and even in certain districts of cities. Therefore the schema of the construction designing and endorsement process (Chart 1) cannot be a practical guideline applicable in every case, but displays a common way of developing the design and obtaining main permits. To be more exact, the schema refers only to industrial and civil construction, but not to construction of linear objects like roads, networks, railways, etc.

The construction designing and endorsement process is a very complex topic and it has to be narrowed for the thesis to be more laconic and precise. So the following limits were set. Considering that Quattrogemini most likely erects industrial buildings, I tried to pay more attention to this type of construction. Also the renovation projects are not explained in this work, only cases of new construction are described. One more important factor is the resource of investments. Again in accordance with Quattrogemini's specialization in Russia, only projects invested from private budgets were studied.

Taking into consideration the lack of information in current norms, the resources of unofficial information were used as well. There are many small companies specialized in construction endorsement and they possess specific knowledge how to receive the permits, so information published on their internet sites was also used in this thesis. As well as few research works published by individual lawyers or consulting companies.

2 CONSTRUCTION DESIGNING AND ENDORSEMENT PROCESS

A construction process in Russia is characterized by the fact that the creation and reproduction of main assets involves a significant number or participants:

- Investors
- Contractors
- Design companies
- Engineering surveys companies
- Research institutes
- Constructors
- Suppliers of materials and equipment
- Local, district and federal supervising units including subordinate agencies
- State examination authorities

Unfortunately, there is no only one document which could describe all the relationships between the participants of the construction process. The main law is Town Planning Code, but it contains only basic information about endorsements. This lack is partly compensated by other federal laws, regulations and governmental decrees. Every subject of the Russian Federation has its own legislation. And in comparison between different cities the endorsement sequence and composition of required documents can vary a lot. The best example is Moscow. All the approvals in this city can last 3-5 times longer, and their list is longer.

Every region has its local auditing and supervising organizations and their requirements can be very different. It is no wonder that there are lots of private companies specialized in the support of construction endorsement. They have necessary experience and connections with local authorities, possess an improved knowledge of local legislation and they are to be employed by a General Contractor if it has no construction experience of its own in the chosen district.

The whole process of construction designing and endorsement from the first contract agreement till the erection startup is provided on the schema (Chart 1)

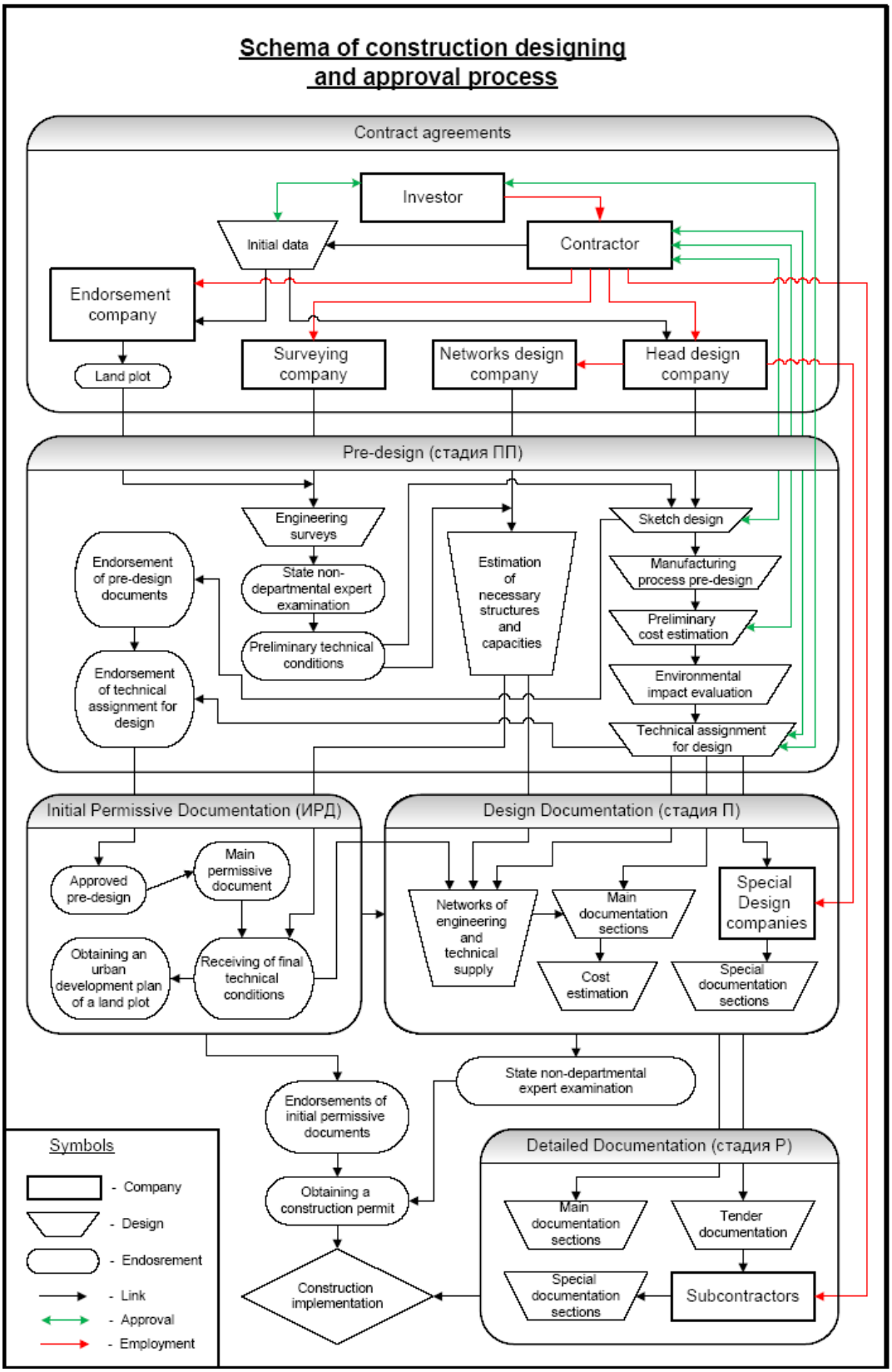

Chart 1. Schema of construction designing and approval process.

This schema is a graphical reflection of my view on the endorsement process. This way is not the only possible; there is a huge number of variants. Everything depends on the functional purpose of the building, the difficulty of the project, the region of construction, the contractor's experience and even luck. Every factor influences the time scheduling and sequence of endorsements. But the common idea is provided in this schema.

I tried to consider some special features caused by the fact that Quattrogemini is a foreign contractor in Russia, although having local companies there. It is the reason why there is a wide net of subcontractors in the schema.

I divided the whole construction designing and endorsement process into several phases:

- Contract agreements
- Pre-design
- Initial permissive documentation
- Design documentation
- Crucial endorsements
- Detailed design

In fact all these phases are not coming one by one. Some actions are to be done at the same time to reduce the time loss. An approximate time scheduling is provided in Appendix 1.

3 CONTRACT PHASE

During the contract phase all main participants of the designing process should be found. The investor having a construction business idea looks for a contractor (or developer) company to implement its plans.

According to the usual contract agreement the contractor company is fully responsible for the whole process of designing, endorsement and construction, but usually one company cannot accomplish all these functions. Therefore a head design company and other specialized companies should be employed (for example endorsing company). Subcontractors and designers for special documentation sections can be involved later in the project. The number of these subcontractors and sub-designers depends on the opportunities of the general contractor. The ideal way for a contractor company is to manage with everything by itself. If it is not possible and the contractor has to spend money for employing different auxiliary organizations and lose time coordinating, approving and examining their work.

The investor and contractor should together create a concept of what they want to construct and put these preliminary ideas into the contract agreement. Subsequently the contractor company decides what functions it can accomplish itself and what subcontractors it needs for executing the rest of them. I supposed that there would be a need of head design company, one supporting the endorsing organization and a company specialized in engineering surveys. On their part, they may employ subcontractors, sub-designers or other helping companies. The type of main contract agreement, which Quattrogemini usually uses, is either turnkey or EPC (Engineering, Procurement, Construction). The choice of the type depends on the wish of the investor to be involved in the construction process and the wish to make changes and decisions throughout the project (EPC contract), or just pay money and get the operating facility (turnkey contract).

After the main contract agreement between the investor and contractor has been signed, there comes the necessity of preparing some initial data for pre-design. The investor and the contractor usually do it with the help of designers. The exact content of initial data for pre-design is not regulated by any normative document in Russia, but anyway it should include the following information:

- functional purpose of the construction object
- basic requirements for the manufacturing process:
  - production capacity
  - preliminary overall dimensions of the building and its shape
  - number of floors
  - necessity and capacity of stores
  - characteristics of main production equipment
  - preliminary number of employees
  - number of approaches
- basic requirement for the location
  - district or town
  - need of a railway connection
  - need of an allocation near the water
- budget limit

The main idea is to prepare some information, which could be enough for choosing a land plot for prospective construction, make a choice of the head design company and provide to it sufficient for pre-design initial data and assignment.

After forming the initial data, the contractor's obligation is to find a land plot for future construction if it is included into the contract. It is very likely to offer several variants for the investor to choose one of them. Often the land search may be already solved by the investor. Finally the chosen land plot should be very carefully inspected taking into account the following negative circumstances which can prohibit construction:

- The land plot is located on the territory of natural complex
- The land plot is located too close to dwellings or cottages
- There are lots of underground networks and communications
- The land has already been involved into the design of railways, roads or interchanges

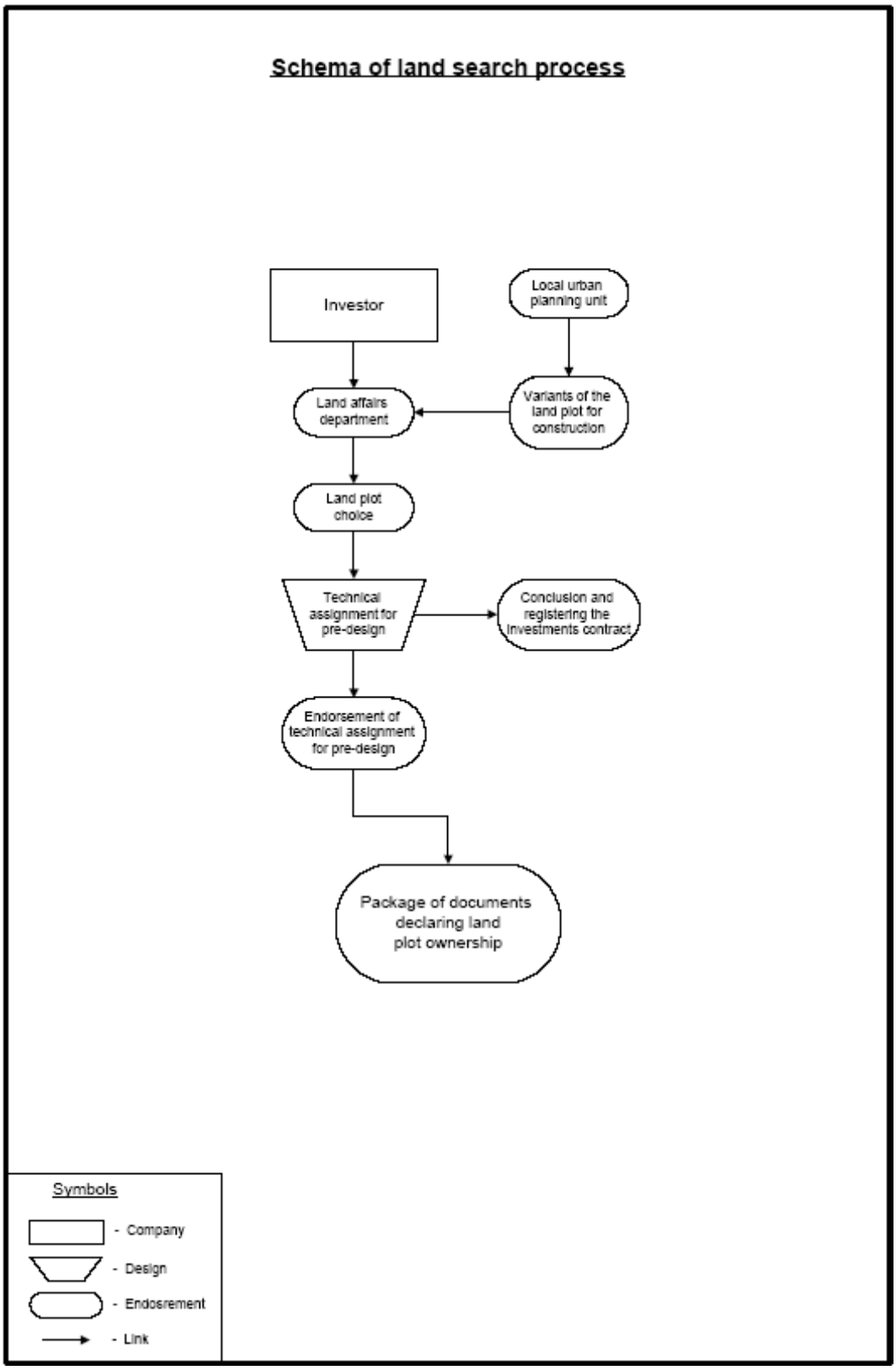

Chart 2. Schema of the land search process.

The duration of the land search depends on resources of investments. As long as the scope of this thesis contains only the cases of privately invested construction, the normative duration for land search is 6-7 months. It can be explained by the need of variation selection. In some subjects of the Russian Federation (for example in Moscow) these functions are executed by the architectural and planning department or by the local urban planning unit. After choosing a suitable variant the investor must prepare a technical assignment for pre-design development, then conclude and register an investments contract. After the assignment is approved by the committee of architecture and town planning, it issues initial documents for pre-design. Finally all initial data is provided to the design company for developing sketch design and other pre-design sections. The schema of the land search process for privately invested construction is provided in Chart 2.

The contract phase is very variable, but at the end of this stage the knowledge of the following statements must be got:

- What is going to be constructed
- What land will be used for the construction
- Who will make the design
- Who will make the engineering surveys
- Who will support with endorsements

After deciding all the above-mentioned aspects the pre-design work may be started.

4 PRE-DESIGN PHASE

Pre-design (in Russian Предпроектные проработки) is to be developed after choosing a land plot. During this stage it is necessary to consider the opportunity

and reasonability of constructing on the chosen land plot. Also the planning limits should be defined, as well as the preliminary composition of buildings and structures. Moreover, the required capacity of engineering supply must be estimated and architectural concept design has to be done.

On the basis of pre-design the investor equates the investment attractiveness of the land. The pre-design materials will be used later for receiving initial permissive documentation.

Nowadays there is no normative document regulating the contents and composition of pre-design documentation. Furthermore, the pre-design stage is not obligatory and not mentioned in the federal Town Planning Code. But it is indirectly supposed to be performed by some other laws.

For example, there is a need to get all technical conditions for connection to the networks of technical and engineering supply before starting the development of design documentation. Energy supply companies need to have the capacity of structures and location of willing connection points to issue the technical conditions for connection. It is impossible to define that data without pre-design work.

In a common case the pre-design phase contains the following crucial stages:

- Engineering survey implementation
- Developing sketch design documentation
- Preparing initial data for design
- Endorsements of pre-design sections

The pre-design stage is a key one and defines the further development of the designing process.

4.1 Engineering surveys

Engineering surveys should be performed right after choosing a land plot. According to contract agreements there may be different executors of engineering surveys, but usually it is a duty of a contractor. The point is to provide initial data for pre-design, which contains a report about engineering surveys. Surveys are usually accomplished by an employed subcontractor company specialized in this area of activity.

Engineering surveys are a type of special construction activity providing a comprehensive study of natural and anthropogenic conditions on the territory of construction objects, forecasts of interaction between the environment and these objects, substantiation of their engineering protection and safe living conditions. (Injeco Center Ltd., 2009)

Engineering surveys for construction are performed for development of pre-design, design and detailed documentation, feasibility study for investments in construction of plants, dwelling and structures, also for their reconstruction and demolition as well as for adoption of economically, technically, socially and environmentally substantiated design solutions. (ibid.)

Surveys for construction are to be implemented in accordance with the legislative and normative acts of the Russian Federation and subjects of the Russian Federation, codes of laws and federal normative documentation regulating activity in the field of engineering survey for construction.

There are 3 types of engineering surveys:

- Geodesic and topographical
- Geological
- Ecological

Engineering surveys for construction or its parts must be executed by specialized companies, which participate in Self-Regulatory Construction Organization and have been granted an appropriate certificate for survey implementation in established order.

Engineering surveys for construction are performed in the presence of the appropriate approvals of construction allocation, issued by local executive authorities, or a land lease or purchase contract. The registration of engineering surveys implementation is also required.

The parts of engineering surveys have to be registered by different organizations, as shown in the table below.

Table 1. Engineering surveys registration. (Injeco Center Ltd., 2009)

Engineering surveys type	Registering organization
Geodesic and topographical	Architectural departments of local self-regulatory authorities
Geological	Local geology supervising authorities
Ecological	Federal Service for Supervision of Consumer Rights Protection and Human Welfare (in Russian so-called Роспотребнадзор)

The surveys implementation is registered by a contractor company or by employed subcontractor. The registering organization has a rule to set additional requirements for survey implementation according to the legislative acts of subjects of the Russian Federation.

Engineering surveys are implemented on the basis of a contract between general contractor and surveys executor. The contract includes the main part and the following appendices:

- Initial data for surveys (including technical assignment for engineering surveys)
- Time schedule
- Cost estimation
- The program of engineering surveys
- Additional agreements in case of changes in work content, time schedule or implementation conditions

Initial data for surveys implementation is developed by the general contractor taking into consideration the construction phase, with the participation of the engineering surveys executor. The initial data is to be signed by the contractor's representative, Chief Engineer of the project. It must also be approved by the director of the contractor company and assured with a stamp. (Injeco Center Ltd., 2009)

The technical assignment for surveys should be supplemented by graphical and textual documents, which are required for the implementation of engineering surveys during the ongoing phase of the design process.

It is prohibited to fix the content and volume of exploration work, as well as the method and technology of survey implementation in the technical assignment.

Engineering surveys are executed on the basis of the survey program, which must entirely correspond with the statements of the contractor's initial data.

If some complicated natural or anthropogenic conditions, which may have an adverse impact to the environment or to the erection and maintenance of the

building, are detected during the surveying process, the surveys executor has to inform the contractor about the necessity of additional research and making some changes in the survey program and contract (in terms of increasing the duration and cost of the surveys).

The product of surveys should be provided to the customer in the form of a technical report on accomplished engineering surveys designed according to the requirements of normative documents and state standards issued by the Ministry of Construction.

The textual part of the report should provide information about:

- The purpose of engineering surveys
- Construction site location
- Type, volume and duration of accomplished work
- Executors
- Conformity of the survey's results with the contract
- The report on comprehensive research of natural and anthropogenic conditions on the territory of construction objects location

The graphical part of the report should contain:

- Maps
- Plans
- Sections
- Profiles
- Charts
- Tables of parameters (characteristics and rates)
- Data catalogues, including:
    - Main results of research

- Estimation and forecast of possible changes in natural and anthropogenic conditions

A technical report must be provided to the customer and passed in an established order (in accordance with the contract and with reserving a copyright) to the local funds of engineering survey materials.

It is necessary to note that the results of engineering surveys must go through state expert examination. It may be done either on this stage or with the examination of design documentation. (Town Planning Code, art.49 §3.2) If the state expert examination of surveys and design documentation is passed separately, the surveys expertise must be accomplished in 45 days. (Decree of Government №145, art. 29)

The contractor must provide the following documents for executing the state expert examination of engineering surveys results (Decree of Government №145, art. 13, 14):

- The application for the implementation of the state expert examination, which should include information about the applicant, construction object and executors of engineering surveys
- The results of engineering surveys designed in accordance with the requirements established by legislation of the Russian Federation
- The copy of technical assignment for engineering surveys implementation
- The positive conclusion of the state ecological expert examination if it has been passed
- Documents declaring the right of the applicant to act as a contractor's representative

One more crucial event is to get the preliminary conclusion for engineering supply. For obtaining this document the contractor applies to organizations, which

maintain heat, gas, electricity, water, etc supplying networks. As a result the contractor receives preliminary information about network capacities and possible points for connection. This will be necessary for the estimation of the engineering structures' composition and capacities, sketch documentation development and later it will be used for receiving final technical conditions for connection to networks of engineering and technical supply.

4.2 Sketch design documentation

Sketch design (in Russian Эскизный проект) is to be performed by the head design company (or its employed subcontractors) on the basis of the contract agreement with the general contractor and initial data prepared by the contractor and investor.

Sketch design documentation is a package of documents required for obtaining the initial permissive documentation including the urban development plan of land plot. In addition these are the materials, which provide a correct assessment of the project and form initial data for further design. (IndaPro, 2009)

Sketch design is developed to define the main project characteristics and solutions (functional, structural, style, etc.), which give an overview of the main operation principals of the construction object as well as to the interaction of its parts between each other and the environment. The business plan of investments in the project and initial data for next design stages are developed on the basis of sketch design. (ibid.)

Pre-design development is probably the best if not the only way to get an idea of the designing object in advance. This stage is especially important for large and complicated construction objects, because it allows avoiding many difficulties in further design. Based on the designed building concept and carefully prepared technical assignment, the development of plans, facades and sections will be

accomplished during the design documentation phase. During the sketch design stage it is necessary to define the concept of the structure, main space planning and architectural solutions, number of floors, and make an equipment choice. All these should give a clear picture of plan composition, volumetric structure and appearance of the building.

While being developed, the sketches are explicated in details and brought to that level of completeness, which allows starting the development of design documentation. The sketch design materials play a role of a basis for initial permissive and design documentation. So it is evident that mistakes done during this stage can lead to huge money and time loss on the next design stages.

The contents and composition of sketch design documentation are not fixed by any legislative or normative act in Russia. Therefore, the content of sketch documentation is determined by the main purpose of its development, which is usually the assessment of opportunity and reasonability of construction allocation on the chosen land plot.

In a common case the sketch design documentation should contain the following:

I) Explanatory note, which includes the following sections:
    1) The assessment of conditions, including:
        - The pattern of land use (rent/ownership, land category, type of permitted use)
        - Location
        - General climatic parameters of construction area
        - The natural topography of construction area
        - Geological characteristics of the area
        - Ecological characteristics of the area
        - Historical and cultural characteristics of the area
        - General characteristics of surrounding buildings

- The assessment of area transport accessibility
- The evaluation of opportunities to connect to existing networks of engineering and technical supply
- The assessment of current planning restrictions

2) General description of the construction object allocation and analogue objects
3) Design solutions:
    - Zoning
    - Architectural planning solution
    - General technological solutions
    - Organization of cultural and community services
    - General design solutions on the organization of landscape and networks of engineering and technical supply
    - Technical and economic characteristics

II) Drawings and graphical materials:
    - Site plan with the illustration of the closest urban reference points and existing and prospective surrounding buildings located on adjoining land plots
    - Master plan of the land plot made on topographic basis (without scale, with explication)
    - Facades
    - Plan of the first and non-repeating floors
    - Sections

III) In addition:
    - Illuminated master plan of a land plot on non-expired topographic basis in 1:500 scale assured by design company stamp and approved by all organizations concerned
    - Illuminated site plan in 1:2000 scale with explication

The duration of this stage depends mostly on the speed of the designer's work. The recommended duration of sketch design development is 3 months but rarely

any designer company is able to manage this work in time. Therefore, the real duration should be assessed as 4-7 months. The cost depends on the project and may vary from several hundred thousands roubles to few millions. (Moscow Center of Enterprise Development, 2008)

After the sketch design has been developed it has to be assessed by the contractor on the subject of compliance with all preliminary plans, wishes and requirements. If sketch design satisfies all the requirements of initial data, the contractor approves it.

4.3 Endorsements of pre-design documents

According to experts' assets this stage is one of the most incoherent in the whole endorsement process. Difficulties appear even in terminology. There is a town planning substantiation, which includes sketch design, endorsements of authorities and approval of the head architect commission. In documents it is mentioned as town planning conclusion, architectural and town planning solution, booklet №1 etc. Whatever it is called, this stage intends to receive the conclusions of all organizations concerned including their requirements and recommendations on the design of the construction object. Finally the pre-design documentation has to be approved by the head architect commission, which issues town planning conclusion. (Moscow Center of Enterprise Development, 2008)

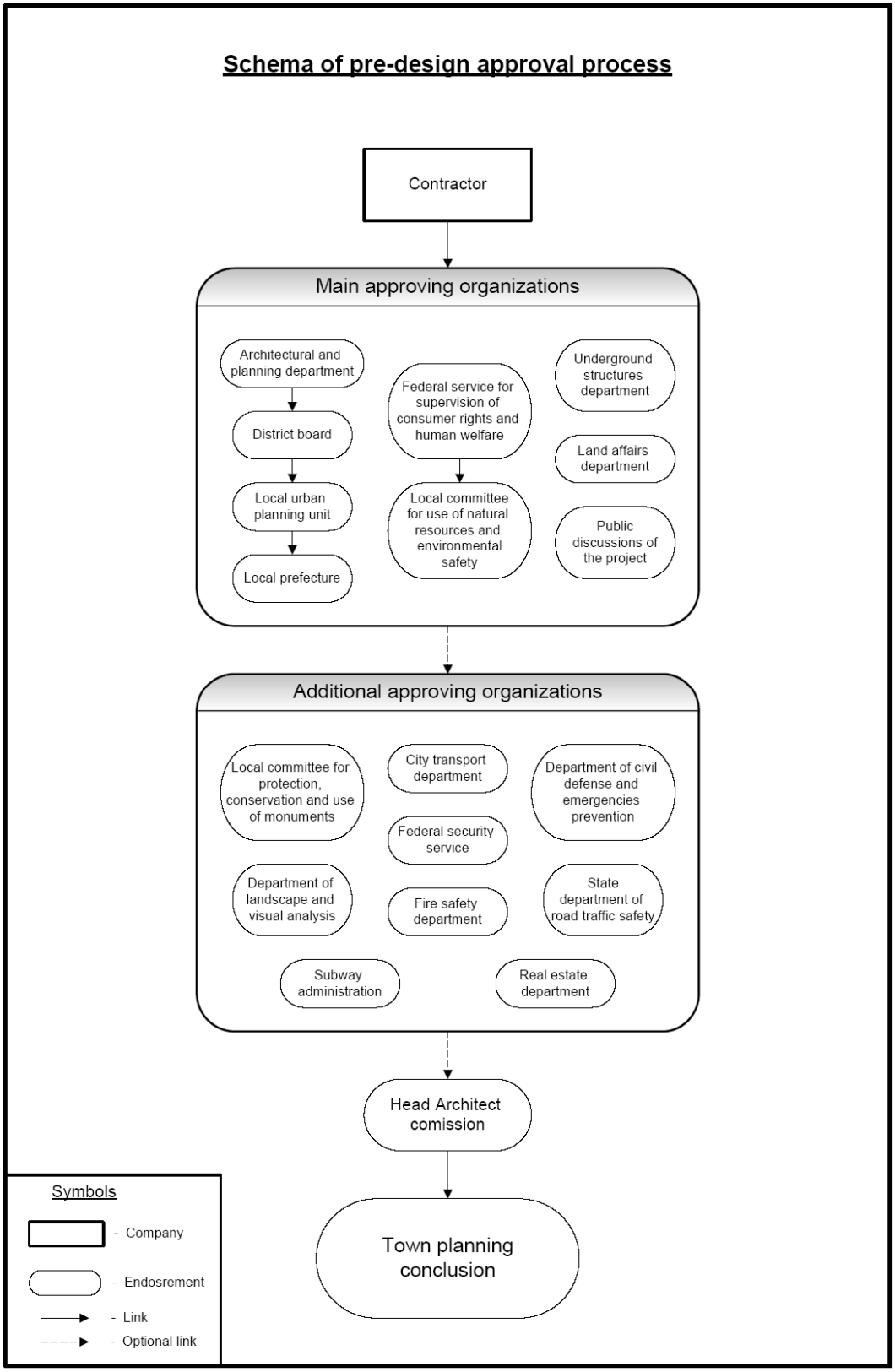

Chart 3. Schema of the pre-design approval process.

The number of endorsements depends on the project, but usually it is 9-15 and more. Nowadays there is a trend in legislation to decrease the number of compulsory approvals. In spite of this, in fact all endorsing authorities that used to give obligatory conclusions before do it now as supplementary ones and still participate in this stage of construction endorsement. So the practical changes are minimal.

The duration of endorsements on this stage is 2-8 months. The duration increase can be explained by the necessity of receiving some extra approvals and by the indiscipline of the endorsing organizations personnel. Although every approval is supposed to be granted in 1-2 weeks, it is lucky to get any of them faster than in a month. Considering the fact that some of them must be done in a particular sequence, the overall duration of pre-design endorsement may reach 6-8 months in some cases. Information about the official price of pre-design endorsements is scrappy (ibid.). The list of organizations and the sequence of endorsements are provided on the schema (Chart 3).

4.4 Technical assignment for design

A technical assignment (in Russian so-called Задание на проектирование) is the main part of initial data for design, which defines the type and volume of the architectural and urban development activity concerning the construction object. It is developed on the basis of pre-design materials and contains all investor's wishes and contractor's requirements and has to be approved by them before starting design documentation development. Contractor supplements technical assignment with other initial materials and documents and provides this package of initial data to the design company which is meant to implement design documentation development.

The preparation of initial data and the technical assignment is an obligation of the contractor, but investor may be involved in this process as well as the design

company and some scientific institute. If so, all preliminary requirements for the technical assignment have to be discussed with the contactor and investor. So the structure of the assignment may be either common or individual.

If the technical assignment refers to an industrial building with a manufacturing process, it must contain a part dedicated to production process parameters. This part must be developed by a company, which will operate the manufacturing process (probably a unit of the investor company) and approved by the Contractor.

The exact content of the technical assignment for design in Russia is not fixed by one law, but there are several enactments, which provide some requirements for it. According to Federal law №384, the following parameters must be stated by the Contractor in the technical assignment for design:

- Functional purpose of building
- The relation of the construction object to transport infrastructure or to other objects possessing special functional features, which may have an influence on their safety
- The possibility of dangerous natural or anthropogenic influence on the construction area
- The relation of the construction object to hazardous manufacturing facilities
- Fire and explosion hazards
- Constant presence of people in building
- Safety (responsibility) class

However, Federal law №384 has a discrepancy, article 11 §4 states that the safety class of the building must be mentioned in the technical assignment, but article 15 §2 of the same law establishes that the safety class must be fixed in initial data for design.

Technical assignments for construction objects of a high safety class may provide necessity of scientific support with engineering surveys or/and design

documentation development and erection of the object. The design documentation of hazardous industrial objects, referring to buildings of high responsibility class, must contain structural, technical and organization measures on saving people's lives and health as well as protecting environment from dangerous consequences of accidents during construction, operation, conservation or demolition of such buildings. (Federal law №384, art. 15 §3)

In cases stipulated by the technical assignment, the design documentation of building or structure should provide:

- Devices for outdoor lighting (Federal law №384, art. 23 §3)
- Measures on preventing flooding the premises and structures in cases of accidents in the water supply system (Federal law №384, art. 25 §2)
- Equipping the building with devices metering the energy resources consumption (Federal law №384, art. 31 §2)

The necessity and volume of design documentation development by sections № 6, 11, 5, 9 are defined by the contractor and fixed in the technical assignment excluding construction objects which are partly or fully invested from state budget. (Decree of Government №87, art. 7)

The necessity of developing design documentation for separate construction stages is defined by the contractor and fixed in the technical assignment. (Decree of Government №87, art. 8)

SNiP 11-01-95, which defines the exact contents of the technical assignment, is cancelled. Decree of Government №87 is meant to be a substitute, but it does not contain entire information about the contents of the technical assignment. So nowadays it is still reasonable to use SNiP 11-01-95 for help. According to this document the technical assignment for design documentation development should include the following information (SNiP 11-01-95, app. A):

- Name and location of the construction object
- Basis for designing
- Designing by phases
- Requirement on variable and tender design
- Special construction conditions
- Main technical and economic parameters including power, productivity rate, manufacturing program
- Requirements for parameters of products quality, competitiveness and its ecological characteristics
- Requirements for manufacturing process
- Requirements for architectural, space planning and structural solutions
- Defining separate construction stages
- Requirements for prospective development of the enterprise
- Requirements for environmental safety
- Requirements for safety mode and occupational hygiene
- Requirements for production assimilation
- Requirements for measures of civil defense and emergencies prevention
- Requirements for execution of scientific researches and experiments
- Contents of show materials

As it can be studied from the above-mentioned statements, the technical assignment should contain lots of information. The content of the technical assignment is to be set considering special features of the industry branch and the purpose of construction. There are several effective laws regulating the contents of the technical assignment somehow. It forces to use helpful, but expired documents to compose the technical assignment. However, supplemented by other initial data the information fixed in the technical assignment must be comprehensive enough for design documentation development.

Nowadays the situation with personnel is so that there is a lack of qualified designers. Under these circumstances when the level of the designer’s skills has

decreased, it is essential to carefully describe all the requirement and conditions in the technical assignment for design documentation development. Until recently the technical assignment was to be endorsed by state expert examination. Experts could correct wrong assumptions in time and set the task to designers. This allowed to avoid mistakes in advance. Nowadays the technical assignment does not have to go through state expertise. It decreases the time of endorsements but increases the number of design projects which are not able to receive the positive conclusion of state expertise. (Moscow Center of Enterprise Development, 2008)

No matter whoever composed the technical assignment (contractor, head design company, subcontractors, etc.), it must be approved by the contractor and investor. Then it should go through several endorsements in the following sequence:

- Scientific and research organization (if necessary)
- Head of local administration or district board
- Local architectural and planning department
- Local prefecture (vice prefect for construction)
- Local urban planning unit
- Integrated improvement office
- Main department of civil defense and emergencies prevention
- Underground structures department

Although in contrast to other documents the technical assignment must be approved sequentially, the overall duration of these endorsements is about 1.5-2 months. Their official price is approximately the same in all regions of Russia, about 30000 roubles (Appendix 2).

5 INITIAL PERMISSIVE DOCUMENTATION

Initial permissive documentation (in Russian Исходно-разрешительная документация) is a package of documents declaring the opportunity of construction on a certain land plot. This package contains endorsements and requirements of all organizations and authorities concerned. Gathering initial permissive documents includes applying to different organizations such as local administration, architectural and planning authorities, land affairs offices and others. Initial permissive documentation includes the following information (Consult Geo Group, 2009):

- Main requirements and recommendations for the construction object allocation and space planning solutions
- Main requirements of organizations which will endorse the design documentation
- Defining the construction opportunity in accordance with appropriate sanitary and ecological requirements for object allocation, its functional purpose, operation conditions and impact on the environment
- Recommendations for number of design stages (1 or 2)
- Opportunity and conditions of engineering and technical supply

The demanding number of initial permissive documents may vary from few pieces to several dozen depending on the land plot location and project complication. The most essential documents, which have to be received during this phase, are:

- Main permissive document
- Final technical conditions for connection to networks of engineering and technical supply
- Urban development plan of a land plot

Initial permissive documentation gives the Contractor a legislative basis for its construction intentions and allows to start development of design documentation.

5.1 Main permissive document

The primary stage of receiving initial permissive documentation is obtaining a main permissive document in a local prefecture or with an appropriate Decree of Government. This document gives a legislative substantiation and fixes the intention of the Contractor to implement the design and construction of the object. This stage is explained in a more detailed form in Decree of Moscow Government №378 than in federal legislation.

The basis for the development of initial permissive documentation in case of land rent necessity (FlexForm, 2008):

- An assignment of the local prefect
- An assignment of the local vice prefect
- An assignment of the city department of land affairs or town planning
- Legislative act from city administration

The basis for developing the initial permissive documentation in case of formalized land affairs (ibid.):

- An assignment of the local prefect
- An assignment of the vice prefect for construction authorized by the general prefect
- Contractor’s application

There is no exact information found about obtaining the main permissive document in other subjects of the Russian Federation. However, a decree or resolution from local administration, confirming that state organizations know about the

contractor’s intentions and have no objections against prospective construction, must be received. After obtaining the main permissive document the development and receiving of other initial permissive documents can be started.

5.2 Technical conditions

Intending to implement the erection of a construction object the contractor has to receive technical conditions (in Russian Технические условия) for connection to networks of engineering and technical supply. The networks of engineering and technical supply are technical structures used in processes of electricity, heat, gas and water supply and sewage. Technical conditions are a document containing information about maximum loads, connection points and duration of connection to appropriate networks.

The order of obtaining technical conditions is established in Decree of Government №83. In accordance with this document, the contractor, which intends to implement the erection of a construction object or connection to networks of engineering and technical supply, should apply to organizations that maintain those networks. Technical conditions for connection to networks of heat, electricity, gas and water supply and sewage are provided on the basis of a permit for engineering supply issued on the stage of engineering surveys. Issued valid technical conditions are a basis for design documentation development.

The application for the issuance of technical conditions should include the following information:

- Copies of association articles
- Copies of the documents, declaring the land plot ownership
- Information about land plot boundaries
- Information about permitted use of the land plot
- Information about limits for permitted construction

- Planned data of operation start
- Design value of loads for connection to networks

An organization, which maintains networks, must define and issue technical conditions in 30 days from the date of application. (Decree of Government №83, art.7) If the connection is impossible, the organization must issue a reasoned refusal. The possibility of connection is defined by the availability of throughput capacity reserve which may provide the required volume of energy resource. The absence of the mentioned reserve leads to refusal in the issuance of technical conditions.

Technical conditions must contain information about the maximum load in connection points, their location and duration of the connection of the construction object to networks of engineering and technical supply. Technical conditions are in force for 2 years. After this period expires, the technical conditions may be changed. The price of the technical conditions issuance is set by organizations that maintain the networks.

The duration of this stage depends on the presence of networks in the area of construction. According to information given by some contractor companies, the process of receiving technical conditions takes 2-4 months. The duration may increase because this stage contains the endorsement not only the capacities and connection conditions but also the type and volume of so called “encumbrances” – the contractor’s contributions into the networks development. It means that there can be special conditions obliging the contractor to create new infrastructure objects or building new networks. The cost of “encumbrances” may reach several million roubles.

5.3 Urban development plan of a land plot

An urban development plan of a land plot (in Russian Градостроительный план земельного участка or ГПЗУ) is an essential document, which is provided by a contractor to the design company for design documentation development. It is also necessary to pass the state expert examination of design documentation, obtain a building permit and a permit for starting the facility operation. Urban development plans are designed for to the land plots intended for new construction or renovation of existing dwellings.

The importance of the urban development plan can be explained by the information contained there. In a common case, the following information is included in the plan (Town Planning Code, art.44):

- boundaries of a land plot;
- boundaries of public easements zones;
- minimum margins of land boundaries for the purpose to determine the permissible locations of the buildings and structures, beyond which is prohibited the construction of buildings, structures and facilities;
- information about town planning regulations (In this case the urban development plan of a land plot should contain the information about all the permitted kinds of the land plot usage);
- information about permitted kinds of land plot usage, requirements for purpose, parameters and location of the construction objects on the stated land plot
- information about construction objects and objects of cultural heritage located within the boundaries of a land plot
- information about conditions for connection the constructions object to the networks of engineering and technical supply
- boundaries of the zone designed for location of the construction objects for state and municipal needs

Thus, the urban development plan of a land plot contains quite a significant amount of information about permissible construction on a particular land plot.

Failure to fulfill the requirements of urban development plan by a contractor can lead to many negative consequences. The discrepancy between the design documentation and the requirements of urban development plan can be a reason for refusal to issue a permit for construction. As well as the discrepancy between urban development plan and real estate created by construction or renovation grounds to the refusal to issue a permit for starting the facility operation.

In accordance with the general rule established by Town Planning Code, the urban development plan of a land plot making can be carried out in following ways:

- as a part of land surveying design
- as a separate document

Land surveying designs are made within the designing of other town planning documentation. Thus, the endorsement of the urban development plan as a part of land surveying designs is quite a long and complicated process. The absence of the above-mentioned designs does not prevent the owner of the land plot from ordering the urban development plan as a separate document by applying to authorized organization with an appropriate request.

Local authorities should issue the urban development plan of a land plot or a reasoned written refusal in the fixed period of time (generally 30 days or less).

It should be noted that the procedure of obtaining the urban development plan in Moscow has some special features. Unlike the federal laws, this procedure is regulated more detailed by Town Planning Code of Moscow.

In Moscow an additional need is to receive the prefect's order (or a governmental decree) on the approval of the urban development plan of a land plot. The builder, who owns a land or a property for renovation, and intends to perform the construction or renovation, has to apply to a local prefecture with a request. It should include information about the owned land plot or other property, the purpose and characteristics of new town planning object (Law of Moscow №50). Based on an approved plan of the construction location and the resolution of conformity issued by the Moscow Committee of Architecture and Town Planning, the local prefecture informs the contractor about the results of consideration in a written form in 5 days.

If the declared construction does not contradict the approved plan of the construction location and town panning requirements, the next stage follows:

- The Moscow Committee of Architecture and Town Planning issues the act of allowed usage on the basis of the existing town planning documentation or new town planning substantiation developed specially for the current project
- The local prefecture carries out the development, endorsement and providing for an approval the resolution of construction.

The list of documents which must be provided for receiving an urban development plan is not regulated on the federal level, but depends on legislation of towns, administrative districts and subjects of the Russian Federation. The local Committee of Architecture and Town Planning has a rule to form its own list of documents required for making the urban development plan. In common case it can be the following:

- application for making the urban development plan of a land plot;
- copy of passport and registration list (for individuals) or copies of association articles (for companies);

- copies of the documents, declaring the land plot ownership;
- copies of the documents, declaring the ownership of the construction objects (if any existing on the land plot);
- technical passports for all the construction objects located within the boundaries of a land plot;
- information about the boundaries of a land plot, the landmark coordinates in the form of one of the following documents:
    - the extract from state real estate cadastre;
    - land surveying design;
    - land management documents;
    - landmarks plan;
- topographic survey of the land plot with mapping all the underground, ground and above-ground communications, scale 1:500;
- specifications for connection the construction object to the networks of engineering and technical supply;
- sketch design of the construction objects location endorsed by local Committee of Architecture and Town Planning and including the following drafts:
    - site plan of the construction objects location
    - sketch of space planning solution
    - schema of master plan pointing the objects to be demolished or saved, scale 1:500-1:2000
- main technical and economic characteristics, planned functional purpose of the objects, landscape gardening and building percentage, main parameters of the construction object
- calculation of required number of car parking places
- insolation calculation (if necessary)

In some cities the Committees of Architecture and Town Planning do not design an urban development plan but only approve it. In this case the obligation of its development belongs to a contractor or employed subcontractors.

5.4 Endorsements of initial permissive documents

This stage is optional and may be necessary or not. It depends on the region of construction. In some cases organizations concerned may require additional endorsements of initial permissive documents. Most likely there comes a need of approving the urban development plan of a land plot by some local planning unit. If the construction is allocated near objects of historical heritage, the Committee for Protection, Conservation and Use of Monuments must issue its conclusion. So there cannot be an exact list of organizations to approve initial permissive documents, but for example it may be the following:

- Local prefecture
- District board
- Department for civil defense and emergencies prevention
- Federal service for supervision of consumer rights and human welfare
- Underground structures department
- Local committee for use of natural resources and environmental safety
- Local urban planning unit
- Committee for protection, conservation and use of monuments
- Land affairs department
- Real estate department

A fixed duration of endorsement with each organization is 2 weeks. Authorities which have already taken part in the endorsement of sketch design and other pre-design documents do not have to approve the initial permissive documentation package excluding the case of changing or improving previously mentioned documents.

If the erection or operation of new construction objects may have an adverse impact on environment, initial permissive documents have to be approved by the local Committee for Use of Natural Resources and Environmental Safety

Organizations authorized to execute the supervision and control must endorse initial permissive documents without requesting any preliminary approvals of other organizations. It means that there must be no established sequence of initial permissive documentation endorsement. All approvals may be done at the same time or step by step in any order.

The initial permissive documentation package for new construction must be registered in State Town Planning Cadastre. The effective period is set according to local norms for duration of designing and endorsement the construction documentation. The effective period must be not less than 1 year from the day of registration. When the validity of the initial permissive package expires, the Committee of Architecture and Town Planning defines whether it may be corrected, prolonged or cancelled.

6 DESIGN PHASE

This phase involves the development of the design documentation package in accordance with all available initial permissive documents, technical assignment and effective legislative and normative acts. The main purpose is to fix in the drawings all structural, architectural and space planning solutions. Everything that concerns bearing capacities, safety and quality must be developed entirely. The level of completeness should be high, but design documentation ought to exclude secondary information. When composing the design documentation, it is necessary to remember that it is going to be examined by state expertise. So the volume of documentation must be sufficient but not redundant. When the design documentation is ready, it has to be approved by organizations concerned, then passed to state non-departmental expert examination and finally approved by the contractor.

6.1 Initial data for design documentation development

Initial data for design (in Russian Исходные данные для проектирования) is basic information that is necessary for design documentation development. It must be provided by the contractor either to its own design unit, or to company which will make the design, if one is employed. The initial data must be full, comprehensive and sufficient for design documentation development. There is no enactment regulating the exact content of initial data, moreover it depends a lot on the project. But for a common project of big industrial enterprise this initial data must contain the following sets of documents:

- Approved technical assignment for design documentation development
- Technical conditions for connection to networks of engineering and technical supply (according to article 48 §7 of Town Planning Code)
- Reports of engineering surveys results
- Sketch design and other pre-design materials
- Topographic basis (plan of land plot surveying with underground networks marked, scale 1:500)
- Approved and registered urban development plan of a land plot
- Initial data and requirement for engineering and technical measures on civil defense and emergencies prevention
- Other initial permissive documents (Contractor’s resolution for designing and construction, permissive letter from committee for protection, conservation and use of monuments, etc)

The best way to describe this stage is to declare that the contractor should pass all available pre-design and initial permissive documentation to the developer of design documentation. The most important is to carefully work out the details of the technical assignment.

6.2 Design documentation development

Design documentation (in Russian Проектная документация) is developed only after obtaining a preliminary approval for the place of the object allocation. The basis documents for developing design documentation are (SNiP 11-01-95, §3.1):

- Approved feasibility studies of investments in the construction
- Other pre-design data
- Contract agreement
- Technical conditions for design
- Engineering survey data

Design documentation for construction ought to be developed only by qualified specialists with profile education and necessary experience. Generally the contractor should employ the design company which will develop the design documentation. It is not obligatory to conclude the contract with the company which developed sketch design. Sometimes a tender competition may be organized. If contractor has its own design unit capable of design documentation development, there is no limit to use this opportunity, but this unit must have a certificate issued by Self-Regulatory Construction Organization. The development of the design documentation is implemented in accordance with the requirements of:

- Initial permissive documents
- Town Planning Codes
- Construction normative documents
- Specifications for design approved by a contractor
- Initial data and technical conditions issued by:
    - Executive organs
    - State supervision bodies
    - Maintenance organizations
    - Local administration

There are “Common System of Engineering Documentation” and a “System of Design Documentation for Construction” which contain requirements on the appearance and design of drawings. Previously SNiP 11-01-95 fixed the contents of design documentation for different types of construction as well as contents of technical assignments for those types of design documentation and required lists of technical and economic parameters. This document was worked at very well, but unfortunately it was cancelled in 2008 and substituted by Decree of Government №87 which is not so clear and effective to use. So nowadays under circumstances, the names and number of design documentation sections are enacted by article 48 §12 of Town Planning Code:

1. Explanatory note
2. Layout drawing of a land plot
3. Architectural solutions
4. Structural and space planning solutions
5. Information about engineering equipment, networks of engineering and technical supply, list of engineering and technological activities, technological solutions content

    a) Electricity supply system
    b) Water supply system
    c) Sewage system
    d) Heating, ventilation and air conditioning, heating networks
    e) Communication networks
    f) Gas supply system
    g) Technological solutions

6. The construction organization design
7. The project of organizing the demolition or dismantling of construction object or its parts (in case of such necessity)
8. List of measures for environmental protection

9. Arrangements providing fire safety
10. Arrangements providing invalids access
11. The construction cost estimation
12. Other documentation in cases stipulated by federal laws

The contents of the above-mentioned sections is comprehensively described and fixed in Decree of Government №87. The design documentation should be developed only by these sections, no deviations allowed. Everything that does not refer to first 11 sections must be included into the section 12 “Other documentation”.

It is necessary to note that the design organization, which developed design documentation, is fully responsible for all the design solutions offered. It is the reason for engineers to request all necessary for the design initial data from the contractor or even insist on performing an extra engineering survey or scientific research.

The design documentation, which has an approval of state expert examination (§7.1) and of state ecological examination, if necessary according to legislation, should be approved by the contractor. Data on approved design documentation is to be recorded in State Town Planning Cadastre by a local Committee of Architecture and Town Planning. Then it should be provided to appropriate territorial executive authorities and local administration.

6.3 Endorsement of design documentation

After the design documentation has been developed, it must be endorsed with many authorities and organizations concerned. The number and sequence of endorsements vary a lot and depend on the level of project complication and the region of construction. As usual, those are the main determinants of the whole construction designing and endorsement process. Also surrounding area, presence

of buildings, networks and structures including underground ones, roads, etc have a significant influence on the duration of this stage. In fact, having a target to reduce the duration, it is a usual practice for the contractor and designer company to endorse and approve certain sections of design documentation as only they are developed, not waiting for the accomplishment of the entire package. Therefore, documentation sections, which require higher number of approvals, should be developed first of all. From this view, the most problematic design parts are master plan, site plan and summary plan of networks (Moscow center of enterprise development, 2008). Schemas of approval processes are provided in Chart 4, 5, 6 and 7. While these parts are being endorsed, the design company develops other documentation sections.

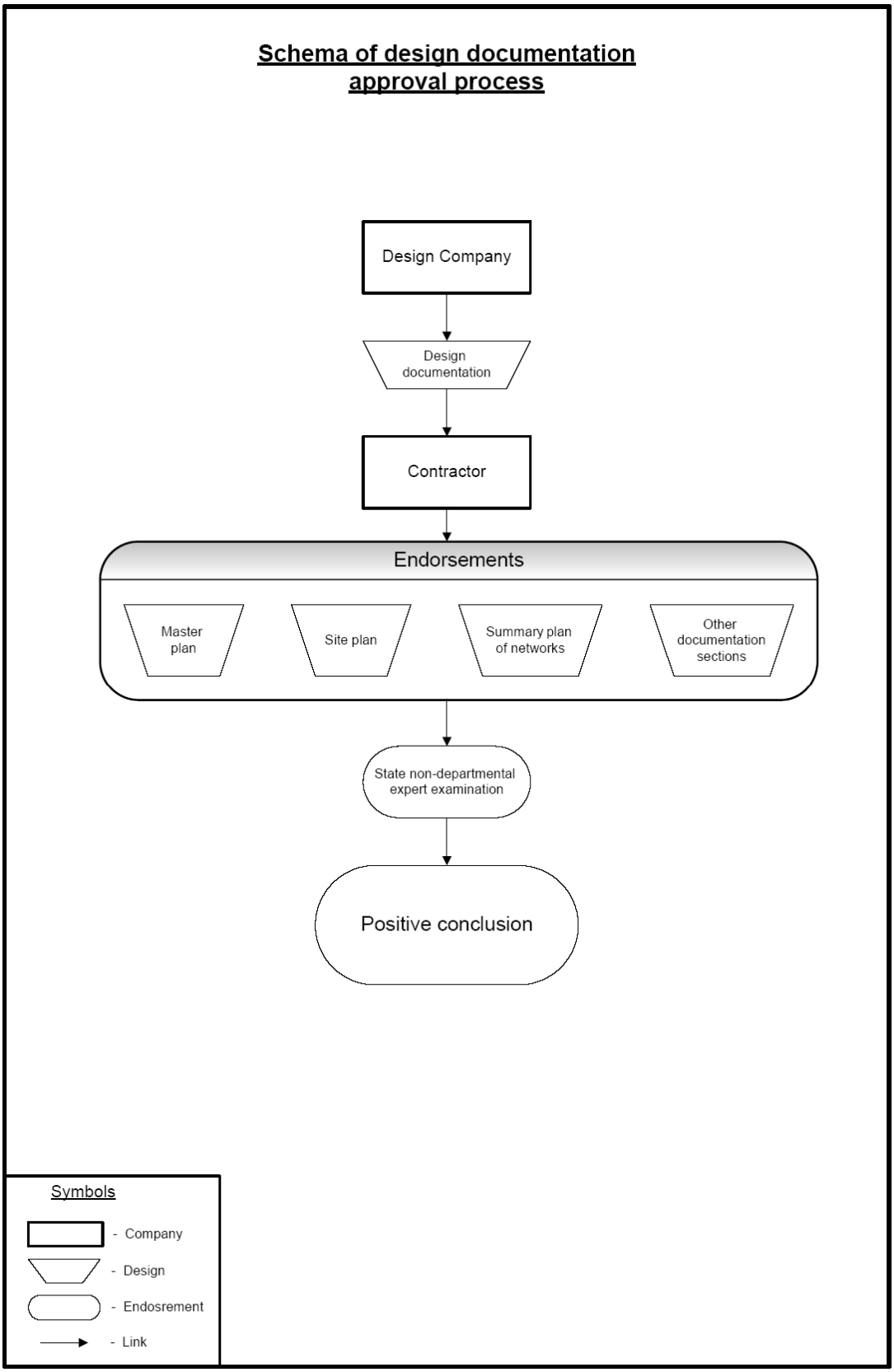

Chart 4. Schema of the design documentation approval process.

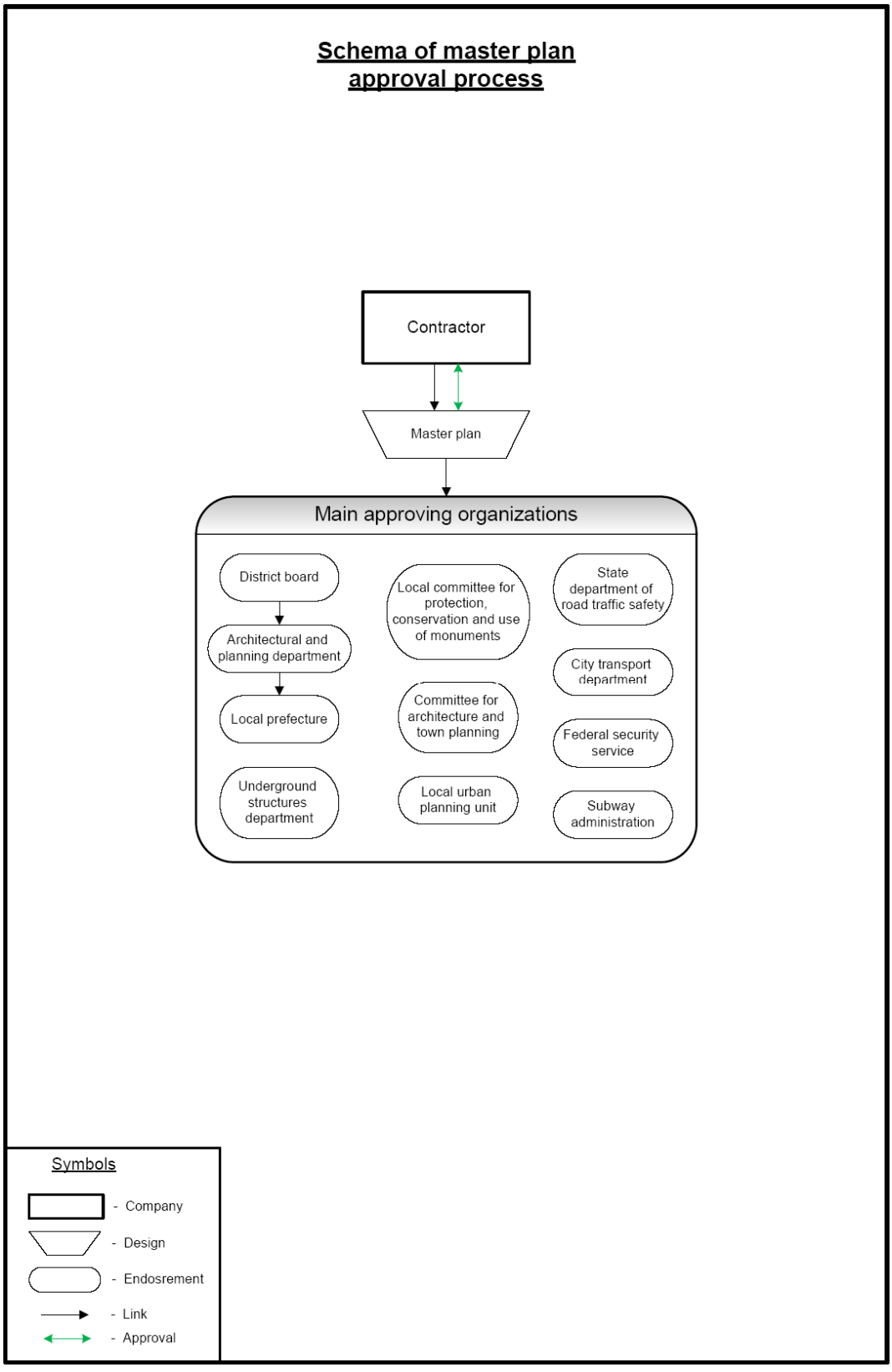

Chart 5. Schema of the master plan approval process.

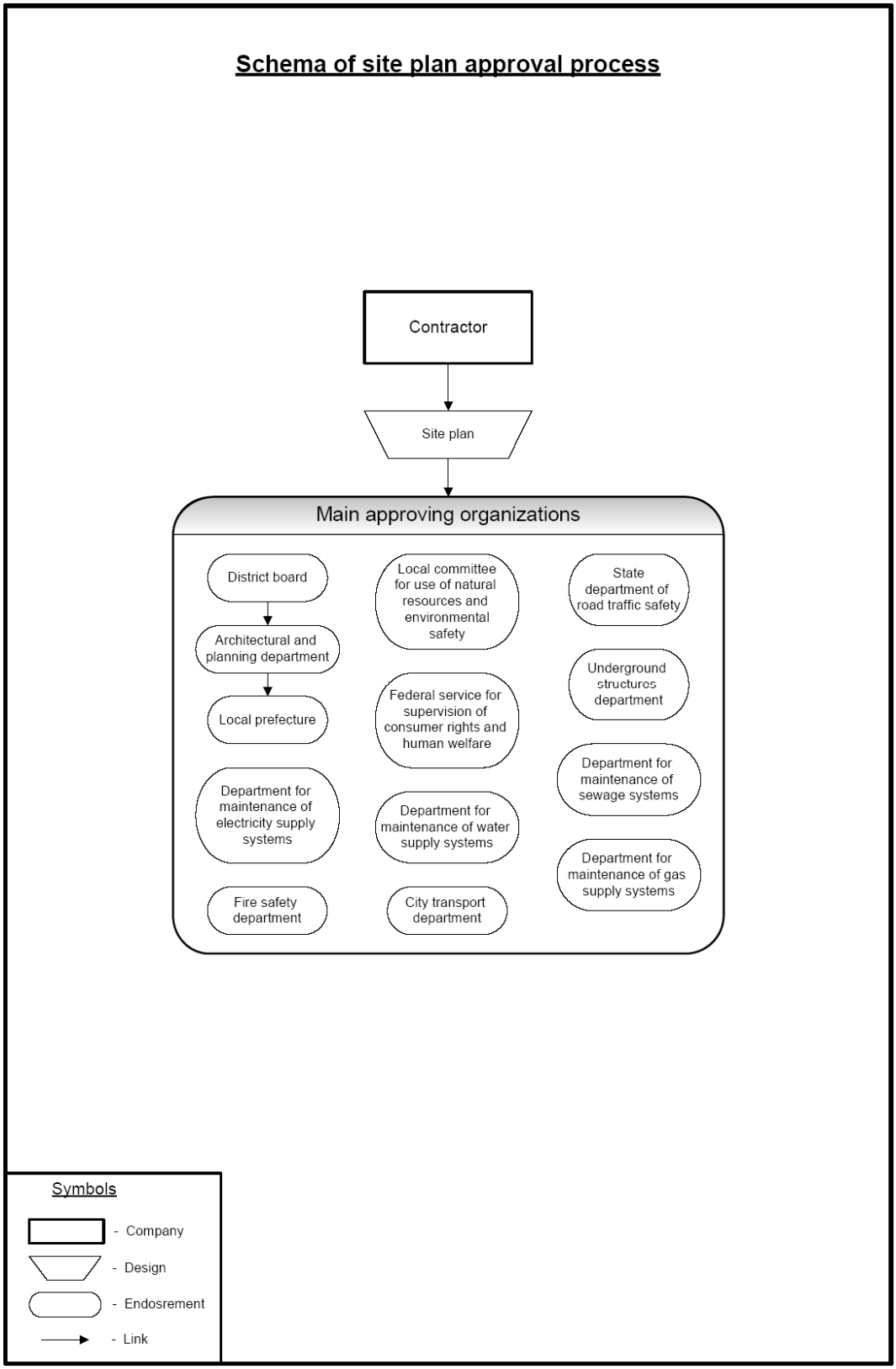

Chart 6. Schema of the site plan approval process.

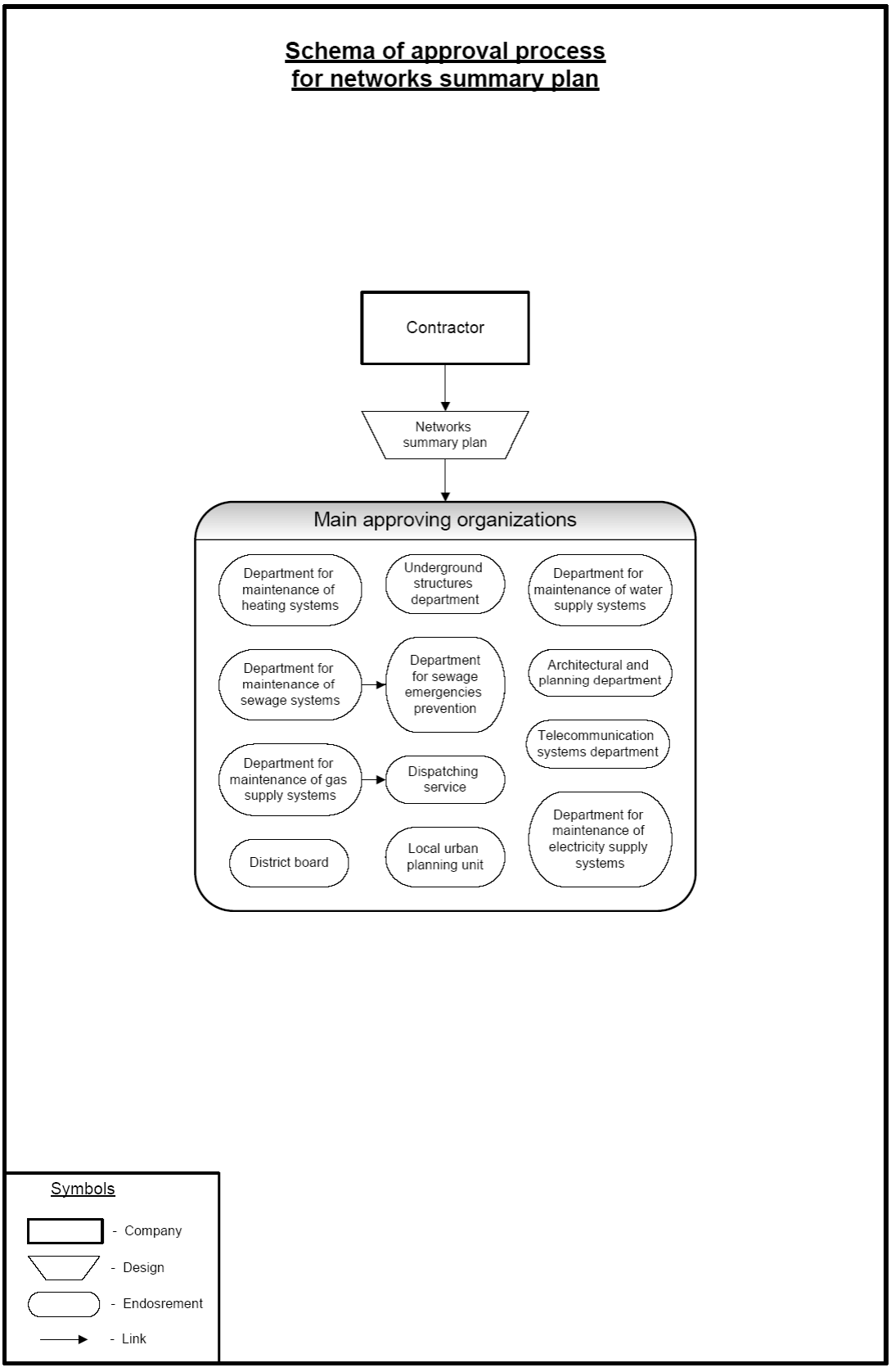

Chart 7. Schema of the approval process for networks summary plan.

Chart 4 shows the concept of design documentation endorsement. Firstly it should be provided to Contractor Company and examined by it. Then the most complicated drawings of documentation i.e. are master plan, site plan and summary plan of networks should be endorsed with organizations, which are listed in appropriate Charts 5, 6 and 7. After these and all other parts of design are developed and endorsed, the design documentation package must go through state examination, which is extensively described in section 7.1 of this thesis.

If the project is not unique, but typical and model design documentation is used, there is one more way used to reduce the construction duration. The erection starts at the same time while the design documentation is being endorsed. There were individual cases when the period between receiving the positive conclusion of state expertise and operation starting was less than 2 weeks. Surely this way contradicts law, but it is still used in practice. (Moscow Center of Enterprise Development, 2008)

Every subject of the Russian Federation has its own specific legislative or normative acts, which provide lists of authorities for approving every section of design documentation. Furthermore, every documentation section should have a list of obligatory endorsements and of additional ones, which are necessary only in special cases. Main possible endorsements are listed in Charts 5, 6 and 7.

After receiving all resolutions, conclusions, decrees and other approval documents from authorities concerned, the approved design documentation must be provided to state expert examination for getting a qualified assessment of state construction experts.

7 CRUCIAL ENDORSEMENTS

This chapter describes the contractor's activity after the design documentation has been completed and endorsed. Now the contractor possesses all necessary documents to receive the construction permit and the only remaining event is passing through state expert examination. The task is to gather the documents and prepare the right package for providing to experts. Their main target is to check the compliance of the design with effective norms and assess the efficiency of solutions. When the positive conclusion is granted, it must be supplemented by a list of other documents and provided to service of architectural and construction supervision. In its part, this organization checks whether the design complies with the requirements of the urban development plan and other town planning documentation. If there are no remarks, the construction permit will be granted.

7.1 Expert examination of design documentation

After the design documentation has been entirely developed and approved, the next stage for a contractor and head design company is to pass the state non-departmental expert examination (expertise). A positive conclusion of expert examination is the main document for obtaining the construction permit.

The main purpose of state expert examination is to give an assessment whether the developed design documentation meets all the requirements of technical regulations or not. Technical regulations contain requirements for sanitary, epidemiology, ecology, monuments protection, fire, industrial, nuclear, radiation or another safety. Also the compliance with the results of engineering surveys is checked. (Decree of Government №145, art. 27) Currently the functions of state non-departmental expert examination are executed by the Federal state establishment "Glavgosekspertiza" and its affiliates.

Article 49 §2 of Town Planning Code provides a list of construction objects for which passing the state expert examination of design documentation is not necessary. However, it does not refer to big industrial buildings excluding the case of using the same (approved by state expertise) design documentation repeatedly for construction on different land plots. The expert examination is also not necessary if the typical design documentation has been modified, but not concerning bearing structures and other aspects having an influence on safety and quality. (Town Planning Code, art. 49 §3; Decree of Government №145, art. 8)

The list of documents which have to be provided to state expert examination is the following (Decree of Government №145, art. 13, 16):

- Application for implementation of state expert examination which should include information about the applicant, construction object and executors of engineering surveys
- Design documentation for the construction object which meets the requirements for its contents, composition (Decree of Government №87) and others established by legislative and normative acts of the Russian Federation
- The copy of technical assignment for design documentation development
- The results of engineering surveys designed in accordance with the requirements established by legislative and normative acts of Russian Federation (or a positive conclusion of expertise if was passed before)
- The copy of the technical assignment for engineering surveys implementation (not necessary if the expertise of engineering surveys was passed before)
- The positive conclusion of state ecological expert examination if has been passed
- Documents declaring the right of applicant to act as a Contractor’s representative

It is necessary to note that according to Town Planning Code of Moscow and norms of some other subjects of the Russian Federation it is obligatory to provide an urban development plan of a land plot within the package of design documentation. Then the design documentation will be checked for compliance with the urban development plan.

According to article 21 of Decree of Government №145, an organization which performs state expertise must check the completeness of documentation package in 3 days. The duration may be 10 days for complicated construction objects described in article 9 of the same enactment. Then the organization must provide a contract for expert examination execution or reasoned refusal in expertise.

The result of the examination is a positive or negative conclusion. If it is negative, the defects and mistakes should be fixed and design documentation goes through expertise once more. Officially the duration of expert examination must not exceed 3 months. But the duration of this stage may be much more, because it depends on the skills of designers a lot. If the design documentation has mistakes, which are detected by expertise, there will be a need to correct or even remake the design. Furthermore, experts may request to provide a conclusion of scientific or research organization in case of such necessity. The price of state expert examination is set in the contract agreement and usually it is about 10% from all costs of design documentation development and endorsement.

7.2 Obtaining a construction permit

According to article 222 of Civil Code the property built without a special permit as well as the one built on a land plot not intended for construction is classified as an “unauthorized structure”. The person who carries out unauthorized construction does not possess the right of ownership, so he has no right to sell, grant lease it or conclude any other bargains. Such structure is a subject for demolition by a person, who erected it, or at his expense. Furthermore, article 9.5 of Code on

Administrative Offences states that the real estate construction performed without a building permit is punishable by an administrative fine in size from 3 to 5 times the minimum wage.

The order of obtaining a construction permit is established in article 51 of Town Planning Code. In accordance with it, the construction permit is a document which confirms that design documentation satisfies the requirement set in the urban development plan of a land plot and allows the contractor to start construction implementation.

The construction permit is not required in several cases stated by article 51 §17 of Town Planning Code. There is no need to list them because in case of constructing a new industrial enterprise the construction permit is required anyway.

In the majority of cases the organization that issues construction permits is the executive authority of the district. Executive units of the subjects of the Russian Federation and federal ones are also authorized to issue construction permits. Most likely these functions execute services of architectural and construction supervision. If they are not established in the district of construction, the Committee of Architecture and Town Planning may substitute them. For receiving a construction permit, the contractor sends to an appropriate organization an application and the following list of documents:

- Documents, declaring the land plot ownership
- Urban development plan of a land plot
- Design documentation materials:
    - Explanatory note
    - Layout drawing of a land plot designed in accordance with the urban development plan of a land plot, indicating the location of construction objects, entrances and passages to them, boundaries of public easements, sites of archaeological heritage

    - Plans displaying architectural solutions
    - Information about engineering equipment, summary plan of networks of engineering and technical supply with marks of connections the construction object to city networks of engineering and technical supply
    - The construction organization design
    - The design of organizing the demolition or dismantling of construction objects or their parts
- Positive conclusion of state expert examination about the design documentation, positive conclusion of state ecological expert examination (if necessary)
- Permit for a deviation from the limiting parameters of permitted construction (if Contractor has been granted such permit according to article 40 of Town Planning Code)

In addition the conclusion of non-state expert examination may be supplemented to the main package of documents. No other documents may be requested except those in the list above. (Town Planning Code, art. 51 §§8, 10)

Organizations authorized for construction permits issuance must perform the following events in 10 days after receiving the contractor's application (Town Planning Code, art. 51 §11):

- Check the contents of documents attached to application
- Examine whether design documentation complies with the requirements of the urban development plan of a land plot. If the contractor has been granted a permit for deviation from the limiting parameters of permitted construction, the design documentation must be examined on the subject of compliance with the requirements of that document
- Grant a construction permit or issue a reasoned refusal

The construction permit is issued for the period provided in construction organization design. The validity period may be extended by the organization which issued the construction permit. If construction implementation has not been started, it can be a reason for the refusal in the prolongation of the permit. Obtaining a construction permit as well as its prolongation is free.

Possessing a valid construction permit allows the Contractor to start construction implementation.

8 DETAILED DESIGN

All design solutions, which have been approved on the previous stage, now must be completely developed. Design documentation does not contain enough data to implement construction. For this purpose detailed documentation should be developed. It contains all necessary drawings, explications, cost estimations, time schedules, etc. Also this phase involves defining all the subcontractors, constructors by organizing a tender competition or somehow else. If a tender is organized, tender documentation must be developed. This stage is last in the designing process, then the design is finished and the erection may be started.

8.1 Detailed documentation

This stage consists of careful and detailed development of all technical aspects. Detailed documentation (in Russian Рабочая документация) is deeply improved design documentation. Design documentation gives a knowledge what is meant to be built, what it will look like and how much it should cost. Detailed documentation explains how everything must be constructed and provides exact prices of every element. The number of detailed drawings may be 40 times bigger than the number of design drawings. The volume of detailed documentation must be enough for construction implementation by the qualified constructor company.

These are the final drawings which go to factories for construction elements production and to the construction site for mantling prefabricated elements and on-situ casted ones.

Basically the development of detailed documentation should be started right after the approval of the design documentation by state non-departmental expert examination. Taking into consideration the duration of all endorsements and expertise of design documentation, it is reasonable to start detailed documentation development after the design one is finished. In some cases design and detailed documentations are developed at the same to decrease the duration of designing process. This does not contradict law, but the fact that state expert examination may demand making essential corrections into design documentation should be taken into consideration.

The detailed documentation may be developed by the head design company, its subcontractors or other design companies employed by the contractor or investor, whatever the contract agreement states. This company must participate in Self-Regulatory Construction Organization and have its access for designing.

The requirements for the design and contents of detailed documentation are set in GOST 21.1101-2009. Appendix B of this document lists more than 30 sections, which may contain detailed documentation for a particular construction object.

Detailed documentation for providing to the contractor consists of (GOST 21.1101-2009, §4.2.1):

- Main sets of detailed drawings for construction and mantling implementation
- Supplementary documents developed in addition to main sets of detailed drawings

Certainly it is not obligatory for one company to develop the entire package of detailed documentation. On the contrary, it is reasonable for a contractor to divide its development between several design companies specialized in making exact sections (for example, networks of engineering and technical supply). This will reduce the duration of the designing process, which can last up to year and more on this phase.

If detailed documentation development detects a need of any changes in structural, technological or other solutions approved by state expert examination of design documentation, it will be necessary to go through state expertise again. (Project holding, 2009)

The necessity of detailed documentation endorsement with some organizations concerned depends on the project, but the full list can be the following:

- Fire safety department
- Federal Service for Supervision of Consumer Rights Protection and Human Welfare
- State department of road traffic safety
- City transport department
- Local committee for protection, conservation and use of monuments
- Underground structures department

Detailed documentation for constructing networks of engineering and technical supply designed in accordance with technical conditions (this must be approved by the chief engineer of the project) is not a subject of endorsement with organizations which maintain those networks. This documentation section must only be approved by the underground structures department. (ibid.)

8.2 Tender documentation

After starting the development of detailed documentation, it is time for a contractor to look for constructors and subcontractors, which are intended to realize the design and erect the building, deliver construction materials, lease the equipment and machinery, build the networks of engineering and technical supply, roads if necessary, other infrastructure objects, etc. whatever provided in the design. The contractor has two variants to perform. One of them is to choose certain companies and conclude contract agreements with them. This method can be called “negotiated contracts”. Surely the contractor chooses reliable companies, so this variant provides good quality of construction implementation and confidence in keeping the schedule terms. Another option is to find the cheapest variant on the market and involves competition organization (tender). It can be called tendered contracts. The contractor needs to develop tender documentation and provide it (in some cases for payment) to companies which would like to participate in tender competition.

Tender documentation is developed by a tender committee. It consists of 2 parts: technical and commercial. Technical part includes:

- Description and basic information about the subject of tender. Construction object allocation, functional purpose, main technical and economic parameters, presence of external infrastructure, local construction materials, approaches and construction duration should be declared in this section.
- Information about engineering surveys execution and results
- Technical parameters of the object, basic statements, master plan, architectural, structural and space planning solutions including drawings of water supply and sewage, ventilation conditioning, gas supply and low voltage systems, electro technical works and requirements for ecological safety.

Commercial part includes requirements for:

- Price and order of its evaluation
- Conditions and duration of procurements
- Conditions of payments and its schedule
- Resource of investments
- Bank warranty on construction implementation by a Russian or foreign company in accordance with a provided offer in case if this company wins the tender

At the tender committee's discretion, the commercial part may include requirements concerning certain types of insurance of the subcontractor's responsibility for failure to implement its contract duties. (Asaul & Karasev, 2001)

According to contract agreement, documentation for tender competition should be provided by the contractor, but may be handled by the investor also. Most likely tender documentation is prepared by the design company, which developed design or detailed documentation. Whoever tender documentation is developed by, then it is delivered to potential subcontractors. Participants of the tender buy documentation and develop their tender suggestions on the basis of it. The general contractor or/and investor chooses the most suitable variant, generally the cheapest one, and concludes a contract with the new subcontractor.

One very essential thing to mention is that a subcontract agreement may concern not only procurements or constructing, but also development of detailed documentation. For example, if the subcontractor manufactures and sells some construction elements, no one will do the design of these elements better, faster and cheaper than this company. So if the subcontractor is able to develop detailed documentation for its products and has a permit for designing, it is reasonable to include this option into the contract agreement.

9 CONCLUSIONS

The creation of common schema of construction designing and endorsement process (Chart 1) can be marked out as the main achievement of this thesis. The sequence of main events and activities of construction process participants can be studied from that. The schema may suit as a basic material for endorsement process planning for particular construction case. The entire process from the first contract agreement till construction implementation has been divided into six phases and described step by step.

If there was any accessible information about the duration and price of endorsements, it has also been mentioned in the thesis. The approximate time schedule is provided in Appendix 1. It states the duration of designing and endorsement process as 19-20 months. In fact it is unpredictable. The overall time period required for design development and approval varies from year to several years. Crucial factors are: the region of construction and the level of project complication. If the construction is allocated in Moscow, everything may take 3-5 times more money and time than in remote regions. All found data on normative and approximate real prices and duration of stages is composed into the table “Endorsement parameters” (Appendix 2).

The analysis of the legislation and normative base has been accomplished. There are more than 400 normative and legislative documents regulating the process of construction designing and endorsement. It has been found that federal laws and codes do not contain enough information about the endorsement process. The sequence of phases and stages is not fixed. Furthermore, there are some essential events missed in federal norms. These events are not mentioned directly, but intended to be performed to get the permits. Moreover, one can find contradictions in valid norms not only between each other, but even inside one document. So the conclusion is unfavorable: the federal legislative system is confusing.

Omissions done by federal legislation are compensated somehow in local systems. Every region has its own norms, codes, decrees, enactments, resolutions regulating the construction process. These papers may be totally different with the laws of adjoining regions. Every city, even every district of every city has its own authorities to approve construction design projects. It would be nice if they were affiliates of one state organization and obeyed the same regulations. But unfortunately, those local organizations are independent and set their own rules for the issuance of the permits.

However, the majority of steps are explained by either federal or local legislation. The main problem is the absence of a single law defining the sequence of actions, putting all events in one order. This only means that there can be no unified way applicable in every subject of the Russian Federation.

The normative base is constantly changing. Unfortunately it is not becoming clearer. The attempts of Russian legislative authorities to simplify the system by issuing new laws are not a success, but only bring mess into the existing system. In my opinion, in future it will be better to use European norms for designing and develop an absolutely new legislative system for construction endorsement.

Russian construction market is developing rapidly and attracts foreign designers and contractors. But it is very risky for inexperienced companies, especially foreign ones. It will take a lot more time and money to receive the permits without the possession of comprehensive knowledge on local legislation. Probably the best solution for a foreign contractor is to employ a professional juristic company which will help with all approvals. If the project is complicated, it will be better to employ a experienced Russian design company to develop main sections of design documentation. If the project is extremely complicated, it will be necessary to receive additional conclusions of scientific and research institutes. Otherwise the state expertise will not approve the design anyway. But if the contractor company nevertheless decides to implement construction designing and endorsement

without qualified support of specialized organizations, it will require a deep and careful analysis of current legislative circumstances in the region of the particular construction. In my view, it is neither economically effective for foreign contractors, nor even possible to be accomplished by them.

Foreign designers may act on the Russian market, but they will meet many difficulties. It is better for them to develop those types of documentation, which do not have to be endorsed with expert examination. After studying some practical experience I believe that design documentation entirely developed by foreign designers can hardly be approved by Russian state expertise. So, foreign design companies may develop tender design, sketch design and detailed design.

Final conclusions are the following:

1. All events and details of the construction endorsement process, their duration and price are extremely hard to be forecasted. The process is always individual in every single case.

2. Lack of accessible information has been discovered. Effective normative documents do not contain enough data. The best information source is the practical experience of experienced specialists. But as there is no unified way to endorse the construction, everyone has his own opinion on how the construction project should be approved better.

3. Any company that does not possess the experience of construction endorsement in a particular region of prospective construction should employ a qualified auxiliary organization which will provide support with approvals.

Construction business in Russia is characterized with a high risk, but at the same time it is highly profitable. I believe in future it will be easier for foreign companies to be more competitive on the Russian market than now.

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