

Evolution of reforming of the civil construction industry management system in Ukraine

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Summary. Examined are the problems of the civil construction industry performance. The main shortcomings of the management system scrutinized. The factors had been shaping the Management System of Ukraine Civil Construction Industry revealed. Description is given of elements and mechanisms of management system, advantages and disadvantages “administrative regulation”. Examined are the management technologies of the civil construction industry in the countries of market economy. Examples are given of developing the housing programs in the USA. The summary is given on the mainstream trends in managing the civil construction industry and on areas of optimization of the management system.

Key words: construction industry, management, state regulation

INTRODUCTION

Post-industrial development of the society in XXI century faced the global problems of the territory and power resources scantiness, what turned into a mighty boost for development of innovative technologies in construction industry and stipulated the brand new systematic tasks in management of the construction industry.

The construction branch, in general, bears responsibility for realization of the national economy tasks, which became imminent at a certain stage of social evolution. Solving

these social tasks is the target for the management system of construction industry.

At the present stage of post-industrial development of the society, the main problem is setting the comfortable living environment for population and, at the same time, economic use of tangible material and power resources. This determines the necessity of development of the innovative strategy for reforming the management of the construction industry.

PURPOSE OF WORK

The information technologies for management of implementation of the innovative projects, the education systems etc., were examined in the works of A.A. Beloshitskiy, S.D. Bushuiev, N.S. Bushuieva, P.P. Lizunova. The authors provided proposals on development of innovative information technologies for designing in the heat and power engineering industry, systems of water supply, as well as in higher education [5].

The administrative aspects of the management system were examined by A. Galchinskiy, V. Gaets, A. Kinakh, V. Seminozhenko [6]. The main emphasis was put on implementation of an “e-government» concept. Meanwhile, the comprehensive analysis of the management system’s evolution of construction industry, in the context with

strategic societies of national economy at a given historical stage, had not been made.

The areas of the housing and public utilities reformation were researched broadly. U. Mantsevich [8] studied the matters of the housing cost reduction, as well as management of the housing resources, problems and prospects of the house building development.

In the writings of A.M. Pleshkanovska and E.D. Savchenko [10] were studied the aspects of construction activities during the various historical eras, the factors of the current building booms emerging, the long-term forecasts for the urban future.

Problems of management system of construction industry reformation, in the context of the strategic tasks of the national economy, efficient mechanisms of management in conditions of the market economy were left with no attention of mentioned studies.

RESULTS AND EXPLICATION

The dynamics and scale of the building scope as well as the innovations necessary for construction industry, first of all, are anticipated in the master development plans of communities, where are defined demands in scope and quality of buildings and constructions, within the context of general concepts of functional and spatial development.

The key functions of the Master Development Plan of the city are provision of population with housing, social and communal facilities, necessary domestic service facilities; establishment of the optimal system of labor application facilities, first of all, in the public production, as well as in the areas of recreational activities [1, 2].

At present and in the near future, there are two main types of the facilities in the housing construction practice: building of large scopes of quite comfortable, but power-efficient housing for provision of the bulk of the population and building the elite housing.

The first type comprises two categories: business-class housing, which parameters are determined by demands of the middle class economically active population and economy

class housing, corresponding to the requirements of the population with income below the middle level.

A separate place in construction is taken by the facilities of executive class: office and corporate buildings, the unique complexes of socio-cultural purpose – theaters, museums, exhibitions, sports arenas, and large transportation structures – motor roads, high-speed electric transport lines, bridges and overpasses, underground structures, etc.

The tasks of the new system building are quite normalized and limited.

Every listed construction category requires its own managerial models, innovative technological approaches, and organizational practices with substantial difference in parameters of profitability, breakeven and resource intensity [3].

Under the resource-constrained conditions, the emphasis now is on reconstruction of degraded urban areas and development of small-area sites, as a prevailing concept of the volumetric and spatial development of cities.

In this connection, the currency of organization of large site coverage of systematic housing construction with scopes over 3 million sq. m, typical of the previous times, now is almost filed as a history. Place was given to the concept of renewal of the small-block developing of environment with small enclosed courts-patios, instead of the principle of micro-zoning with ‘transfluent’ spaces of residential groups. Establishment of associations of the apartment house co-owners (AAHCW) encourages development of face lifting of housetops and terraces for planting the greenery, what requires innovative technologies.

The management structure of construction industry appeared unprepared to solve all of these tasks.

For understanding the tasks of reformation of the management structure of construction industry, it is necessary to identify the main factors of its shaping in the Soviet planned and command economy period, and at the transition stage of establishment of the mar-

ket economy and management system, after gaining independence by Ukraine.

In the 30's of the past century, the main national problem was solving the tasks of industrialization of the country, what conditioned organization of the branch ministries, specializing in training of personnel for construction industry and provision of the construction basis for developing the enterprises of the staple industry, rail transportation, large waterworks, defense-industrial sector and some other major branches of national economy.

Management of construction in this and later stages of the Soviet period had been always performed with rigidly centralized allocation of the budget, and material and technical resources, accountability of the organizations before overhead organization, under regular periodic and running control.

During the first postwar period, the thorny problem emerged of recovering the ruined infrastructure of the country within the shortest deadlines, what found its logical reflection in the structure of management, establishing the mobile construction trust-sites, bridge construction parties, etc.

Upon completion of the main repairing work in the 50-60's, the displacement of citizens from barracks, basements, and congested shared apartments became the urgent political task. To meet this target, the construction industry had to secure the increasing of the housing construction scope and reduction of construction deadlines, by several times. Solution was found in planning the large residential communities of the mass housing construction and its industrialization. This was the very problem the construction industry's management system was designed to solve.

Under these conditions, the central management agency of the ex-USSR construction industry (Gosstroy USSR) [15] had to secure the uniform technical policies: development and approval of the State construction norms, technical data sheets, standards, typical designs, approvals of design and planning specifications and project estimating procedures, exclusion of, so-called, «excesses» from de-

signs and estimates, all possible construction costs and deadlines reduction

Approvals of individual designs and those of the high-rise buildings were performed by the central agency, meanwhile, application of custom designs if the typical ones were available, was excluded. The system imposed, consisting of the State scientific research and development, and design institutes, as well as the higher education and specialized secondary schools, made sure the development of typical designs of buildings and technical, engineering and production work force development for design and construction organizations in Moscow with branches in Kyiv and administrative centers of some other republics.

The mechanism of command and administrative management of the construction industry shaped in this way was able to perform within the shortest deadlines the mass system construction of large residential districts in all communities of the country.

The Industry-Specific Construction Norms Instruction ISCN 38-82 on composition, development procedures, agreement and approval of layouts and designs of the district planning, planning and development of cities, villages and rural communities, set up the necessary composition of the design and planning specifications: the master development plans of urban and rural communities, designs of detailed planning, layouts of the districts planning. The system of the two-stage design permitted to solve the problem of cost reduction and reduction of design estimates development deadlines.

The technical standards orders CN 531-80 on composition, development procedures and approval of the district heating system layouts for communities with total heat demand at up to 116 MW (100 Gcal/h), directed the construction industry and community facilities of the cities towards construction of large district heat supply sources, having eliminated application of small local boiler plants.

However, yet in the 80's the shortcomings of such a management system became apparent. Moreover, although since 1987 the organizations in the structure of construction

industry were converted into the self-financing ones, this did not provide the opportunities of freedom to take decisions.

Provisions on organization procedures, tasks and functions of the technical supervision teams and the contracted customer/developer of construction site, which defined the functions of the Department of capital construction within the executive boards of municipal councils as integrated construction customer, in fact, had blocked development of the competitive environment in the construction industry.

For solving this particular problem of realization of the uniform technical policy, the central office established divisions of technical rating and standardization, typical designing, organizing design and survey works, estimate rates and pricing in construction industry, structures, and new materials.

Thus, for construction management per branch attribute, within the Gosstroy system were established: the Ministry of special construction and assembly works (Minspetsstroy-montazh) the Ministry of construction, road and community machine engineering (Minstroydormash), the Ministry of railway construction (Mintrans), etc [7].

Minspetsstroy-montazh managed construction and assembly works at the industrial and civil construction sites. Subordinate to the ministry were 224 trusts, 274 industrial enterprises and 37 education establishments for technical engineering and production manpower development for construction organizations, as well as scientific research and design organizations.

Minstroydormash managed the industrial enterprises for design and manufacturing the construction machinery, including concrete-mixing equipment, hoisting machines etc.

Mintrans secured setting the construction basis and work force development for railway construction.

For solving the problems of construction in Siberia, in the Far North and other regions of the country were established the territorial and regional ministries.

In this way, were secured the centralized management of the construction industry per

branch and territorial principles, covering as the stages of district planning and planning the development of urban and rural communities, industrial hubs, as well as design, performing construction, assembly and special works, manufacturing the construction machinery and special types of construction work.

At the same time the strictly centralized allocation of technical and financial resources, running control and regular reporting was maintained for all subdivisions, educational, and design and construction organizations before the overhead organizations [5].

Undoubtedly, the command and administrative principle of centralized management of the construction industry secured solving the large national economic tasks during the corresponding historical period.

Nevertheless, the over-centralized management, leaving no space for freedom to take decisions, impartially promoted development of typical uniform environment, insufficiently took into consideration the historical regional and local peculiarities of urban and rural communities.

It should be noted here, the very important role of implementation of certain forms of construction and assembly organizations for solving the corresponding tasks. The main form of construction and assembly organizations (CAO) were 'trusts' and independent, or composing the 'trust' construction and assembly departments (CADs, CDs, etc.), as well as self-financing stations - the primary independent production units, immediately performing construction operations [6]. All the State plans and allocation of material resources had been prepared for 'trusts'. At the 'trusts' level all the technical and economic planning issues have been decided, as well as contractual relations, process control, preparation for operations.

At the same time, the tendencies remained to pass a range of managerial functions at the higher levels (regional central authority, consortium, concern), the 'trusts' did not include subsidiary production plants, transport facilities, utilities living teams, moreover, general

procurement issues also were completely dependent from the overhead management body.

Depending on the type of contractual relations one may distinguish the General Contracting 'Trusts' and the Subcontracting 'Trusts', moreover, by the type of the jobs performed - there were general construction 'trusts' and the specialized ones.

General construction 'trusts', being the general contractors, were performing the main types of general construction jobs (installation, stonework, concrete, etc.). The specialized 'trusts' were performing, as a rule, one type of job or a set of several similar jobs (foundation engineering, dress work, electric installation, plumbing, etc.). Along with a technological specialization was commonly used the branch specialization by the types of construction, i.e., the 'trusts' of residential, industrial, railway and some other types of construction. Specialized organizations, as a rule, are subcontractors, but sometimes act as general contractors (i.e., 'trusts' of foundation engineering for HCP) or perform the jobs according to the separate contract with a customer.

By the area of activities there may be distinguished the 'trusts'-sites, 'trusts' of urban type, territorial 'trusts'. Let us say, the aforementioned 'trusts'-sites were established for performing the large-scope construction and installation jobs at a site often in industrial construction, at the same time the management of production operations performed through construction stations. The 'trusts' of urban type perform their jobs within the limits of one city, like, say, the 'trust' "Kyivgorstroy" which built, virtually, the whole of postwar Kyiv. Territorial 'trusts' acted within the limits of certain districts. By the scope of construction and installation jobs with consideration of their complexity and labor intensiveness, were distinguished the four groups of construction and installation organizations by emoluments of managerial, and engineering and technical personnel.

During the period of mass system construction, the widespread were also the hous-

ing construction plants (HCP) – an organizational form of association of a construction organization with an industrial enterprise, performing construction operations by industrial practices. A revolutionary innovative approach of this period appeared to be the detailed specification of the construction design series and typification of the series' details. At the same time, HCP were specializing in construction by industrial practices with details of own production (large-panel, apartments' modules, etc.), residential and administrative and public buildings, structures of the certain series, multi-series details production, and, sometimes, in performing the certain types of jobs (installation, fit-out works, etc.) by regular teams.

It is to be noted, that the management structure of construction industry and the forms of construction and installation organizations permitted in due time, to solve a thorny national economic and social problem – provision of the population with economical, industrially erected housing. At the same time, management of the construction industry, as mentioned above, had been performed using the rigid accountability of the subordinate organizations before the overhead ones, agreement of appointment and dismissal of managers, the centralized allocation of financial, and material and technical resources.

Now the automated control of processes productions system at the level of build enterprises, using machines on the industrial building is created [13, 14]. Power and resource-efficient innovative technologies are the main customer of the product of construction industry [1, 9, 12]. Problems of municipal services from the ecological point conditions and possibility of effective power saving up technologies use of view [11], [20].

In the management structure of construction industry the feedback with population, as was totally absent.

In independent Ukraine the State committee of urban planning and architecture was established, transformed later into Gosstroy of Ukraine, since 2004 – into the Ministry of regional development, construction, architec-

ture, and housing and communal services in Ukraine (Fig. 1) [16, 17].

The sphere of regional development regulates the issues of decentralization and those arising from administrative-territorial system.

The issues in the sphere of construction and architecture comprise problems of pricing and expert examination of the regulatory

framework, development of the urban planning paperwork, technical solutions for designs of the high-rise buildings.

The sector of housing and communal services performs preparation of reforms in this sphere.

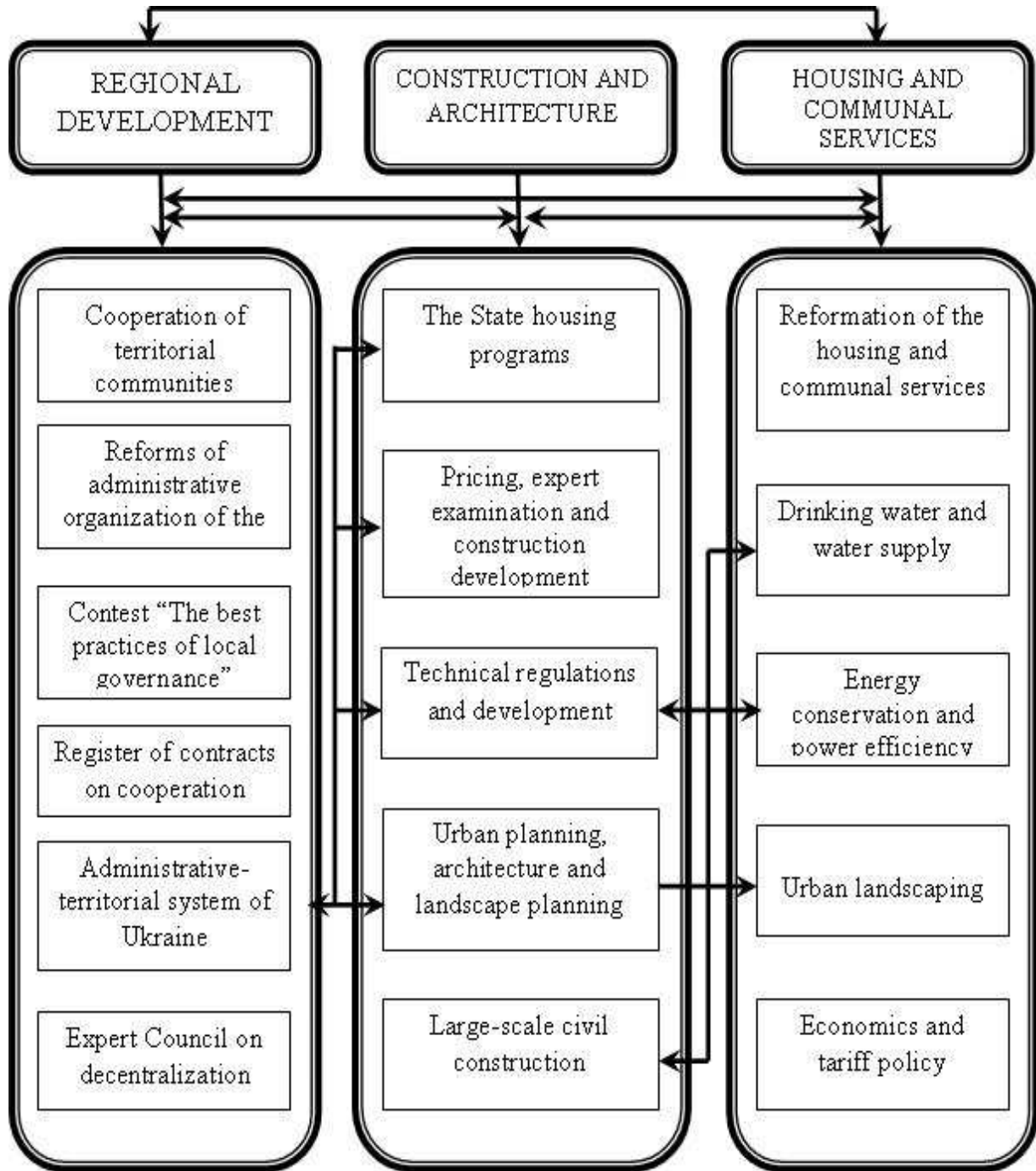


Fig. 1. The scope of activities of the Ministry of regional development, construction, architecture and housing and communal services in Ukraine

In this way, the sphere of the Ministry activities, in general, covers the urgent national economy present-day problems [18].

The integrated construction customer service has lost its significance and ceased operation. Accountability of the construction organizations and centralized allocation of financial and technical resources is not required. Does not provide accountability to higher construction companies facing organizations.

The formation of vertical and horizontal linkages is not regulated. Development of construction norms and standards, as well as the urban planning paperwork of the State level is financed centrally. Implementation of the State programs for comprehensive reconstruction of obsolete housing resources, produced by industrial process and construction of the new affordable housing failed. Home loans not hedged against inflation, ticky tacky frauds caused the population's distrust to developers and banks.

The management construction industry mechanisms are limited to consideration of the issues at the ministerial boards and councils' meetings, on the initiative of local architectural bodies or developers (except for drafts of the regulatory documents). The hearing minutes serve as guidelines and are not binding. The system of approval is substantially simplified, approval of the urban planning and design as well as custom design paperwork is cancelled, typical designs are not allowed.

Reporting of local bodies is performed on development issues of urban planning paperwork. The results of consideration are also not binding. The practice of compulsory out-of-town consideration meetings for realization of the master development plans of cities in different districts of Ukraine is forbidden, as well as preparation of reports on development of the urban planning, including analysis of issues on design and construction activities.

The technical policy of the Ministry is implemented through the State norms and national standards, regulating the composition of urban planning and design paperwork, re-

quirements to planning and development of communities, buildings and structures, pricing, requirements on working safety conditions, consumption rates of fuel and energy.

Still, an acute problem is lack of economic and legal mechanism of realization of the master development plans which tasks are not clear to the population. This had led to the excessive politicization of the issues of their development and using by dishonest political opponents as a slogan for their election campaigns, contraposition of the urban building development tasks to the interests of wide circles of population, what had led to increase of construction risks.

There were established the construction organizations - general contractors with their marketing and realty sales structures, but which are not interested economically in development and implementation of innovative technologies. In connection with opportunities of realty sales, yet at the stage of the underground cycle of construction job, are widespread the ticky tacky frauds, what strengthens the population's and construction companies' stand-off.

The postwar period countries with market economy, have also faced the pungent social problems of housing unavailability to all the population strata, prompt solving of the housing problem in critical situations, rehabilitation of degraded urban areas and corresponding tasks in management of construction industry.

For example, the Department of Housing and Urban Development, USA [19], secures financing and administration of realization of a wide variety of nationwide federal programs, related to meeting the demands in housing. At the local level, the zoning plans and detailed plans are being developed, which ensure their tridimensional realization.

The private sector is being encouraged, which is able to secure construction of affordable housing, encouraged are establishment of joint ventures (societies).

The special federal programs were allocated especially to meet the demands in housing of Indians and indigenous residents of Alaska, on recovery of the housing in the

natural disaster stricken districts, etc. There was created a secure legal and financial mechanism of realization the construction programs at the federal and local levels.

In Federal Republic of Germany, the renovation system for the obsolete housing of industrial series was developed and implemented with mobilization of financial resources from the International Bank for Reconstruction and Development.

There are some other good practices of implementation of construction programs, included into urban master development plans.

CONCLUSIONS AND RECOMMENDATIONS

The management construction system in Ukraine secured freedom to take decisions, but appeared unable to solve the affordability problems of housing for population, implementation of innovative resource-saving technologies, building up reserves of municipal housing resources for prompt resettlement of refugees during emergency situations, etc. Construction organizations appeared to be out of the influence area of central and local managing bodies. There is no comprehensive analysis of construction industry development.

In the absence of financial and economic incentives, construction companies are not interested in implementation of innovations, what conditions low innovative activity.

In the context of stagnation, the systematic problems in construction industry management appeared, namely: excessive construction risks, absence of the system of their hedging and unavailability of credit resources for construction organizations, non-transparency of their financial reporting, large scope of incomplete construction and lack of cash reserves for its completion, rise in the cost of construction (estimated cost), absence of State regulation of the sales price of 1 sq. m with respect to the estimated cost ratio, problems with connection of the houses constructed to utilities supply lines.

Lacking of economic and legal mechanism of the master development plans realization conditioned chaotic nature of development of the cities. The tasks of urban planning paperwork remain obscure for population, regardless of approval of national regulatory documents on conducting the public hearings of the urban planning paperwork.

The facts mentioned above brought to excessive politicization of the master Development plans of cities and their using by dishonest political opponents, as a slogan for their election campaigns. Unjustified construction risks emerged in the construction industry, regardless of the efforts of the State regulation of the processes of “public hearings”.

In connection with opportunities of the realty sales, yet at the stage of the underground cycle of construction job, are widespread the ticky tacky frauds, what strengthens the population’s and construction companies’ stand-off.

The problem mentioned above condition the necessity of reformation for construction industry management system using efficient mechanisms for realization of the housing programs, like, for example, in Federal Republic of Germany, Singapore, etc.

To achieve decentralization and prevent corruption it seems necessary the innovative strategy to be developed for reforming the management of construction industry. It is necessary to foresee in its composition a comprehensive mechanism of realization, including the following:

- the system of hedging the construction and credit risks, benefits and subventions, the ratio of the sales price and estimated cost 1 sq. m,
- regulatory acts and standards, providing for innovative resource-saving policy,
- national programs of provision for housing of various social strata of the population;
- financial mechanism of promoting the innovative technologies in construction industry,
- mechanism of realization of national programs, providing for hedging the home loans, leasing of municipal housing re-

sources, redemption of the housing property right,

- electronic management, securing the anti-corruption policy, popularization of the urban planning paperwork, informing on financial and social benefits for population from realization of the urban planning designs and certain construction sites.

It is preferable to develop the organizations of General Contractors, supervisors of the development projects realization.

In this way, reforming of construction industry management system on the basis of aforementioned main directions, would secure the high social-economic effect from the activities of construction industry.

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ЭВОЛЮЦИЯ РЕФОРМИРОВАНИЯ
СИСТЕМЫ УПРАВЛЕНИЯ
СТРОИТЕЛЬНЫМ КОМПЛЕКСОМ
В УКРАИНЕ

Аннотация. Рассмотрены проблемы деятельности строительного комплекса и основные недостатки системы управления. Выявлены факторы, формировавшие систему управления строительным комплексом в Украине, а также преимущества и недостатки административного механизма управления. Приведена современная структура системы управления

строительной отраслью в Украине. Раскрыты технологии управления строительным комплексом в странах с рыночной экономикой. Показаны примеры формирования жилищных программ в США. Сделаны выводы об основных направлениях управления строительным комплексом и механизмах оптимизации системы управления.

Ключевые слова: строительный комплекс, система управления, государственное регулирование.