SMART ENGINEERS®

CONSTRUCTION MANAGEMENT AND SUPERVISION

Company presentation

smrte.ru
smartengineers_group

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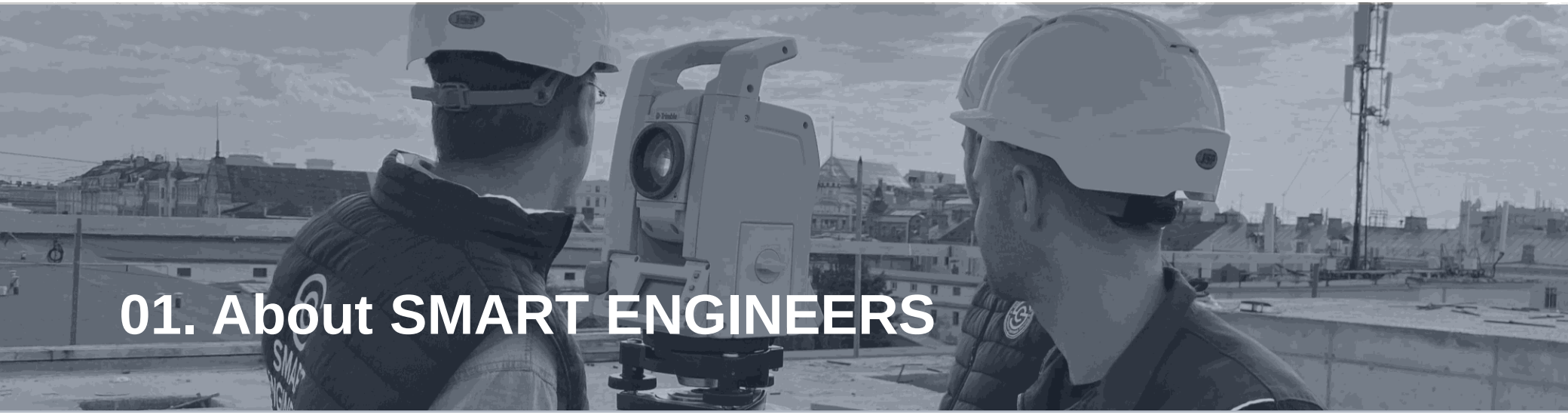

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«SMART ENGINEERS»: construction management and supervision

SMART ENGINEERS (SMART ENGINEERS Ltd.) — is a leading engineering group* in the market of construction management and control services. We act as a technical client; perform construction control and audit at all stages of an investment and construction project.

SMART ENGINEERS®
CONSTRUCTION MANAGEMENT AND SUPERVISION

13 years in the engineering market

600+ successful projects

725 bn Rub total cost of the projects

MAIN SERVICES

- **Construction management**
- **Customer Functions Performing**
- **Construction supervision**
- **Construction audit**
- Technical audit and Financial Audit
- **Technical Due Dilligence**
- Inspections of buildings and structures
- Engineering surveys
- Detailed and executive drawings
- Legal support of construction
- Anti-crisis construction management

MODERN SOLUTIONS

- Certified NDT laboratory
- Instruments fleet
- Modern digital solutions for construction management and supervision, including proprietary innovations for construction in partnership with 1C
- Proprietary methods and standards of services delivery

smrte.ru

About Group of Companies

«SMART ENGINEERS»: permits, licenses and certificates of conformity

SRO Permit to engineering surveys

SRO Permit to design engineering and inspections

SRO Permit to construction supervision

License of the Russian Ministry of Culture to ensure preservation of cultural heritage sites

Rostekhnadzor license to perform industrial safety expert review

Certificate of Quality Management System ISO 9001:2015 (construction)

Certificate of Quality Management System ISO 9001:2015 (design engineering)

Certificate of Occupational Health and Safety Management System ISO 45001:2018

Certificate of Environmental Management System ISO 14001:2015

About Group of Companies

«SMART ENGINEERS»: facts about the company

- Year of foundation: **2012**
- SMART ENGINEERS Group of Companies is in the **TOP 10** biggest Russian companies in the field of technical audit and consulting according to the RAEX Rating Agency (RAEX-Analytica)
- One of the **founders of the National Association of Technical Customers** and Other Engineering and Construction Management Companies (NOTECH Association)
- One of the **founders of the National Association of BIM Modeling Companies** (NOTIM)
- The company owns an educational center
- The company acts as a host of annual industrial forum Construction Management and Supervision
- The company issued a copyright book series about construction management and supervision in Russia Smart Construction Casebook and a guideline describing peculiarities of handling permit and as-built documents Assistant in Construction
- Offices in Moscow and St. Petersburg
- The company has a joint venture with 1C company for development of digital solutions for construction
- Experience of projects implementation in **60+** Russian regions with overall value of more than **725 billion rubles**
- Authorized capital: **2.5 million rubles**

About Group of Companies

«Digital Solutions in Construction»: industry digital service

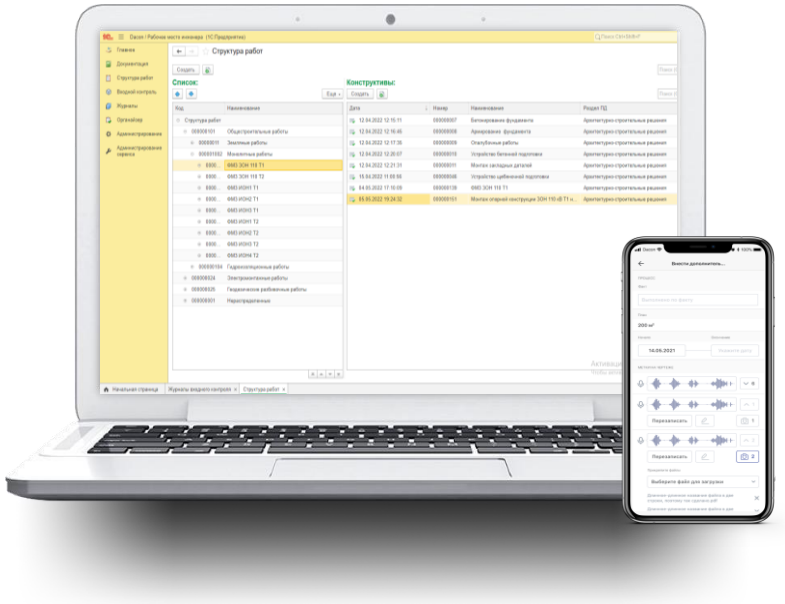
Digital Solutions in Construction LLC is a joint venture of SMART ENGINEERS and 1C Company. The latter is focused on promoting DACON digital service developed by Digital Solutions in Construction LLC (a member of SMART ENGINEERGS group of companies).

DACON
Цифровизация исполнительной документации

1С ФИРМА "1С"

Digital service for as-built documents in construction

DACON is a service for collection, processing, analysis and long-term storage of information regarding results of quality control, automation of the whole process involving development and maintenance of as-built documents in electronic format, automation of construction documents handover and construction supervision for all participants of construction.



DACON complies with requirements of **GOST R 70108-2022** and **it is included into the Unified Register of Russian software of the Ministry for Digital Technology, Communication and Mass Media of the Russian Federation**, register entry No. **15454 dated November 08, 2022.**

dscon.pro

About Group of Companies

«Construction Center of Excellence»: training, research, events

Construction Center of Excellence LLC is an educational project of SMART ENGINEERS. Its goal is to create a community of experts in management and control of investment and construction projects.

COMPETENCE CENTER IN CONSTRUCTION

ANALYZING TRENDS AND BUILDING KNOWLEDGE BASE

We analyze industry trends, explore the best practices in construction management, study expert opinions, evaluate legislative proposals, share our experience, know-hows, real cases, process and management solutions in supervision and management of the investment and construction projects.

IMPROVE COMPETENCE OF SPECIALISTS IN THE INDUSTRY AND SHARE OUR EXPERIENCE

We contribute to improvement of management and expert related experience of principals and specialists of various profiles and levels in the area of investment and construction projects implementation:
– we share practical knowledge, real cases, process and management solutions in the area of construction management and supervision;
– we develop our own internship program;
– we write books on the subject of construction management and supervision.

HOSTING EVENTS

We host meetings with top experts on a regular basis, collect opinions of the professional community, discuss current issues, record webinars and podcasts, and hold industry events.

cccon.ru

We assist in efficient and quick construction

About Group of Companies

Projects footprint

projects in
62
regions

successful
600+
projects

Since 2012, SMART ENGINEERS Group of Companies has been managing and controlling construction in the following industries:

- Road and Infrastructure
- Production
- Logistics
- Medicine and Pharmaceutics
- Energy
- Retail
- Hotels and Tourism
- Offices and Business Centers
- Sports and Entertainment
- Culture and Arts
- Residential Real Estate
- Defense Industry
- IT
- Industrial agriculture
- Financial sector

About Group of Companies | Leaders trust us

About Group of Companies | Customer recommendations

Central Bank of Russia

Abrau-Durso

S7 Invest

Rosatom

Apatit JSC

M.video

Quadra

Rosseti

VEBVENTURES

Bilfinger Tebodin CIS

About Group of Companies | Our partners

НОСТРОЙ
НАЦИОНАЛЬНОЕ ОБЪЕДИНЕНИЕ СТРОИТЕЛЕЙ

НОПРИЗ

НОТЕХ
НАЦИОНАЛЬНОЕ ОБЪЕДИНЕНИЕ ТЕХНИЧЕСКИХ ЗАКАЗЧИКОВ

НОТИМ

ОБЩЕРОССИЙСКАЯ ОБЩЕСТВЕННАЯ ОРГАНИЗАЦИЯ ДЕЛОВАЯ РОССИЯ

АИП АССОЦИАЦИЯ ИНДУСТРИАЛЬНЫХ ПАРКОВ РОССИИ

МИНСТРОЙ РОССИИ

Счетная палата Российской Федерации

Комитет государственного строительного надзора города Москвы

ГЛАВГОСЭКСПЕРТИЗА РОССИИ

НАЦИОНАЛЬНОЕ ОБЪЕДИНЕНИЕ ТЕХНОЛОГИЧЕСКИХ И ЦЕНОВЫХ АУДИТОРОВ

РСПП

ГУД
РОССИЙСКАЯ ГИЛЬДИЯ УПРАВЛЯЮЩИХ И ДЕВЕЛОПЕРОВ

BSP

ACFE
Association of Certified Fraud Examiners

Expert

Bitrix24

АВАНТИ

SK-CONSULTING

1С ФИРМА "1С"

РАНХиГС
РОССИЙСКАЯ АКАДЕМИЯ НАРОДНОГО ХОЗЯЙСТВА И ГОСУДАРСТВЕННОЙ СЛУЖБЫ ПРИ ПРЕЗИДЕНТЕ РОССИЙСКОЙ ФЕДЕРАЦИИ

РОССИЙСКИЙ УНИВЕРСИТЕТ ТРАНСПОРТА (МИИТ)

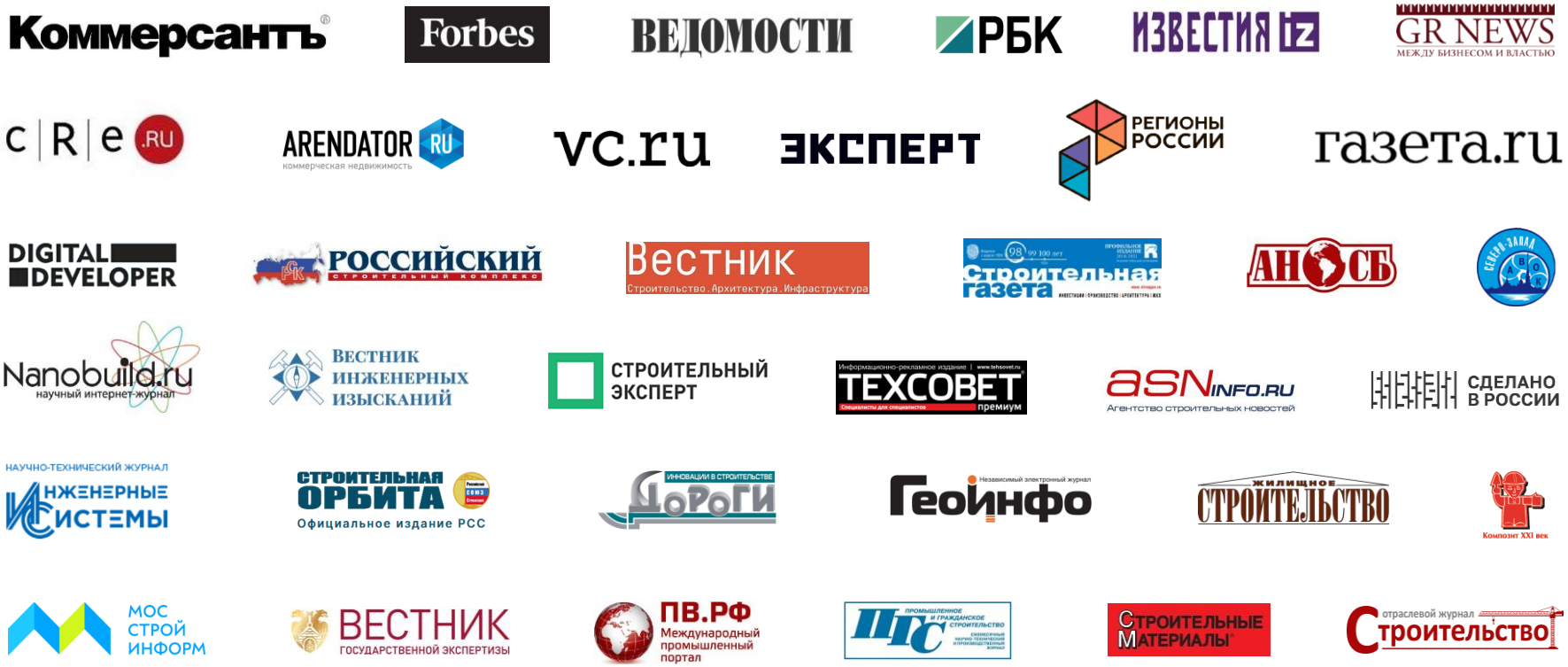
МОИ

МГСУ
НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ МОСКОВСКИЙ ГОСУДАРСТВЕННЫЙ СТРОИТЕЛЬНЫЙ УНИВЕРСИТЕТ

ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ УПРАВЛЕНИЯ
ОСНОВАН в 1919 году

About Group of Companies | Media coverage

Engineering group SMART ENGINEERS adheres to the principles of information transparency and its position is proactive when it goes to the implementation of investment and construction projects, as well as forecasts and investments in this area.



About Group of Companies | Team

The success of SMART ENGINEERS is founded on a close-knit team of professionals, who love and know their job. The work of the entire management and engineering staff is based on the principles of a proactive, unbiased and open approach. Members of our team are responsible for solving the tasks assigned to them, but most importantly, they are able to understand every Client, focus on the Client's needs, propose best and effective solutions for the prompt and successful implementation of all investment and construction projects.

The professional training of SMART ENGINEERS specialists is confirmed by diplomas and certificates from leading Russian educational institutions, regular further training and, of course, by many years of real-life experience, which is a fact-based guarantee of the quality of services provided.

SMART ENGINEERS employees are active members of the National Association of Surveyors and Designers (NOPRIZ), National Association of Builders (NOSTROI), members of field-specific expert boards of the Ministry of Construction of Russia, Chamber of Accounts of the Russian Federation and the National Association of BIM Modeling Companies (NOTIM).

We create trust – the foundation which carries the success of any investment project requiring teamwork

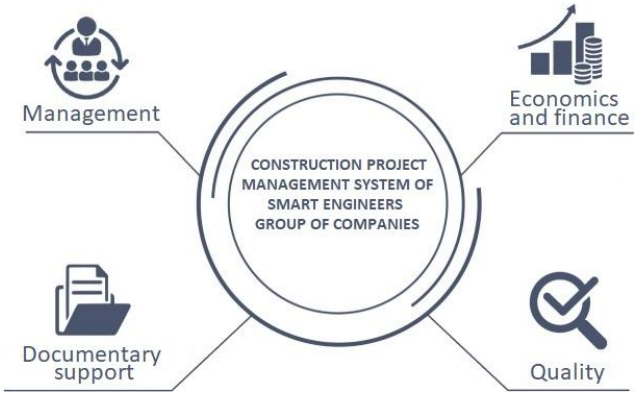
02. Services

Services | We help at all project management life cycle phases

WHAT IS CONSTRUCTION PROJECT MANAGEMENT

Construction management is a set of interconnected processes and tools. They result in the successful implementation of an investment and construction project. It involves applying management and control tools at all stages of the project life cycle consisting of pre-design planning, design, construction and commissioning.

The primary goal of any investment and construction project is its successful implementation within the agreed deadline and cost without sacrificing the necessary construction quality.



CONSTRUCTION PROJECT MANAGEMENT SYSTEM OF SMART ENGINEERS

SMART ENGINEERS Group of Companies has developed a construction project management system to effectively implement investment and construction projects. It provides transparency and manageability of the construction, as well as control of the key project indicators including terms, cost and quality.

SMART ENGINEERS construction project management system consists of organizational, management and technical blocks. They include services in all phases within investment and construction project implementation.

1. Management Block – organization and coordination of the investment and construction project implementation. It provides transparency, reporting, quick communication between the parties, and a unified management system.
2. Documentation Support Block – arrangement and control within preparation of planning and building permits and as-built documents. It allows to timely prepare the necessary documentation for design, construction and commissioning.
3. Quality Block – quality management of the full project life cycle. This block provides quality control and expediting according to the specified parameters, as well as effective coordination of contractors, suppliers of materials and equipment.
4. Economics & Finance Block – control of financial and economic indicators. It provides cost control within different project phases, cash flow planning, cost and resource management.

Services | Construction management at all project management life cycle phases

INITIATION

- Land capability assessment
- Gathering preliminary technical conditions and initial permits
- Risk Assessments and Feasibility Assessments
- Inspections of buildings and structures (in the case of brownfield projects)
- Technical specifications development
- Developing requirements for contractors
- Assessment of contractors and formation of long and short lists
- Arranging engineering surveys
- Compilation of the status of completed works and preliminary construction schedule
- Preparation / evaluation of a preliminary construction budget
- Supervision of the development of the design concept in accordance with the requirements of the local building code and the main construction, architectural, technical, and technological standards
- Evaluation / preparation / elaboration of contracts with potential contractors
- Selecting a construction management system (software selection)

DESIGNING

- Participation in the selection of design firms
- Participation in the selection of building design and construction professionals for each of the Design Disciplines (if needed)
- Create and manage a flawless implementation schedule for the construction project
- Gaining and preparing initial data for the design of construction objects
- Involvement of the best industry experts to work on the project
- Managing design solutions in terms of optimization and compliance with the general ideology of the Client
- Common Data Environment (CDE)

CONSTRUCTION

- Participation in tenders to select the general contractor
- Elaboration and conclusion of contract(s) with contractors, counterparties, materials suppliers, and technological equipment
- Drawing up and optimizing construction schedules and material deliveries
- Construction supervision (quality management at all stages in order to reduce the risk of building defects
- Checking the availability of as-built documentation (accelerating the receipt of the Conclusion on compliance with technical regulations)
- Coordination and management of the working group
- Maintaining an up-to-date archive and information portal of the project
- Construction risk management

OPERATION AND USE

- Technical audit of structural elements, engineering networks, and land plot (both built-up and free area)
- Technical audit of engineering systems
- Analysis of the availability and completeness of technical and design documentation
- Create a Punch List for construction, Calculate total labor costs and material costs required for repair work
- Developing the operational requirements, Combined Building Control & Technical Audits

Services | Construction management: main risks at different construction stages

INITIATION

- Insufficient analysis at this stage
- Numerous issues related to interaction with authorities (e.g., changing land plot assignment, etc.)
- Lack of clear methods and road maps for interaction with utility providers
- Client's willing to cut down expenses at this stage and use own efforts only (e.g., when drawing up a design technical assignment)
- Poor qualification of contractors
- Lacking proper planning
- Incorrect initial budget establishment for the project

DESIGNING

- Poor quality of the design and survey work
- Lack of full-fledged examination of design and estimate documentation upon acceptance from the designer and, as a consequence, low quality of design documentation both in terms of public decisions and in terms of engineering
- Low quality of estimate documentation in terms of compliance with the design and unit prices
- Lack of a single database of up-to-date design and estimate documents and activity progress charts
- Drawn out decisions related to changes in design and estimate documents
- Poor qualifications of engineers

CONSTRUCTION

- Lacking or poor preparation of activity progress charts
- Lack of control over the compliance with activity progress charts
- Lack of as-built documentation or keeping it with gaps and gross violations
- Lack of materials incoming control
- Failure to verify whether KS-2 acts on works acceptance being executed properly
- Making KS-2 acts on works acceptance with gross violations (failure to comply with the design and estimate documentation, incorrect quantities)
- Failure to record the completed works and keeping a cumulative statement
- Failure to perform works in compliance with design and regulatory documentation
- Poor qualification of contractors

Having a construction management team in the beginning of a project allows taking into account and evaluating conditions that might have the most significant impact on the course of its implementation. It also allows you to create a further strategy for the prevention and management of risks

Services | Construction management: deliverables

INITIATION

- Reducing risks and expenses at further stages
- Clarifying the real budget and project timeline

DESIGNING

- Improving the quality of the developed design documentation
- Reducing expenses by eliminating ineffective technical solutions
- Monitoring design timelines affecting the course of construction and installation works
- Creating regulations for more effective interaction between construction participants
- Reducing risks when undergoing the examination of design documentation

CONSTRUCTION

- Improving the quality of the developed design documentation
- Updating the execution period taking into account possible construction risks
- Reducing project execution period
- No violations in quality and completeness of the as-built documentation
- No financial losses associated with negligence of the general contractor
- Avoiding or minimizing financial losses associated with extension of the execution period
- Avoiding or minimizing risks associated with comments from state supervisory authorities
- Reducing risks associated with obtaining a Statement of Conformity
- Improving the quality of work thanks to quality control of materials used and production technology
- Increasing service life of the facility

Construction management is a risk mitigation tool that provides operational monitoring of a construction site and makes the construction process manageable, understandable and convenient for all participants.

A professional Technical Customer is a key to the successful implementation of a project

Services | Customer functions performing (Technical Customer)

CONSTRUCTION TECHNICAL CUSTOMER (CUSTOMER FUNCTIONS PERFORMING)

A technical customer is a participant in an investment and construction project. It organizes, plans and manages the construction. All its functions are aimed at the timely and proper fulfillment of obligations by all participants to successfully implement the project.

The technical customer accompanies the investment and construction project throughout the entire life cycle and ensures its continuous implementation.

The main goals of the technical customer are the successful project implementation, construction risk mitigation, meeting the deadlines, cost and quality, achieving the planned technical-and-economic and technical-and-operational indicators.

TECHNICAL CUSTOMER SERVICE OF SMART ENGINEERS

SMART ENGINEERS performs the entire list of technical customer functions within construction of different facilities, including industrial, commercial, residential, etc. The company also performs a full range of turnkey planning, organization and management of construction starting from the initial stages of the project.

Implementation of a construction project, especially a large one, requires coordination and management of many interconnected participants, including the Investor (Client), designers, contractors, suppliers of materials and equipment, regulatory authorities and others. Therefore, it is critical that the responsibilities of the project team are properly structured and adjusted from the very beginning.

Services | Customer functions performing at different stages of construction

PRE-DESIGN WORKS

- Pre-design analysis
- Pre-design works
- Development of design technical assignment
- Preparing package of initial permits

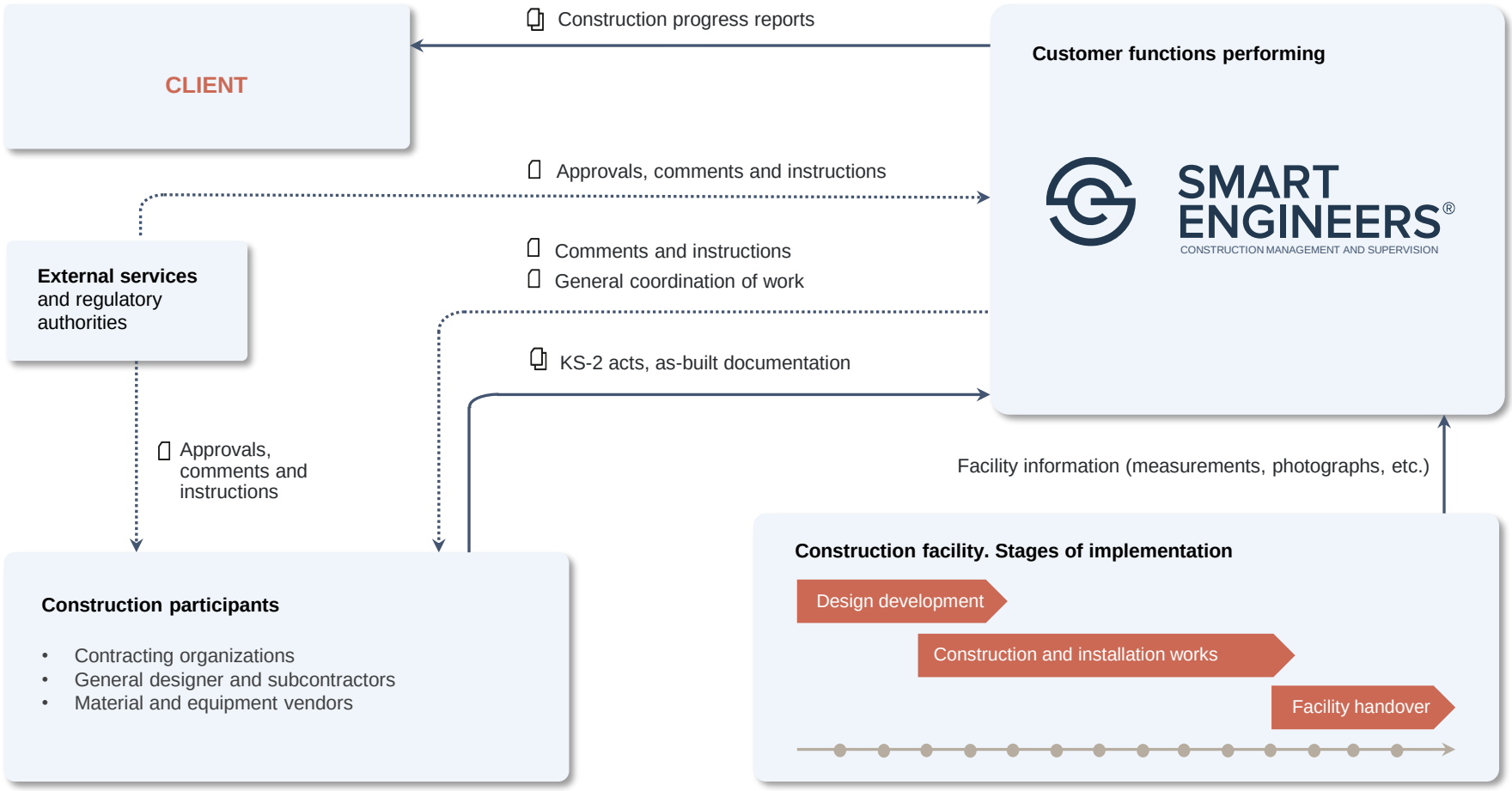
DESIGNING

- Preparatory stage
- Control over the design documentation development
- Assistance in approval of design documentation
- Assistance in design documentation expert appraisal
- Audit (optimization) of design documentation (in case of involving a technical customer after design)

CONSTRUCTION

- Preparatory stage:
  - › obtaining a construction permit;
  - › development of bidding documents;
  - › selecting a general contractor; preparation and execution of the general contractor agreement;
  - › execution of contracts for temporary utilities supply;
  - › handover of the construction site to the general contractor;
  - › handover of the surveying control network;
  - › controlling mobilization of the general contractor and construction site arrangement in accordance with the master plan;
  - › verification and approval of the method statements;
  - › obtaining approvals and permits for the works execution from operating organizations;
  - › notifying the regulatory authorities about the construction commencement;
  - › handover of the IFC detailed design documentation to the general contractor.
- The main period:
  - › development and control of work schedules, and schedules of the materials and equipment delivery;
  - › development of regulations for interaction and works acceptance;
  - › control of documentation changes (if any);
  - › construction supervision;
  - › participation in inspections together with representatives of the State Construction Supervision and Inspection Service;
  - › keeping the reports regarding the facility (construction progress, cumulative statements, etc.);
  - › organization of the final acceptance committee for the facility;
  - › organization and support in obtaining the Statement of Conformity of the completed facility and permission for commissioning;
  - › handover of the completed facility to the developer.

Services | Customer functions performing: Interaction chart



Services | Construction supervision

WHAT IS CONSTRUCTION SUPERVISION?

Construction supervision is a set of services for control measures carried out to check the performed construction works for compliance with the engineering solutions in the project and detailed design documentation, the results of engineering surveys, as well as construction technical and guiding regulations (SP, GOSTs, specifications, etc.) and designed to ensure the safety, reliability and quality of the operating conditions of buildings and structures.

The key task of construction supervision is to prevent defects in building structures, deviations from the detailed design and construction regulations, and timely risks management. As a result, construction supervision makes it possible to prevent quality degradation of construction works and the materials used, implement the project in accordance with the existing design solutions and high quality of works performed at the construction site.

CONSTRUCTION SUPERVISION BY SMART ENGINEERS

SMART ENGINEERS carries out the whole range of measures for construction supervision, reconstruction and repair of capital construction facilities, including technically complex and unique ones. The staff, competencies, as well as the technical equipment of SMART ENGINEERS allow us to perform all types of work.

1. Creation of a single data platform
2. Full incoming control
3. Operational control
4. Geodetic control
5. Instrumental (laboratory) control
6. Acceptance control
7. Control over as-built documents

BUILDING A QUALITY MANAGEMENT SYSTEM FOR CONSTRUCTION PROCESSES

The maximum optimization of work to ensure the construction quality is possible only after determining all project bottlenecks, which can consist both in insufficiently developed detailed design and project documentation, and poor contractors in certain management positions of project – designer, general contractor, subcontractors.

Based on the complete project picture and the tasks to be solved, a complete analysis matrix is built within the project to prevent all current and predicted risks.

Services | Construction audit

WHAT IS CONSTRUCTION AUDIT?

A construction audit is an objective independent expert assessment of an investment and construction project, which allows identifying the existing project inconsistencies, determining their causes, possible risks they may lead to, and developing recommendations for their elimination.

The main goal of a construction audit is to compare the terms, quality, quantities and cost of works stated in the design and estimate, technical and regulatory and as-built documentation with the completed ones. In other words, comparing them with the actual project state.

CONSTRUCTION AUDIT BY SMART ENGINEERS

A construction audit can be carried out at any construction stage (initiation, design, construction, and launch) and to the extent required by the Client**. SMART ENGINEERS can evaluate both –specific scope of works and progress of a project as a whole.** Actual state assessment of a project is carried out according to:

- *terms of the works performed* – for compliance with process control and management documentation and project implementation schedule;
- *quality and quantities of works performed, used construction materials, supplied equipment* – for compliance with the detailed design, project and as-built documentation, acceptance certificates of works performed (KS-2);
- *estimates and calculations* – for compliance with the solutions specified in the project documentation and detailed design;
- *intended expenditure of the Client's funds* – for works and purchase of construction materials;
- *contractual documentation* – for compliance with the technical assignment and contractual obligations between project participants.

Assessment of the current facility state consists of a number of expert measures, the main of which is the ratio of obligations assumed by each construction participant with the implementation at all key stages.

Based on the results of construction audit, a Client receives a technical report (expert opinion) containing the results of assessment of an investment and construction project:

1. Description of identified project inconsistencies, including documents drawn up during investigation – certificates, punch lists, laboratory reports, records;
2. Cause and effect justification of inconsistencies (if any);
3. Description of possible risks and consequences;
4. Cost estimation of the identified punches and estimate of expenditures for their further elimination;
5. Explanatory notes and recommendations (roadmap) a Client could use to eliminate violations, make claims to a contractor or other persons.

Services | Forensic structural engineering (FSE)

WHAT IS FSE?

Forensic structural engineering (FSE) in Russia shall mean an expert review performed to confirm compliance of construction facilities with compulsory regulatory legal acts and technical regulations of the Russian Federation, which ensures proper quality and safety of urban development. Currently, FSE shall mean full complex of tasks, when accurate data regarding a particular case under review are required. Experts from forensic state authorities are involved into investigation.

Forensic structural engineering review might be necessary for the following:

- quality control of the works performed;
- revealing reasons and nature of failures, defining damage value;
- revealing volume and cost of actually performed works;
- inspection of design and estimate documents and other documents available;
- revealing deviations from design and estimate documents (SNiP requirements, contractual conditions);
- defining cost of services needed to improve poorly performed works;
- checking feasibility of design and estimate documents;
- estimating wear degree of utilities, buildings and structures.

FSE tasks need to be solved in compliance with conventional rules of safety, legislation in effect and requirements imposed by superior bodies to the expert organizations

FSE implementation has a mandatory condition – compliance with the investigation technology, its violation involves results degradation and harms the property or surrounding persons. To ensure successful FSE, the persons performing an investigation shall obtain full package of documents. An investigation shall be performed in compliance with the requirements stated, while experts must have accreditation from a relevant regional executive authority.

Services | Forensic structural engineering (FSE)

Independent FSE review consists of three stages:

1. Review appointment.
2. Performance of a self-dependent procedural investigation by a person (persons) based on their special knowledge followed by issuance of a report (or a note confirming that it is impossible to issue a report) covering issues announced by an entity in charge of a case.
3. Familiarization of the parties with the results of the research.

PROCEDURE OF AN INDEPENDENT FSE EXPERT REVIEW BY SMART ENGINEERS:

1. Preparation: making a contract, discussing possible peculiarities, analysis of the data provided, development of an action plan.
2. Defining investigation goal and selecting a proper method.
3. Review of the associated regulatory and legal documents, revealing relevant standards and norms.
4. Sampling (samples of soil, construction materials, etc.) for laboratory tests.
5. Measurements followed by recording.
6. Calculations.
7. Preparation of a conclusion and recommendations. Final conclusion shall be provided to the client. It includes detailed information about the investigations performed by experts, drawings and calculations, as well as conclusions, suggestions and recommendations for settlement of revealed problems or arguments.

Services | Inspections of buildings and structures

Technical survey of buildings and structures

is a set of measures to determine and evaluate actual values of the controlled parameters of foundation soils, structures and utilities characterizing performance of a surveyed facility.

The main tasks of the technical survey

are to detect defects and damages occurred during facility operation, to identify their causes, and to perform overall serviceability assessment. The survey results enable to decide on possibility of further operation/reconstruction of a facility or the need to restore, reinforce, and repair.

TECHNICAL SURVEY STAGES

1. Analysis of Client's initial data:
   - collection and study of available design, estimate, as-built and operating documentation;
   - analysis of the previous survey results (if any);
   - coordination with the Client of survey technical assignment;
   - preparation of a procedure for technical survey of a building.

2. Visual survey:
   - general visual inspection of a facility to identify defects;
   - preparation of punch lists of a facility;
   - determination of design features of a surveyed building;
   - measuring for schemes and drawings development;
   - determination of the required volume of checking calculations;
   - preparation of conclusions and recommendations.

3. Instrumental survey:
   - selection and laboratory analysis of building materials samples;
   - instrumental tests of actual physical properties of materials by destructive and non-destructive methods;
   - dimensioning hidden foundation structures (digging test pits);
   - sampling soils from under foundation base, determination of physical and mechanical soil characteristics;
   - carrying out checking calculations of structures bearing capacity;
   - preparation of a punch list with information about quantities and recommendations for eliminating defects;
   - preparation of a report containing conclusions and recommendations for the further safe facility operation.

Services | Inspections of buildings and structures

RESULTS OF BUILDINGS TECHNICAL SURVEY

Based on the results of the technical survey, a Client receives a technical report (expert opinion) containing the survey results sufficient to determine functional performance of structures, the degree of facility operation capacity and the feasibility of its repair or reconstruction.

The expert opinion based on the technical survey results contains:

1. Assessment of the technical condition (technical condition category)

2. Documents justifying the assigned category of the technical condition:
- test reports of materials and structures;
- a set of structural drawings with details and measurements;
- lists of defects and repairs;
- design models.

This list can be supplemented depending on structures condition, causes and objectives of a technical survey.

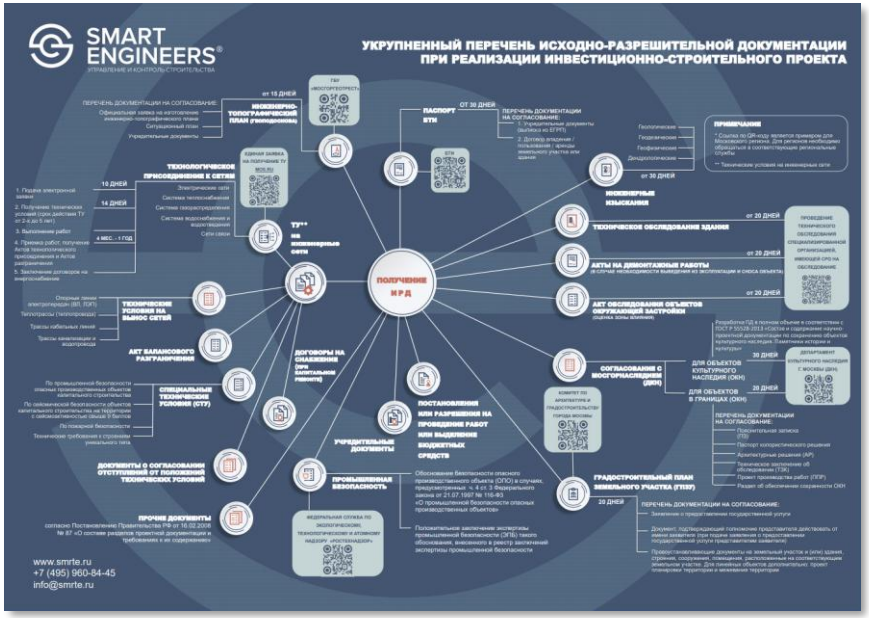
3. Justification of the most probable causes of defects and damages in structures (if any):
- description of the identified structural defects and damages;
- causes of defects and damages;
- possible consequences;
- conclusions about possibility of further operation.

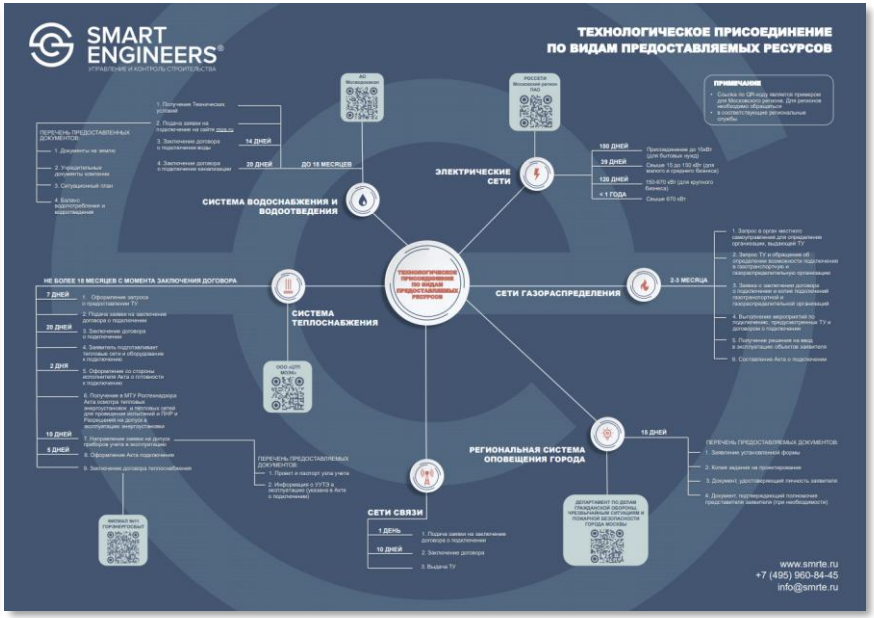
4. Assignment for development of measures to repair or reinforce structures (if necessary):
- requirements for project documentation for repair or reinforcement of structures (if facility condition is serviceable with restrictions or emergency);
- recommendations for further monitoring of technical condition of buildings and structures.

Services | Obtaining the initial permits

SMART ENGINEERS Group of Companies has put together the process of obtaining initial permits into a single diagram.

We help clients through all the way of obtaining the necessary approvals. We know the regional specifics of this process.





Services | Technical Due Diligence

Technical Due Diligence is a special type of technical and financial analysis usually performed before making the following investment decisions:

- investment and construction projects (ICP) in different implementation stages;
- investment into property facilities with completed construction and commissioning.

Goal of the Technical Due Diligence is revealing significant technical and financial risks, which might impact or have already impacted project implementation, and obtaining recommendations for their elimination or minimizing.

Technical Due Diligence background:

- estimating advantages and feasibility of going into an investment and construction project considering actual circumstances;
- settling disputes between ICP parties;
- replacing contractors in on-going ICP;
- deviation between plan and actual project data (budget, due to concept changes);
- including a property unit into the authorized capital as an asset;
- dividing a property unit into shares;
- upcoming buying / selling of property and its further pledging, discretionary management or leasing;
- accompanying support in verification of cadastral value of properties, etc.

Technical Due Diligence can be initiated by the following:

- investors and clients;
- new investors, partners or clients, including foreign ones;
- general contractors;
- other existing or potential participants of investment and construction projects;
- parties of upcoming deals or actions related to the constructed properties.

Technical Due Diligence procedure of SMART ENGINEERS:

1. Analysis of the provided data, preparing an action plan.
2. Investigation.
3. Preparation of a conclusion and recommendations.

Services | Legal support in construction

Within implementation of an investment and construction project, **it is important to realize an unbiased pattern of legal cooperation between all parties involved**. The goal is to understand at any period of time how the system of mutual implementation of contractual obligations is arranged and how it works, if there are any risks that might impact cost, period and quality of a construction project.

Legal support in construction includes the following:

- Legal analysis of a construction project (Due Diligence)
- Legal analysis of cooperation between:
  – client;
  – technical customer;
  – external services and regulatory authorities;
  – general designer and subcontractors;
  – vendors of materials and equipment.
- Cooperation between regulatory bodies and entities
- Legal assistance within a project during its all lifecycle stages
- Participation in regular meetings with representative of client, designer and general contractor
- Claim settlement
- Assistance in settlement of disputes between construction participants

03. Digital solutions for construction management and supervision

Digital solutions | Integration into a construction project

Construction assistance and control includes integration of existing solutions in all stages of an investment and construction project – from pre-design activities up to commissioning.

Proprietary Digital Service

DACON
ЦИФРОВОЙ АССИСТЕНТ В СТРОИТЕЛЬСТВЕ

Partners

1С ФИРМА "1С" | Project Point | МОБИЛЬНЫЕ РЕШЕНИЯ ДЛЯ СТРОИТЕЛЬСТВА | miro | BIM 360 | SketchUp | AUTODESK | ATLASSIAN Trello | Битрикс24 | PlanRadar | Microsoft | Power BI | Microsoft Project | wrike | ORACLE PRIMAVERA | Leica Geosystems

COORDINATES	QUALITY CONTROL	TECHNOLOGIES	AUTOMATION
Preparation of a work schedule, plan and actual analysis	Development of check lists for works acceptance	Using panoramic photo technology for construction quality control	Automation of as-built documents development with help of DACON digital assistant
Planning mitigation measures and risks response	Systemization of inspections		
Implementation of quick tools for project coordination	Analysis of contractors' works, defects prevention		

Implementation of quick tools for common cooperation and control is ensured by cloud-hosted portals of IT support and provides the following opportunities:

- exchange information and update data online
- quickly find necessary project data in a cloud drive

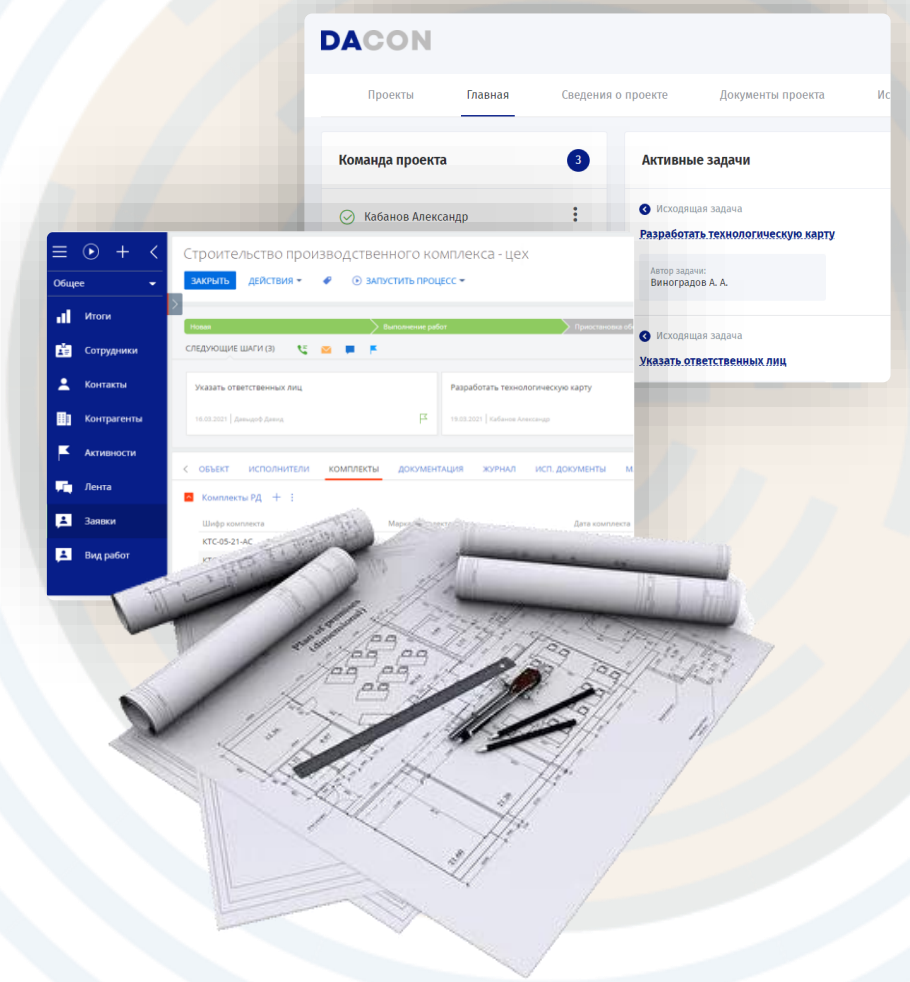
As a result, Client saves time, and all participants are involved into the project.

Digital solutions | Digital assistant DACON

DACON ЦИФРОВОЙ АССИСТЕНТ В СТРОИТЕЛЬСТВЕ

Providing construction projects with digital as-built documents

- Control over development and execution of as-built documents online
- Simultaneous coordination of the completed as-built documents with all participants of the construction process
- Structured storage and processing of up-to-date versions of design documents
- Review of plan and actual indicators of the quantities covered by as-built documents
- Possibility of integration with existing information systems
- Storing all information in a single online space
- More than 500 qualified and trained engineers in the service database



Digital solutions | Network scheduling of a construction project

ORACLE PRIMAVERA Microsoft Project

DRAWING UP A PRODUCTION SCHEDULE IN THE ORACLE PRIMAVERA V. 8.3 AND MS PROJECT BASED ON THE DETAILED DESIGN DOCUMENTATION AND PROJECT BASELINE PLAN

- Distribution of work fronts among contractors/subcontractors involved into construction
- Preparing a production target plan for the nearest 3 months for each contractor/subcontractor
- Monitoring composition, timing, scope of work and number of workers
- Provision of schedules and reports, its coordination with the Client
- Continuous maintenance and updating of the current schedule, and selection of the necessary mitigation measures
- Defining performance indicators of the workers

Digital solutions | Information support of a construction project

Битрикс24 Microsoft Project SketchUp

BIM 360 ORACLE PRIMAVERA ATLASSIAN Trello

miro wrike

CREATION OF A PROJECT PORTAL

Implementation of quick coordination tools by SMART ENGINEERS and organization of general interaction and control

Implementation of operational information support throughout the entire construction period, including:

- Project implementation plans
- Production objectives for contractors
- Reports on the implementation of plans and objectives

RESULTS

- Online information exchange and data update
- Storage of documents and information related to the project
- Involvement of all project participants and quicker interaction
- Making construction activities more transparent

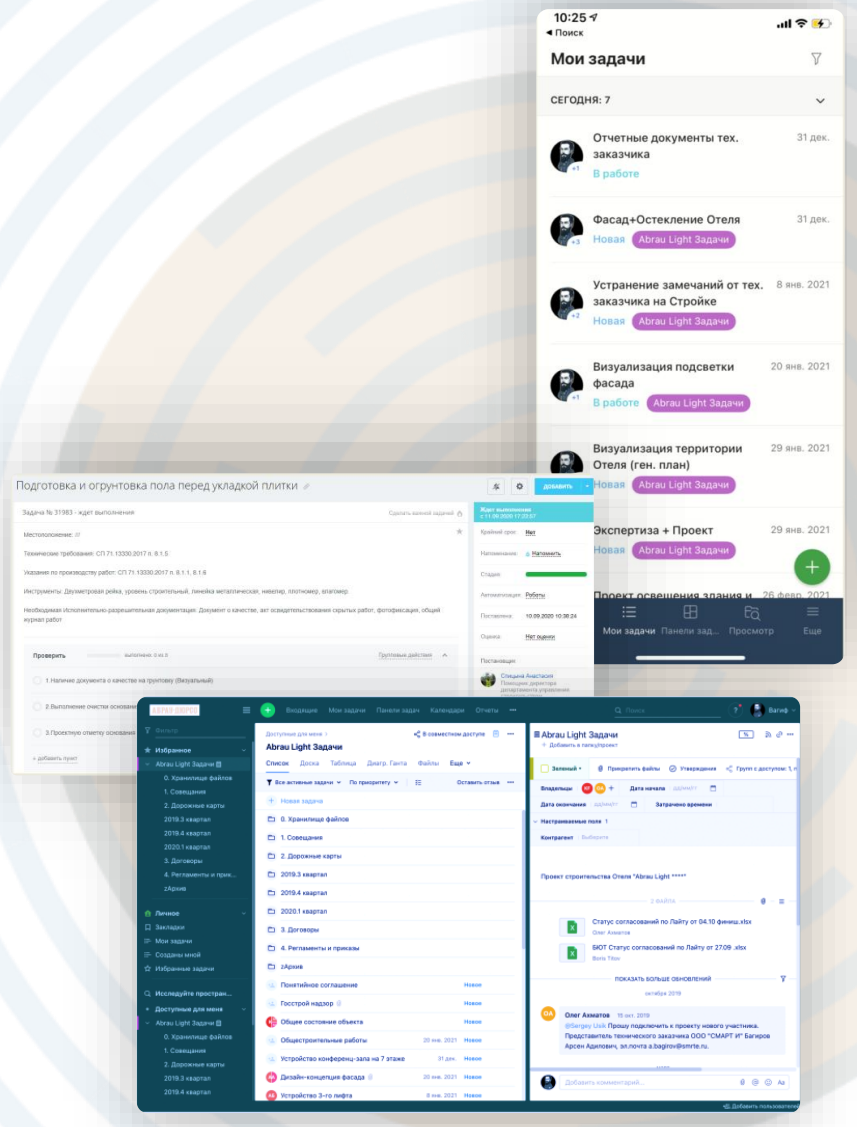
Digital solutions | Checklists

PlanRadar BIM 360 МОБИЛЬНЫЕ РЕШЕНИЯ ДЛЯ СТРОИТЕЛЬСТВА Leica Geosystems

CREATION OF A PROJECT PORTAL

Development of individual control charts (checklists) for facility acceptance based on design documentation and regulatory requirements

- Information exchange, collection and storage of data reflecting project stages based on various IT services
- Additional remote analysis of contractors and vendors. Defects prevention
- Systematization of inspections. Data synchronization. Providing access to information for all project participants
- Verification of compliance between the design and completed construction and installation works
- Timely identification of potentially challenging construction phases



Digital solutions | Quality control via mobile devices

PlanRadar BIM 360 МОБИЛЬНЫЕ РЕШЕНИЯ ДЛЯ СТРОИТЕЛЬСТВА Leica Geosystems

Quality control over the works and issuing punches via mobile devices

- Instant notification of construction participants, automated interaction with contractors
- Quick recording of all detected violations, structuring punches by facilities and work types
- Supporting the following formats: DWF, SVG, PDF, XPS, JPG, JPEG, BMP, TIFF, PNG
- Analytics in terms of contractors, work types, categories of punches and punch clearance deadlines ensured by construction control staff will provide you with reliable information for project management

Digital solutions | Interactive technical reports

PlanRadar BIM 360 ORACLE PRIMAVERA Leica Geosystems

wrike Microsoft | Power BI

Creating visual reports using visual analytics tools in MS Power BI

- Creating and analyzing facility related data –accessible from anywhere in the world
- Combining and converting information into a single standard data model
- Calculating required parameters and KPI based on the combined data
- Plotting visual charts, creating reports and dashboards while providing interaction functionality
- Viewing all reports online through the Power BI Service online service or through the Power BI mobile application
- Available web link for interaction with graphs and charts (registration is not required)

We devote ourselves to the business 24/7 to go through the rocky road of your construction project implementation so as to appreciate together the result of our common victory at the end of the path

SMART ENGINEERS®

CONSTRUCTION MANAGEMENT AND SUPERVISION

SMART ENGINEERS GROUP OF COMPANIES

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