GOSPLAN2.RU

GOSPLAN 2.0

Open planning. Every section of the site in one book

Edition of 2026-09-05

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About this book

This book is assembled automatically from the texts of gosplan2.ru as of the date on the cover and repeats them verbatim. Every chapter but the first is one section of the site; interactive elements, maps and photographs are not included, but every chapter carries the address of its live version. The introduction was written for the book: in place of the first chapter the site has navigation rather than text.

The table of contents is clickable: a button leads to the chapter, and the reader's bookmark panel mirrors the structure of the book. Each chapter ends with a list of the sources and documents its text refers to. The list was not written by hand: it is extracted from the text, so for authored chapters it is short or empty, which is more honest than a bibliography for show.

The current edition is always on the site. When citing, refer to the edition date on the cover.

CHAPTER 1

Introduction

Part 1. Open planning

Who sets the goals for a territory, how the result is verified, and why the book opens with a separation of two columns.

This chapter was written for the book. It is not on the site, where its place is taken by a list of sections.

What the project is about

A planned economy was good at setting goals and poor at revising them. A market revises constantly and sets no goals at all; it serves them. Open planning tries to join these two abilities so that neither replaces the other: goals are set publicly and are open to argument, the market chooses the means, and the result is measured from open data rather than from the contractor's report. The word "Gosplan" in the title is not nostalgia. The Soviet experience is taken as the only experiment in running an economy from a single centre ever carried through at the scale of a country, with all its achievements and failures. What is taken from it is not the answers but the questions: how to reconcile millions of links, where the data comes from, what to do when the plan and reality diverge. The answers look different today because the instruments have changed: public registers, satellite imagery, distributed ledgers. Chapter two works through that comparison; chapter three sets out the model itself.

The rule everything rests on

Every section of the project has two columns, and they are never mixed. On the left is what can be computed today from open sources and rechecked by any outsider: canopy cover from satellite imagery, park access along the street network, surface temperature, the location of substations and gas infrastructure, travel time between settlements. Such quantities can be put forward as a requirement, because they can be refuted. On the right is what an agency or an owner holds: the species composition and condition of plantings, spare transformer capacity, integrated development plans, the balance holders of networks. This is not secrecy or ill will, simply data that does not exist in machine-readable form and can be obtained only through an official request. Mixing the columns means losing trust in both. A reader who once discovers that something "computed" was in fact estimated by eye will rightly stop believing what was genuinely computed. So every chapter states plainly what it does not have, and one chapter is a register of what is digitised and what is not.

What is proposed for measurement

A quantity that has not been named, expressed in units and tied to a source cannot be a requirement, only an appeal. Hence the technical part of the project: a nomenclature of indicators, each with a unit, a data source and a way of verifying it. The first subject this is applied to is the planted area of a residential quarter. Existing green standards regulate the building: heat, light, energy efficiency. The land between buildings is regulated by no one, and a house can earn the highest rating while standing in a quarter without a single tree. The chapter on a standard for the green quarter works through the regulatory field and names the subject of the standard that is missing.

How the book is arranged

Five parts and an appendix. Part one is the model itself: the comparison with Soviet practice, the workings of open planning, the six layers and three loops of the architecture, the role of distributed ledgers, and an examination of neocameralism as the opposite political use of the same technologies. Part two is objections. It stands early on purpose: the weaknesses and risks are published by the project itself rather than left to critics, and beside them is an answer to a substantive critique of technocracy. Part three is data and territory: what the registers lack, what to measure with, the map of gas and substations, the connectivity of settlement, the rural community centre, and an essay on Norilsk as a case of what engineering optimism without measurement comes to. Part four is the green framework: biophilic urbanism, projects around the world, the method of calculation and the standard. Part five is participation: which competences the project needs now. The appendix is the chronicle of changes by date. It shows what changed and when, so that no one has to take on trust that the work is going on.

What the book does not promise

It does not promise a finished reform. A research organisation is not a subject of the right of legislative initiative: bills are introduced by deputies, factions, the Government and regional legislatures. The task of the project is to prepare a concept and a text in a form that can be picked up and introduced. Nor does it promise a summary score of the kind "this city scores 68 out of 100". Such an index rests on chosen weights and is demolished by the first question of where the number came from. A single score comes last, after the data has been gathered, not first instead of it. Finally, it does not claim to be final. Each chapter is a section of the site as of the date on the cover, and the text on the site changes. Cite the edition date, and argue with what is written rather than with what was meant.

Sources and documents referred to in this chapter

This chapter was written for the book and is not published on the site. The links point to the sections the other chapters are built from.

Related chapters

1. chapter 2, “USSR Gosplan vs blockchain: a comparison”
2. chapter 3, “Open Planning: plan, market, transparency”
3. chapter 4, “GOSPLAN 2.0 system architecture”
4. chapter 7, “Weaknesses and risks of Gosplan 2.0”
5. chapter 10, “What is digitised, and what is not”
6. chapter 11, “The nomenclature of green framework indicators”
7. chapter 19, “A standard for the green quarter”

CHAPTER 2

USSR Gosplan vs blockchain: a comparison

Part 1. Open planning · https://gosplan2.ru/en/gosplan-analysis

Detailed comparative analysis of USSR centralized planning and modern blockchain technologies in economic management. Historical lessons and digital economy prospects.

Detailed comparative analysis of USSR centralized planning and modern blockchain technologies. From five-year plans to smart contracts: research of economic management evolution and history lessons for digital economy. Mass housing of the Soviet period — the physical result of planning in five-year cycles.

COMPARISON OF ECONOMIC PLANNING MODELS

Analysis of two radically different approaches to economic planning: USSR centralized model and prospective blockchain resource management system.

USSR (classical Gosplan)

- Centralisation of goals and resources. Five-year plans, directive targets for smelting, tonnage, gross output
- Material-balance planning. Consolidated balances of “what / how much / where to”
- Signals from above instead of market prices. Shortages and surpluses were discovered after the fact
- Paper reporting, slow feedback. Padded figures and end-of-period rushes
- Distorted incentives. Meeting the plan on one indicator degraded quality
- Limited flexibility. The plan changed slowly in crises and breakdowns
- Innovation under pressure. Anything new was a risk to the plan

Gosplan + blockchain (2.0)

- Open goals and KPIs on chain. National and sectoral plans are published as a set of KPIs
- Smart contracts for delivery. Stage completed → automatic payment; breached → penalty
- Tokenised resources. Quotas for raw materials and capacity as transferable tokens
- Oracles and IoT telemetry. Sensors and ERP systems feed actual data on chain
- Data is transparent by default, with privacy preserved through ZK proofs
- Rolling planning. Monthly and quarterly recalculation against the actuals
- Multi-level governance. A strategic centre → sectoral DAOs → regional DAOs

GOSPLAN OF THE USSR: A HISTORICAL ANALYSIS AND ITS LESSONS

A comprehensive study of central planning in the Soviet Union: from the forced industrialisation of the 1930s to the systemic stagnation of the 1980s. An analysis of the institutions, achievements and limits of the planned economy as a basis for understanding what modern systems of governance can and cannot do.

HISTORICAL BACKGROUND AND THE STRATEGIC GOALS OF THE USSR

Central planning in the USSR emerged as an answer to the need for the forced modernisation of an agrarian country under international isolation and military threat. *Heavy industry is what the planning system was built for: concentrating resources on a handful of sectors at once.*

FORCED INDUSTRIALISATION

Closing the technological gap with the leading powers. Mobilising resources for large infrastructure projects.

DEFENCE CAPABILITY

Building a powerful military-industrial complex amid mounting international threats.

SCIENTIFIC AND TECHNICAL PROJECTS

Concentrating resources on breakthrough areas: the atomic project, the space programme, heavy machinery.

HOW IT ACTUALLY WORKED: THE MATERIAL BALANCE METHOD

Gosplan did not set prices or hand out goods directly. Its instrument was the material balance: for each item on the books, sources — output, opening stock, imports — were made equal to uses: production needs, consumption, exports, closing stock. If a balance did not close, the target was amended and sent back down; the cycle repeated between Gosplan, the branch ministries and Gossnab until all of them closed. The scale of that work is worth stating precisely. In 1973 Gosplan drew up balances for 1,943 of the most important items — enough to cover the supply of roughly 70 % of industrial output. Everything else was unfolded below: the ministries and Gossnab broke the aggregated limits down into specific products. The nomenclature of the actual economy, meanwhile, ran into millions of items. That is where the failure comes from. It is not that the sums were done badly: between an aggregated line in a balance and a specific product on a shelf there was always a gap, and it was closed by hand — by supply agents' arrangements, by fixers, by informal swaps between enterprises. The error surfaced not in the calculation but on the ground, months later.

SYSTEMIC LIMITS AND COSTS OF THE PLANNED ECONOMY

Despite impressive achievements in mobilising resources, the Soviet planning system ran into fundamental problems that eventually forced its transformation. *The paper accounting loop. Weeks passed between an event on the shop floor and a figure in the summary — long enough*

for plan and fact to drift apart.

INFORMATION OVERLOAD AT THE CENTRE

Millions of product lines cannot be reconciled by hand with any accuracy; planning errors accumulated.

NO PRICE SIGNALS

Administrative prices reflected the scarcity of resources and consumer preferences poorly.

DISTORTED INCENTIVES

Chasing gross output produced goods nobody wanted, worse quality and end-of-period rushes.

SLOW FEEDBACK

Paper reporting, padded figures and late corrections led to shortages and unstable fixes.

INNOVATION INERTIA

Novelty raised the risk of missing the plan; an enterprise preferred stability to experiment.

PROBLEMS IN AGRICULTURE

The kolkhoz and sovkhoz system suffered from weak incentives and inadequate procurement prices.

FOREIGN ECONOMIC TIES (COMECON)

Settlement in the “transferable rouble” at administrative parities weakened the orientation towards world efficiency.

THE EXTENSIVE MODEL RAN OUT

By the 1980s it had hit a ceiling: efficiency had to grow, but the institutional incentives never appeared.

THE CALCULATION DEBATE AND THREE ATTEMPTS TO SETTLE IT

Whether an economy can be calculated without a market was asked long before computers: Ludwig von Mises put the question in 1920, Friedrich Hayek developed it through the 1930s and 1940s, and Oskar Lange replied that prices could be computed iteratively. In the USSR the argument was pursued not in journals but in practice — three times.

LINEAR PROGRAMMING

Leonid Kantorovich set out the mathematics of optimal resource allocation in 1939 and received the Nobel Memorial Prize in Economics for it in 1975. The method worked, but it required “objectively determined valuations” — shadow prices in all but name — and admitting price as an instrument of planning stayed ideologically unacceptable for a long time.

OGAS: A NETWORK INSTEAD OF PAPER

From 1962 Viktor Glushkov pressed for the All-State Automated System — a network of computing centres that would close the balances close to real time. The project was developed for more than a decade and was never implemented nationally: it demanded a transparency of data that would have devalued the ministries' own bureaucratic capital.

THE 1965 REFORM

The Kosygin reform added profit and profitability to the assessment indicators and widened enterprise cost accounting — an attempt to restore a signal through the result rather than through volume. By the early 1970s it had been wound back: enterprise autonomy sat badly with plan targets that remained compulsory. What the three attempts have in common is that the technical answer ran into the structure of power, not into a shortage of computing capacity. That is the lesson of the Soviet experience that carries over to the present day without strain. "Is there enough power to do the sums" is not the question the fate of planning turns on.

LESSONS FOR MODERN ECONOMIC GOVERNANCE

SIGNALS AND INCENTIVES

Reporting cannot replace signals and incentives. Even a perfect summary, without a "price of scarcity", leads to structural errors.

MULTI-LEVEL GOVERNANCE

The more complex the economy, the more decentralised decision-making and fast feedback matter.

QUALITY > GROSS OUTPUT

Metrics must measure the outcome for the consumer — quality, deadline, reliability — not tonnage.

DIGITALISATION IS A MEANS

Information platforms help only if they are built into the right incentives and correction procedures.

A BLOCKCHAIN MODEL OF ECONOMIC PLANNING 2.0

A conceptual model of modern economic planning built on blockchain technology: the centre sets the strategic goals, while delivery, accounting and control are automated by smart contracts, with full transparency and cryptographically protected data. *The task has not changed — reconcile fact with plan. What changed is the speed of the channel between them.*

OPEN GOALS AND KPIs ON CHAIN

National and sectoral plans are published as a set of KPIs with deadlines (energy, healthcare, transport, digitalisation).

SMART CONTRACTS FOR DELIVERY

A plant or a region receives quotas and budgets. Stage completed → automatic payment; breached → penalty or rebalancing.

TOKENISED RESOURCES

Quotas for raw materials, capacity and emissions become transferable tokens with caps and market clearing inside the limits of the plan.

ORACLES AND IoT TELEMETRY

Sensors and ERP systems feed actual data on chain, through oracles and trusted execution environments.

TRANSPARENCY WITH PRIVACY

KPIs are public, while commercial secrets are handled through ZK proofs and commitments.

ROLLING PLANNING

Not a five-year plan on paper, but a monthly or quarterly recalculation against the actuals.

MULTI-LEVEL GOVERNANCE

A strategic centre → sectoral DAOs → regional and corporate DAOs. Appeals and arbitration run as on-chain procedures.

A DETAILED COMPARISON OF THE SYSTEMS

A systematic comparison of the key parameters of the two planning models — by efficiency, transparency, adaptability and risk management.

Criterion	Soviet Gosplan	Gosplan 2.0 (blockchain)

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/gosplan-analysis (updated 2026-08-20).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 3

Open Planning: plan, market, transparency

The concept of open planning — a synthesis of plan and market where goals are set democratically and transparently, while technologies (AI, blockchain, smart contracts) serve only as the means to achieve them.

The plan sets the frame, the market allocates inside it, and verifiability keeps both honest. Technology here is a means, not the substance Ordered cabling: coordination begins not with ideology but with whether everything is actually connected. Open planning is a way of running an economy in which goals and limits are set publicly and accountably, allocation inside those limits is left to the market, and delivery is confirmed by measurement rather than by the contractor's own report. The model does not choose between plan and market: it separates them into different loops and asks each to answer for what it is good at.

1. The problem this grew out of

Why neither a pure plan nor a pure market settles the question The "plan versus market" argument rests on the assumption that one has to be chosen. The twentieth century says otherwise: both regimes fail, but in different places, and their failures are not symmetrical — which means replacing one wholesale with the other is pointless. *A drawing is a plan: it fixes what the result should be, and says nothing about what it will cost once the work starts.*

Where administrative allocation fails

The centre receives no signal of scarcity. Without a price that reflects shortage, errors across the product range accumulate and surface after the fact — as a queue in a shop or a warehouse of unsellable goods. The mechanics of that failure are set out in the section on the Soviet Gosplan.

What the market does not do on its own

The market counts what carries a price and ignores what does not: a network whose last kilometre is not worth laying; prevention that pays back in twenty years; the connectivity of small settlements. These items are not "undervalued" — they sit outside the loop it calculates in. Hence the working hypothesis: planning belongs where a decision is long, capital-heavy and networked; the market belongs where decisions are many, small and reversible. The question is not which regime is right, but where the line runs and who has the standing to draw it.

2. Three loops, and the rule that keeps them apart

Goal-setting, delivery and verification must not meet in the same hands The model is assembled not from technologies but from three separate loops. Technology enters only where one of them has to be made faster or cheaper — and nowhere else. *Computation sets out the options; the choice between them stays with the people it affects.*

The goal loop

What counts as a result, which limits are untouchable, what the priorities are for the period — decided publicly, one person one vote, not by weight of capital or tokens. There is no automation here: voting by asset weight turns the goal loop into a shareholders' meeting.

The delivery loop

Inside the limits that have been set, market mechanisms do the work: auctions for quotas, tenders for contracts, payment against the result achieved. The centre neither appoints the contractor nor works out its costs for it — it publishes the frame and accepts the outcome.

The verification loop

Fact is confirmed by measurement — telemetry, registries, independent audit. Verifiability here is not "transparency in general" but a specific property: an outsider can redo the calculation and arrive at the same answer. The rule that holds the structure together: whoever sets the goals does not deliver, and whoever delivers does not verify. As soon as two loops meet in the same hands the model degenerates — goals plus delivery give administrative allocation, delivery plus verification give self-reporting.

3. Where the model applies, and where it deliberately does not

A measure can be gamed, so the ground it covers has to be limited in advance Any measure that becomes a target stops being a good measure. "Gross output at any cost" does not disappear when the paperwork goes digital — it mutates into "KPIs at any cost". The only defence that works is to keep metrics out of the places where value cannot be measured. *Education is one of those areas where value is created in the interaction: any unit of account here stands in for the result rather than measuring it.*

Where quantitative mechanisms belong

Standardised subjects with a natural unit of result: energy and capacity, logistics and warehousing, routine procurement, road works, telecoms. Here, substituting the indicator for the goal shows up under inspection.

Where they are not used

Care, education, medicine, culture, science. Value here is created in the interaction and does not reduce to a unit of account: a "treated case" or a "graduate" is not the result but a stand-in for it. Optimising the stand-in does not improve the result; it hollows out the work. This boundary is

not a technical limit that the next generation of models will lift. It is a design decision, and it will have to be defended continuously: pressure to widen the reach of metrics arises on its own, because measurable things are easier to manage.

4. What already works, and what is still a hypothesis

The split is compulsory: without it the model becomes a promise The parts of this structure exist at very different stages of readiness. Mixing what runs with what is being designed is the commonest mistake in writing about digital governance, and the most expensive one for its credibility.

Running in production

Open procurement data. The Open Contracting standard and the national systems built on it have shown that publishing contracts in machine-readable form is a solvable engineering task rather than a declaration. Participatory budgeting. The practice has run since 1989 in Porto Alegre and has since been reproduced by hundreds of cities: part of the budget is allocated by a direct vote of residents. Electronic transferable records. The UNCITRAL Model Law on Electronic Transferable Records entered Singapore law in 2021; in 2026 four TradeTrust-compatible platforms were approved by the IG P&I mutual insurance clubs — an electronic bill of lading now carries the same legal standing as paper in insured maritime trade.

Still a hypothesis

End-to-end on-chain accounting at national scale. Throughput and the cost of confirmation are an unsolved problem, not a matter of time and money. The DAO as a goal-setting mechanism. Token-weighted voting reproduces a shareholders' meeting rather than a civic loop, and no durable answer to that has been put forward. We do not claim the model is ready for national deployment. We claim it is testable in parts — and that each part is more honestly tried on its own, where a mistake does not cost too much.

5. Where this frame is applied in the study

The other sections are not separate topics but tests of the model against particular subjects SELO 2.0 — what to do with rural infrastructure whose buildings and grid connection survive but whose function does not. Connectivity 2.0 — transport, logistics and passenger flows: a subject where plan and market have to work together. Blockchain marketplaces — the mechanics of the delivery loop: quotas, work orders, payment against the result achieved. Biophilic cities — an example of a goal the market will not formulate on its own, because it carries no price.

In conclusion

Open planning promises no abundance and does not treat technology as a source of justice. It proposes one thing: separate goal-setting, delivery and verification into different loops, limit the reach of metrics, and make the result something an outsider can recompute. Everything else in

the model follows from that choice. Take away the blockchain, the AI and the telemetry, and the structure remains: slower and dearer, but unchanged in its logic. Take away the democratic goal loop and what remains is technocracy, which no technology will fix.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/technosocialism (updated 2026-08-20).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 4

GOSPLAN 2.0 system architecture

Part 1. Open planning · https://gosplan2.ru/en/architecture

How open planning is built: six layers from registries to publication, how the goal, execution and audit loops map onto them, which artefacts carry legal weight, and which parts already work.

What open planning is assembled from: six layers, three loops laid over them, and the rule that forbids the loops from merging. The three loops are a division of authority: who sets the goals, who executes, who verifies. Architecture answers a different question — what they are physically made of. Which stores, where the facts come from, what exactly gets signed, and what backs a conclusion. What follows is a bill of materials, not a list of technologies: here technology is always downstream of a requirement, and wherever paper and a telephone satisfy the requirement, nothing digital appears.

Six layers

Bottom-up. Each layer exists because one of the loops requires it, and none is there for later. Upper layers are useless without the lower ones: calculation without measurement yields plausible numbers, and publication without calculation yields a handsome shopfront.

L0Registries and reference data

The foundation of everything above it: stable identifiers for territories, plots, facilities, organisations and obligations. Without shared identity no two datasets can be matched, and the system becomes a heap of irreconcilable tables. This is the dullest layer and the most common cause of failure.

L1Measurement

The source of fact. Meters, network and fleet telemetry, satellite imagery, environmental sensors, event recorders. The governing requirement: whoever measures must not depend on whoever is measured — an indicator computed by the party being paid for it degrades within one contract cycle.

L2Event journal

A chronological record of what happened: which data arrived, which decision was taken, which version of the calculation was in force. It is amended only by appending — a correction is a new entry referring to the old one, never a rewritten line. This layer is what makes the question “what did we know at the time” answerable.

L3Calculation

Turning observations into indicators: aggregation, models, forecasts. The layer has one hard requirement — reproducibility: an outsider given the same inputs and the same version of the method must arrive at the same result. A calculation that cannot be repeated carries no legal weight.

L4Obligations and settlement

Contracts, quotas, limits and payments. This is where the execution loop lives: auctions, tenders, payment on delivered result. Automation is appropriate exactly as far as the result is measurable by L1 — otherwise a smart contract merely pays out faster on an unverified basis.

L5Publication

Everything the system emits: open data in machine-readable form, interfaces for the resident, the contractor and the auditor. What is published is the data and the method, not a report about the system — otherwise the conclusion cannot be checked from outside and layer L3 loses its point.

How the loops map onto the layers

Layers are the machinery; loops are authority. Their intersection is the architectural decision — and what matters is less which layers a loop uses than which ones it must never control.

Goal loop

Works from published data and from the registry of the objects it decides about. It has no access to the calculation layer or the obligation layer: a goal is stated in terms of the result, not in terms of who will deliver it and on what terms.

Execution loop

Enters obligations and settles them inside the frame the goal loop set. It reads indicators but neither computes them nor edits the method: being able to adjust the method is the same as being able to award yourself the result.

Audit loop

Owns measurement, the journal and the calculation method. It takes no part in obligations and states no goals. Its single function is to answer whether what was reported actually happened, and to what extent. The binding constraint of the whole architecture: the audit loop's infrastructure must not depend on the execution loop's. A shared server, a shared administrator or a shared support contractor merges the two loops technically even where paper keeps them apart — and the model collapses into self-reporting.

What carries legal weight

The system handles a great deal of data, but only a few artefacts create obligations. They are worth listing plainly: everything else is supporting material, and any dispute will turn on these five. Separating the signatures is not a formality. It is what turns “whoever executes does not verify” from a declaration into a property of the system: breaking it requires forging another party's signature rather than reaching an understanding within one office.

The requirements that drive the technology choices

The order here is the reverse of the usual one. First state the property the system must have, then look for a way to provide it. A technology that satisfies none of these requirements does not enter the architecture, however current it may be.

Reproducibility

An outsider with the published data and the method version arrives at the same result. This is a requirement on L3 and L5 at once, and the reason methods are versioned at all.

Independent measurement

The party being measured does not control the measurer — not through the org chart and not through the maintenance contractor. Hence the requirement to duplicate critical indicators with sources of a different nature.

An immutable journal

The past is not rewritten. Hence the hash chain in L2 — not because blockchain, but because “what was known at the time” has to have an answer.

Degrading to manual

If any automated layer fails, the procedure must continue on paper under the same separation of authority. An architecture that halts governance when it breaks is unfit for infrastructure.

Cost of verification

Verifying a fact must cost markedly less than the fact itself. This requirement rules out national-scale end-to-end on-chain accounting: there, verification costs more than most of the operations verified.

Readiness, component by component

Mixing what works with what is merely designed is the costliest error in writing about digital governance. Readiness is therefore stated per component rather than as one verdict on the system.

In production use

- Machine-readable publication of procurement — the Open Contracting standard and the national systems built on it.
- Metering and network telemetry: layer L1 has existed and run in energy and transport for decades.
- Participatory budgeting as a goal-loop procedure — practised since 1989 and reproduced by hundreds of cities.

Assembled from existing parts

- A hash-chained journal at the scale of one territory: routine engineering; the hard part is the procedure, not the cryptography.
- Versioning calculation methods and publishing input snapshots — solved in engineering terms, adopted almost nowhere in organisational ones.
- Payment on verified result in a narrow subject with a natural unit — road works, waste collection, energy efficiency.

Unsolved

- National-scale end-to-end on-chain accounting: throughput and cost of verification are an open problem, not a matter of time.
- Goal-setting through a DAO: token-weighted voting reproduces a shareholders' meeting, not a civic loop.
- Independent measurement where the result has no natural unit — care, education, culture. Here the architecture is deliberately not applied. Nothing in the right-hand column is a precondition for anything in the left. The system is testable in parts, and each part is more honestly tested where a mistake does not cost too much.

What the architecture does not solve

Listed here rather than in a footnote: an architecture without stated limits reads as a promise, and a promise cannot be checked. It does not protect against capture of goal-setting. If the goal loop is formed undemocratically, flawless machinery will simply execute somebody else's will faster and more precisely. It does not widen where metrics apply. Where a result does not reduce to a unit of account, layers L3 and L4 are not deployed at all — a design decision, not an omission. It does not replace institutions. Signature, procedure and liability for false data live outside the system; the architecture makes a breach visible, not impossible. It does not scale by itself. Properties verified on one territory require separate verification at national scale — starting with the cost of verification.

What matters here

The architecture is deliberately modest: not one component is in it for the sake of being current. Layers appear where a loop needs a fact, a record, a calculation or a signature, and nowhere else. That makes the construction testable in parts — and lets any of its technological pieces be dropped without breaking the logic. Strip out the blockchain, the models and the telemetry, and a paper version remains with the same separated signatures: slower and dearer, but the same logic. Strip out the separation of loops, and what remains is automated self-reporting, which no technology can fix.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/architecture (updated 2026-08-23).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 5

Blockchain marketplaces: role model

Research of blockchain marketplaces with role model for governance. Combining strategic goals of gosplan with market coordination through on-chain marketplaces.

A data centre hall: the physical infrastructure on which distributed ledgers and marketplaces actually run. Why they represent the future of planning and governance: combining strategic goals of "gosplan" with market coordination through on-chain resource and contract marketplaces

Main Idea

Combine strategic goals of "gosplan" (frameworks, priorities, limits) with market coordination "on the ground" — through on-chain resource and contract marketplaces. Participant roles and rights are embedded in smart contracts, data is confirmed by oracles/telemetry, and payments are tied to KPIs. Result — less bureaucracy, more transparency and fast feedback.

1. WHAT EXACTLY BREAKS CLASSICAL GOSPLAN

Where the classic model fails

- • No price signals → chronic shortages and surpluses
- • Distorted incentives (“output at any cost”) → quality suffers
- • Slow, opaque reporting → padded figures and late corrections
- • The centre drowns in data → decisions arrive too late

The blockchain answer, with roles

- • Quota marketplace: tokenised quotas allocated by auction
- • Contract marketplace: NFT work orders with KPIs and a deposit
- • KPI escrow: automatic payment against results
- • Oracles and IoT: facts confirmed by telemetry
- • Rolling amendments: updates through on-chain governance

2. ROLES AND RIGHTS (WHO DOES WHAT)

Strategic centre (ministry or DAO)

Publishes targets and limits, issues quotas, amends the rules by vote

Sector regulators

Set auction parameters, KPIs and the control of quality metrics

Public buyers and municipalities

Post work orders as NFTs and accept the delivered result

Contractors and suppliers

Compete on the marketplaces, deliver the work, receive payment

Oracles and auditors

Confirm facts and quality, and are liable through their stake

Citizens and non-profits

See public KPIs and budgets without commercial secrecy

3. WHY IT WORKS: KEY ADVANTAGES

Transparency and traceability

Order status, quota movement and acceptance criteria sit in an open register. Reports become harder to invent.

Incentives towards quality rather than tonnage

Vector KPIs, a quality threshold and deferred payment reduce the gaming of metrics.

Fast feedback

Telemetry and oracles deliver data almost in real time, which makes correcting the plan easier.

Plan and market combined

The centre sets the frame while allocation happens through market auctions — fewer shortages.

Bureaucracy automated

Smart contracts absorb the routine: milestones, penalties, indexation, budget limits.

4. MODERN CASES

Food traceability — Walmart and IBM Food Trust

Tracing a consignment of mangoes back to its origin took almost seven days; on a shared ledger it took 2.2 seconds. Traceability has since stopped being voluntary: the FDA's additional recordkeeping rule for certain foods (FSMA 204) makes it mandatory, with the compliance date moved to 20 July 2028. *Retail is where traceability pays for itself first: batch, shelf life, supplier.*

Electronic transferable records — TradeTrust (Singapore)

The UNCITRAL Model Law on Electronic Transferable Records entered Singapore law in 2021. In 2026 four TradeTrust-compatible platforms were approved by the IG P&I mutual insurance clubs: an electronic bill of lading now carries the same legal standing as paper in insured maritime trade. A programme testing interoperability between platforms and carriers, running to March 2027, was launched at the same time. *A bill of lading transfers title to the cargo. While it stays on paper, the speed of the deal is the speed of a courier.*

Electricity and grid balance — Energy Web

A non-profit whose members include grid operators and utilities; an open stack for identifying distributed energy assets and letting them take part in a market. The subject here is not reporting but the ability to connect somebody else's asset to a flexibility market without manual reconciliation. *In electricity, accounting for distributed resources is not a reporting question but a real-time balancing one.*

Notarising public data — the Chilean regulator

The National Energy Commission publishes open data anchored to a public blockchain: the dataset itself stays in an ordinary system, while the ledger holds a fingerprint that proves the data was not altered after the fact. A cheap, narrow use — exactly what a blockchain is good at.

5. HOW TO BUILD A WORKING SYSTEM

Technical architecture

- • Network: a permissioned ledger for operations, anchored to a public chain for non-repudiation
- • Contracts: PlanRegistry, QuotaToken, WorkOrder NFT
- • Data: ERP, SCADA and IoT → OracleHub

Governance

- • Privacy: ZK proofs for commercial secrets
- • Governance: sector DAOs with a timelock
- • Security: staking and slashing for false data

6. WHAT THIS GIVES YOU, AND WHAT IT DOES NOT

Gives you: small decisions delegated

Millions of line items cannot be reconciled by hand. The protocols let small decisions go to the market while the centre keeps the frame.

Gives you: one checkable version of the fact

A shared ledger is cheaper than endless reconciliation between parties. The cases above show that on specific operations rather than in the abstract.

Does not give you: truth at the point of entry

A ledger protects a record from being rewritten afterwards and says nothing about whether it was true when it was written. That is a separate problem, and not a technical one.

Does not give you: a substitute for an institution

A smart contract executes a condition. Who is liable in a failure, on what authority the registry operator acts, how on-chain acceptance maps onto budget accounting — code answers none of these. Hence the frame: marketplaces belong where the subject is standardised and the fact is measurable by instrument — quotas, work orders, logistics, energy. End-to-end on-chain accounting at national scale falls outside that frame and remains an unsolved problem. An analytical platform for economic models • 2024–2026

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/blockchain-marketplaces (updated 2026-08-20).

International schemes and organisations

1. WHO

CHAPTER 6

Yarvin’s neocameralism vs open planning

Part 1. Open planning · https://gosplan2.ru/en/kertis-yarvin

A comparison of two digital models of governance: Curtis Yarvin’s neocameralism (the state as a corporation, a CEO, citizens as customers) and the Open Planning 2.0 system (democratic goal-setting, public ownership, a public blockchain).

A boardroom overlooking the city: neocameralism proposes running a territory as a corporation. Two digital models of the future: the state as a private corporation — and the state as an open planning system accountable to its citizens Neocameralism is the concept of the American programmer and essayist Curtis Yarvin (pen name Mencius Moldbug), founder of the "neo-reactionary" current. Its key texts are the blog Unqualified Reservations (2007–2013) and the idea of "Patchwork": a world divided into sovereign gov-corps, each run by a chief executive accountable to shareholders rather than voters. Both models start from the same observation: the classical state is badly governed — slow, opaque, driven by distorted incentives. Both propose rebuilding governance on technology, measurable indicators and hard accountability for results. From there the paths diverge radically, because the two models answer the central question differently: who sets the goals, and who owns the result. Neocameralism is a far-right technocratic autocracy that turns the state into a private corporation; open planning is a left-democratic digital synthesis of plan and market, where technology serves society rather than the owners of capital.

Key differences between the systems

The table below is built around a single question: where the right to set goals comes from — ownership, or a mandate.

Criterion

Neocameralism (C. Yarvin)

Open Planning 2.0

Three forks where the models diverge

The first fork is what a dissatisfied person may do: leave, or be heard. The answer decides why the system needs to see everyone.

Who sets the goals

For Yarvin — the owner: the CEO and the shareholders. For us — the citizens, through a democratic layer. The technological apparatus is the same in both cases; what differs is who does the goal-setting.

Who owns the infrastructure

For Yarvin — the private owner of the gov-corp. For us — society. This answer decides who collects the rent from digital platforms, data and infrastructure.

Which way transparency points

In Yarvin's model monitoring points downward: the corporation sees the residents. In ours transparency points upward: citizens see budgets, KPIs and contractors.

The key ideological contradiction

Neo-feudalism

In neocameralism, automation and digitalization lead to "neo-feudalism", where disenfranchised masses depend on the will of a board of directors and the efficiency of algorithms. Technology does not reduce the asymmetry of power — it entrenches it: whoever holds the capital holds sovereignty.

Humanization of labor

In the open planning system, blockchain and the automation of routine are used as instruments for humanizing labor. The surplus from digitalization is deliberately directed toward medicine, education and care, protecting society from the dictate of a techno-administrative class.

What the models share — and why demarcation is mandatory

An honest comparison has to admit it: the two models share a common foundation, and that is exactly why they are easy to confuse. *What the models share is a bet on measurable outcomes. Where they part is over who counts as the recipient.* Both start from the premise that today's state is badly governed and that governance can be redesigned from scratch. Both take measurable indicators, accountability for results and digital accounting tools seriously. Both rely on a technological apparatus that is ideologically neutral in itself: a smart contract serves a shareholder just as well as a citizens' assembly. Hence the main conclusion: without a democratic goal-setting layer and public ownership, digital planning is technically indistinguishable from a gov-corp. Transparency, KPIs and smart contracts protect against nothing on their own — the only protection is who controls them.

Conclusion

Neocameralism and open planning use a similar technological toolkit and arrive at opposite political outcomes. The difference is not in the algorithms but in who runs them and in whose interest. That is why, in our model, democratic goal-setting is not a decorative add-on but a load-bearing structure: remove it and you get exactly what Yarvin describes. The very same smart contract can be a shareholder's instrument or a citizen's instrument. Everything turns on one question: who sets the goal, and who owns the result. C. Yarvin's position is presented on the basis of his public texts and is a reconstruction: neocameralism is a programmatic essay, not an implemented system. The comparison is analytical in nature.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/kertis-yarvin (updated 2026-08-20).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 7

Weaknesses and risks of Gosplan 2.0

A critical review of the limits of blockchain planning: politicization, technological utopianism, scalability, the oracle problem and the oversimplification of USSR Gosplan history.

An abandoned workshop — what a plan looks like once it stops corresponding to reality. Critical analysis of limitations and potential risks of digital planning This page lists what can break the open planning model and says what is done about each item. Some risks are closed by a design decision; some are only moved from hidden to visible; and some are not solved at all at the current level of engineering. The last are marked as unsolved, not as “directions for development”.

Capture of goal-setting

The largest risk here is not technical. Talk of “optimisation through technology” by itself justifies handing power to those who deploy the technology: the system designers stay at the top and citizens become users. The word “open” in the name is no protection — open data coexists comfortably with closed decisions. *The question is not who presses the buttons, but who holds the microphone at the moment it is decided what counts as a result*. The problem: technology does not create democracy; it amplifies whatever configuration of power it is placed into. What we do: goal-setting is carried in a separate loop on a one-person-one-vote basis, and automation is deliberately kept out of it. Voting by weight of assets or tokens is excluded — it reproduces a shareholders’ meeting. The technical loop delivers the goals and has no standing to set them.

Oracles: living labour behind every “automatic confirmation”

A smart contract does not know what happened in the physical world. It knows what an oracle told it — a sensor, an enterprise system, an auditor, a data labeller. Every one of those sources can be faked, and the work of the people who keep them running is usually invisible and badly paid. An “objective indicator” is somebody’s shift. The problem: trust does not disappear, it relocates — from the official to the data supplier. What we do: treat oracles as labour rather than as a source of objectivity. Cross-checking of independent sources, liability backed by stake and reputation, disclosure of who exactly confirmed a fact, and payment for that work as work. This does not remove the risk; it makes it visible and attributable.

Throughput and the cost of confirmation

A national economy is billions of operations a day. Public distributed ledgers are not built for those volumes, and the permissioned networks that can carry them lose the very property the blockchain was chosen for — independence from the operator. The cost of confirmation, meanwhile, is not zero, and somebody pays it. *A national economy is billions of transactions a day. Throughput is as hard a limit here as trust is.* The problem: a "digital Gosplan" as end-to-end on-chain accounting is not feasible at the current level of engineering. What we do: we do not design an end-to-end ledger. Only what must be indisputable and changes rarely goes on chain: the registry of goals and limits, the acceptance of a stage, the movement of quotas. Bulk operations stay in ordinary systems and reach the ledger as a summary. That removes the load — and returns the question of trusting the summary to the point above about oracles.

A measure that becomes a target stops being a measure

Goodhart's law is not repealed by digitisation. "Gross output at any cost" does not go away — it becomes "KPIs at any cost". Worse: the more precisely payment for a met indicator is automated, the faster and cheaper it becomes to fix that indicator, because what now has to be fixed is not a report but a single input. The problem: the cleaner the automation of payment against a metric, the stronger the incentive to falsify the metric. What we do: limit the reach of quantitative mechanisms in advance — they do not enter care, education, medicine, culture or science. Inside the permitted area: several indicators rather than one, a deferred share of payment for quality, rotation of metrics, human audit of a sample. None of these guarantees anything; they raise the cost of gaming.

Legal and organisational unreadiness

Working engineering does not give a working institution. Four questions have to be answered: who operates the registry and on what authority; what happens to obligations in the event of a failure or a chain split; how on-chain acceptance relates to existing procurement and budget accounting; who is liable if an oracle confirmed something untrue. Not one of them is settled by writing a contract. The problem: without a legal frame a smart contract is not an obligation but a script. What we do: treat this as a condition of entry rather than a detail of rollout. A pilot starts with answers to the four questions above, and in a sector where existing regulation already permits the arrangement — otherwise what you get is a demonstration, not an operation.

Simplified history and politicised terms

The comparison "rigid Gosplan versus flexible digital model" is convenient and wrong. The planning system was not uniform: there were attempts at cost accounting, elements of market incentives, the 1965 reform, periods of decentralisation. The opposite simplification is equally wrong — "the sums were right, the computers were missing". Both versions put an argument where history should be. Separately: any discussion of planning is instantly labelled, and the argument about the label crowds out the argument about the substance. *The history of Gosplan*

is a body of documents, not a slogan. Simplifying it in either direction means drawing conclusions from something that did not happen. The problem: distorted history yields wrong conclusions, and a dispute over the name displaces the question of whether the mechanism works. What we do: the historical material is examined separately, in the section on the Soviet Gosplan, and is not used as an argument from authority. The model has to stand on its own — without leaning on “the USSR nearly managed it”. We dropped the word “technosocialism” for the same reason, but renaming changes no mechanism and answers no criticism.

Conclusion

Of the six risks listed, two are closed by a design decision — the goal-setting loop and the limit on where metrics apply. Two more, oracles and the legal frame, are moved from hidden to visible but not removed: they stay the responsibility of people and institutions. Throughput and the cost of confirmation are unsolved at the current level of engineering, and we do not believe that is merely a matter of time and money. Digital transformation of public administration must rest on a combination of technology, common sense and institutional readiness — not on a change of slogans or on simple analogies with history.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/weaknesses-risks (updated 2026-08-20).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 8

Answer to the technocracy critique

How the open planning model answers D. Davydov's critique of technosocialism: the technocracy trap, Goodhart's law, the oracle problem and the humanization of labor.

A reading room: where an argument about models is settled by arguments rather than slogans. Why "open planning" is not King and Petty's "technosocialism", and how it answers the critique of technocracy On the article: D. A. Davydov, "Techno(crato)socialism: a critical look at the ideas of B. King and R. Petty", Sotsiologicheskie Issledovaniya (Sociological Studies), 2023, no. 9, pp. 117–129. Davydov shows that the popular "technosocialism" is a technocratic class position: real socio-political change is replaced by a technological surrogate, and the result is not socialism but radical inequality. We take this critique seriously — which is exactly why we renamed the project and built the answers into the model itself.

1. This is someone else's argument: we are not King and Petty

Davydov's blow targets the version where capitalism stays unchanged and abundance is delivered by robots plus a basic income that replaces social policy. Our model is different on three key points: *A public argument tends to collapse the positions into two — even when there are more.* Public ownership of basic resources — the very socialization whose absence Davydov names as King and Petty's main failure. The coordination mechanism itself changes (plan + market + verifiability), not just the "economic focus". Basic income is not the central tool and not a replacement for education and medicine — at most, an insurance.

2. The technocracy trap

The very discourse of "optimization through technology" legitimizes handing power to a technocratic class: those who deploy innovation stay on top, while citizens become spectators. "Socialism" becomes a label masking inequality. Goal-setting is separated from execution. Goals, limits and priorities are set by a democratic layer on a "one person — one vote" basis (citizen assemblies, protection against vote concentration), not by a token-weighted DAO. Technocracy executes the plan but does not set the goals.

3. KPIs and Goodhart's law

Any metric is gameable. "Output at any cost" does not disappear — it mutates into "KPI at any cost". Metric-driven optimization deskills labor where value is immeasurable (care, education, medicine). Honest demarcation: quotas, KPIs and oracles apply to measurable, standardized

domains (logistics, energy, standard procurement) and deliberately do not apply where value is immeasurable. Plus anti-gaming: rotating metrics, human audit, deferred quality-based payments.

4. Oracles are living labor, not "objective truth"

Behind every "automatic" confirmation stands invisible human labor — data labeling, moderation, fact verification (often precarious "ghost work"). "Objective indicators" can be faked and gamed. We treat oracles and labelers as labor: fair pay, transparency, accountability through stake and reputation, cross-checking of sources. Not "magic objectivity", but verifiable people and procedures.

5. Humanizing labor instead of deskilling it

Genuine technological abundance should expand human labor in education, medicine and care and make it more meaningful — not cut it for the sake of savings. The "discourse of savings" is neoliberalism, not socialism. The surplus from automating routine is directed toward increasing the number and quality of human roles in care and education. Routine is automated — the human is set free.

Conclusion: why we renamed the project

Davydov's critique is a test of whether "technosocialism" is neoliberalism in left-wing packaging. The main risk is not technical (scalability) but political: capture of goal-setting by a techno-administrative class. By closing this gap with a democratic goal-setting layer and a principle of humanizing labor, the model separates itself from the neo-feudal scenario. *A name works as a label: it decides which controversy a text lands in before anyone has read it.* That is why we dropped the label "technosocialism" and call the model "Open Planning": the plan sets the frame, markets and technology are the means, and democracy and transparency are the guarantee against technocracy.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/critique-response (updated 2026-08-20).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 9

The cost of inaction

A method for calculating what the absence of a block-level standard costs: six cost items, the data each requires, and an honest statement of which data does not exist today.

What the absence of a standard costs A conversation about a standard usually opens with "what will it cost". The question is half wrong: inaction has a price too — it simply is not a separate budget line, and so it appears to be zero. This section is a method for calculating it.

Why there are no numbers here

Because we have not verified any. Trade press carries estimates of the cost premium and payback period of green construction; we do not quote them, because behind them is no method anyone can re-check. Publishing someone else's figure on the strength of a retelling would be exactly what this whole project is built against. Method and stated assumptions first; numbers after the pilot. Anyone can calculate with this method without waiting for us.

What the bill consists of

Six items. For each we state what is to be counted and where the data comes from — including the cases where today it does not exist.

Evacuation and demolition instead of prevention

The cost of evacuating and demolishing a building against the cost of the measure that would have kept it usable. Norilsk supplies a ready example where the arithmetic needs no method: around 250 buildings in the centre are due for demolition because the ground beneath them is thawing, while stabilising that ground costs less than rehousing the people above it. The difference between those two figures is the cost of inaction in its purest form.

Doing the public realm twice

The cost of planting carried out without a standard and lost, plus the cost of doing it again. Requires municipal spending on a specific territory and survival rates for the planting. We found neither in machine-readable form — see the register of the state of the data.

Lost property value

The price difference between blocks with a degraded and a preserved environment, all else equal. Calculable from open transaction data, but it needs comparable blocks and control for other factors. This is the most contestable item, and it cannot be presented without a strong method — an opponent will take it apart first.

Health costs

The load on healthcare associated with the quality of the urban environment: heat stress, air quality, nowhere to move. Requires medical statistics tied to territory. No such linkage is openly available, and it is a separate register line we have not yet opened.

Connection costs where capacity was not planned

The cost of a grid connection when no free capacity turned out to be nearby, against the cost of siting that accounted for it. Here we hit the same wall as the map: free capacity must be disclosed, yet it cannot be assembled nationally. While that field stays empty, this item can only be calculated by hand and for one site at a time.

Forgone income of a territory

Investment that never arrived where the environment and infrastructure cannot host production or housing. The largest in magnitude and the hardest to prove. It can only be counted honestly by comparing similar territories with different fates — that is, once a history of observations has accumulated.

What is missing to make the calculation

Of the six items, two run into absent data, two require a strong comparison method, and only one can be computed right now — the one where Norilsk has already run the experiment for us. That is the answer to why this project starts with data rather than slogans: without the register and the map, the cost of inaction stays rhetoric.

Calculate it yourself

The method is open on purpose. If you hold data for your own territory, the items above apply without us, and the result can be brought back to us as an objection. A disagreement about the arithmetic is more useful than agreement with the method.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/cost-of-inaction (updated 2026-08-27).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 10

What is digitised, and what is not

A register of the state of territorial planning data: what is machine-readable, what is published for human eyes only, and what does not exist — with legal basis and verification status.

A register of the state of the data Digital transformation is usually discussed in the future tense. This section uses the present: here is the list of data without which territorial planning cannot be calculated, and here is the state each of them is in today. Not an opinion — a list with grounds.

Why this deserves its own section

The gap between "the data is disclosed" and "the data is usable" stays invisible until it is written out. A duty to disclose is discharged by publishing a table on a website — formally, everything is in order. But no one, human or machine, can assemble a national picture from forty such tables. That gap is where everything we propose lives: until an indicator can be calculated, it cannot be regulated.

Key

Free capacity at substations

Disclosure is mandatory. In practice it is tables and pictures on the sites of dozens of companies, each in its own shape. Nobody can assemble a national picture from them today — the state included. On our map this field is empty, and stays empty until a source appears.

Location of substations of 35 kV and above

No single open register exists. Our 29,861 objects come from OpenStreetMap — volunteered data: completeness is not guaranteed and can only be spot-checked. A further 86,490 substations were found without a stated voltage and so are not counted among the 35 kV+.

Gas distribution infrastructure

The same: there is no open layer with object coordinates. The 22,046 objects on our map come from OpenStreetMap, with the same caveats about completeness.

Gasification of settlements

Aggregate figures by region are published. Settlement by settlement, in machine-readable form — they are not. That is why our map says "gas nearby" rather than "gasified": these are different claims, and we will not substitute one for the other.

The green framework of a territory

Neither a register nor a mandatory counting method. The standard in force regulates the procedure — how to write improvement rules — not the result. There is nothing to count, not because data is missing but because what to count has never been defined.

Municipal improvement rules

We got this wrong in the first edition and correct it here: a single federal register of municipal acts does exist, access is free and round-the-clock, and the official legal portal has an open data section and a read-only JSON API. But it is the carrier that is machine-readable, not the content: greenery requirements are written in prose, and comparing them across municipalities still means reading every document. Nothing can be calculated from them.

Settlement boundaries

The national spatial data system does collect the information, including municipal and settlement boundaries, and serves it in vector formats through an interface. Full access requires signing in through the state authentication system. For an open country-wide calculation that is not enough: an outsider cannot re-check the result without creating an account.

Urban planning information systems

The information is formally open, but is issued on written application in which the applicant states the section, the form and the medium. No bulk machine export is provided, and content and access terms differ from region to region. There are many systems and no comparable national picture.

The federal open data portal

The portal was closed in 2023 for migration and reopened on 15 July 2025. Per an open-data specialist's review: 5,826 datasets from 739 bodies, about 100 MB compressed; 80.5% of the datasets hold fewer than a hundred rows, and only 1% hold ten thousand or more. For comparison, our single infrastructure map weighs 64 MB. The point is not that we are large — it is that the portal is small.

Housing and utilities data

The system does have an open data section — that we confirmed. What we did not check: the composition of the datasets, their depth, and whether they support a calculation over the housing stock of a single block. The line stays here precisely because without it the cost of maintaining the built fabric cannot be computed, and that is half of any conversation about money.

Budget spending on public realm improvement

Federal expenditure from 2016 onwards is available for download and analysis. But the cut we need is a different one — how much a given municipality spends on improving a given territory — and we did not confirm that it exists in machine-readable form. Without it neither the cost of

inaction nor the payback of a standard can be calculated.

How the register is kept

A record marked as verified means we confirmed the claim in the month shown. A record without the mark is preliminary — based on general understanding and awaiting a check. We show that difference rather than hiding it: a register that lies about its own completeness is worth nothing.

If you know better

Every line here is an invitation to object. If the state of affairs in your field is different, or a source exists and we do not know of it — write. A substantive objection is more useful than agreement.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/data-gaps (updated 2026-08-27).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 11

The nomenclature of green framework indicators

Nine measurable indicators for a city block: what is counted, in what units, where the data comes from, and which of them cannot be computed today.

The nomenclature of a block's green framework Until a quantity is named, expressed in units and tied to a source, it cannot be required — only urged. This is the technical part of the proposed standard: nine indicators in four groups, each with its data source and means of verification.

Four of the nine cannot be computed, and that is written here

Of the nine indicators, five can be computed directly today, two partially, and two not at all. The reason for each refusal is named and tied to a specific line of the register of the state of the data, rather than waved at in general terms. A nomenclature that hides its own incompleteness deceives whoever sets out to calculate with it.

Quantity

How much greenery there is. The most familiar group and the only one usually counted, which is why it feels as though there are indicators enough.

Density of trees

Share of planted surface

Provision of a view onto greenery

Connectivity

Whether the greenery joins into a framework. Isolated patches form no framework: they cannot be walked through, they do not perform a climatic function, and they do not bind the territory together.

Share of connected framework

Density of breaks in the framework

Accessibility

Whether the greenery can be reached on foot. A hectare of planting behind a fence and a hectare within walking distance are different quantities, however equal in count.

Distance to public greenery

Share of residents within walking distance

Durability

Whether what was counted is still there in three years. This group is what separates the proposed standard from those in force: it regulates the result, not the intention.

Survival of planting

Change in the share of planted surface

Where the threshold values come from

The basis is the rule of three quantities used in international planting practice: no fewer than three trees in view from a dwelling, a share of canopy cover for the block, and a limiting distance to public greenery. The rule sets the frame; the specific values for Russian conditions are to be established when the standard is drafted and are deliberately not given here — to set them before field testing would be to pass a supposition off as a requirement.

What will turn this into a standard

Field testing on a real block: values for all nine indicators, determined on the ground and reproduced by an outsider from published data. Until then the nomenclature remains a proposal, not a document.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/indicators (updated 2026-08-27).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 12

Map of gas and substations

Part 3. Data and territory · https://gosplan2.ru/en/energy-map

An interactive map of settlements, gas infrastructure and substations of 35 kV and above across the republics of the former USSR. Open data, with what it does not contain stated plainly.

Settlements, gas infrastructure and substations of 35 kV and above across the republics of the former Union. Regions are added one at a time; pick one from the list below the map. The question the map exists to answer is simple: where can a connection of 150 kW or more be made or extended, and where is there gas as well. The answer has two halves — infrastructure and free capacity — and they sit in sources of very different quality. Infrastructure is visible in open data, and it is shown here. Free capacity is something grid companies are obliged to disclose, yet none of those checked publishes it in machine-readable form. So the map shows the skeleton and honestly leaves blank what is not yet filled in. The scope is the fifteen republics of the former Union. The map is assembled region by region: each is computed and clipped to its own administrative boundary separately, so the dropdown grows as collection proceeds and the line above the counters says how much of it exists yet.

What is shown and what is not

The same split as elsewhere on this site: on the left what is computed from open sources and can be re-checked by anyone, on the right what an agency holds. Mixing them would cost the reader's trust in both columns.

Shown

Substations of 35 kV and above with coordinates and voltage class — 35, 110, 220, 330, 500 and 750 kV. The 35 kV threshold is not arbitrary: it is exactly the line at which the law obliges disclosure of free capacity. Gas distribution and regulation stations and trunk pipelines, as mapped in the open dataset. Every settlement in the region — cities, towns, villages and hamlets, with population where it is recorded.

Not shown

Free transformer capacity at each substation. This is the crucial gap: without it the map shows where infrastructure exists but not where you can actually connect to it. Whether a settlement is in fact connected to gas, and whether a connection is technically available. The gasification operator knows this; proximity to a pipeline is no substitute. Live applications and technical conditions already issued — that is, the capacity which is formally free but in practice reserved.

This is why settlements on the map are marked “gas nearby” rather than “connected to gas”. The first is computed and checkable. The second is a fact the operator holds, and substituting distance-to-pipe for it would be passing an estimate off as data.

What this rests on

Disclosure under these rules does happen: every grid company has a portal or an interactive map. But it is published in a form built for a human clicking through a form — no common format, no coordinates, no export. Nobody today, the state included, can assemble a country-scale map out of that.

What to know about the data

The limits are listed here rather than in small print, because a map without stated limits looks more precise than it is. Substations with no voltage tag were dropped, and there are hundreds of them. Most are 10/0.4 kV transformer substations irrelevant to a 150 kW question, but some of what was dropped may well matter. The completeness of the gas layer depends on how thoroughly pipelines are mapped in the open dataset, and that varies a great deal. A low count of settlements marked “gas nearby” says more about mapping coverage than about the region's actual gasification. The data is clipped to the region's administrative boundary, not to a rectangle: the first build caught parts of five neighbouring oblasts and reported 80 % more settlements than actually exist. Figures from different regions are not comparable with one another. Latvia yields 8,143 settlements — more than almost any Russian oblast, though it is a fraction of their size: in the Baltics the open map records hamlets densely, in Russia it often does not. Within a single region the data is consistent and usable; comparing regions to each other without correcting for mapping coverage is not. Data source: OpenStreetMap under ODbL. Layers are collected per region and clipped to each region's administrative boundary. Showing:

What a dot on the map stands for

A 220/110/10 kV substation. On the map this is one dot out of 29,861 — and nearly all that open data says about it: where it stands and at what voltage. How much capacity is free is stated nowhere.1 / 3 Gennady GrachevCC BY 2.0

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/energy-map (updated 2026-08-26).

External links

1. CC BY 2.0 — https://commons.wikimedia.org/wiki/File:Moscow,_220-110-10_kV_electrical_substation_in_Sviblovo_(31157038140

CHAPTER 13

Connectivity 2.0: settlement framework

Part 3. Data and territory · https://gosplan2.ru/en/connectivity

How to count infrastructure by connectivity rather than volume: the same-day accessibility index, clock-face timetables, logistics consolidation and backhaul, the internet as the fifth utility, INFRA FIRST, the digital twin of settlement, ten anti-patterns and a first-year roadmap.

An interchange — the place where connectivity is either created or lost. Infrastructure, flows and the digital framework of settlement Count the connectivity achieved, not the volume built Analytical memorandum · working draft

The core shift: count connectivity, not volume

Infrastructure is planned in kilometres, hospital beds and megabits. Volume answers none of the questions a person and a shipment actually ask: can I get there, can it get there — and in how long. The unit of planning is neither a facility nor a sector but the daily cycle. the human cycle "home → service → home" · the freight cycle "production → consolidation → market" Connectivity is not additive: two roads that do not meet at a node give fewer connections than one road through a node. A decision is therefore taken on the change in connectivity of the whole network, not facility by facility.

The settlement framework: four levels and the rule of time

Levels are defined by function and access time rather than population. A settlement of 800 serving five neighbouring ones is an anchor centre by role.

L0 — settlement

Daily: school, health point, shop, community centre, local work. 15 minutes on foot.

L1 — anchor centre

Weekly: clinic, public services, college, sport, market, logistics hub. 60 minutes from L0.

L2 — small town, district

Monthly: hospital, court, technical college, larger retail, distribution centre. 120 minutes.

L3 — regional capital

Rare: university, specialised medicine, airport, regional agencies. From any L0 there is a connection to its L1 allowing one to travel, receive the service and return the same day, on at least five days a week *A stop beside a field. The infrastructure is there; what it does not answer is*

whether one can reach the district centre and return the same day. The same-day accessibility index is the share of residents for whom that cycle closes under the timetable in force. Computed from timetables and a map, without surveys. The critical subtlety: opening hours count — a run delivering a passenger to a closed office does not close the cycle.

The timetable is worth more than the asphalt

A clock-face timetable: every route arrives at the node in the same minute of the hour and departs a few minutes later. The transfer becomes guaranteed. Connectivity grows multiplicatively with reliable connections and only linearly with the number of runs. `WITHOUT A CLOCK-FACE WITH ONE route A arrives :10 all arrive :55 route B departs :05 all depart :05 wait 55 min wait 10 min 3 routes -> 2 links 3 routes -> 6 links`

Clock-face timetable

A guaranteed transfer with no new fleet. The cost is organisational: dispatch control and slack in the schedule.

An equipped interchange

Canopy, heat, toilet, displays, wayfinding, cycle parking, parcel point. The transfer stops being a punishment.

A through ticket

One journey instead of three separate ones. Paying twice kills demand more reliably than journey time.

Consolidating dedicated runs

School, medical and postal routes in one contour instead of three parallel ones — a saving on existing spending.

Priority on the approach

Time is lost on the final kilometres before the centre, not in open country.

A new line

Large capital investment. Justified once organisational measures are exhausted, not before. *The school run: the route, the vehicle and the driver exist, yet serve one category of passenger twice a day*. Operator contracts pay for mileage — so an operator who ran everything without securing a single connection counts as compliant. Payment should follow achieved chains. But records come first: machine-readable timetables and recorded actual arrivals, or a clear bad metric is merely swapped for an opaque one.

The last mile

A perfectly synchronised timetable does nothing for someone living four kilometres from the stop. Below a certain flow a scheduled route does not work economically, and four options remain — all worse than a bus in a city.

An infrequent route

One or two runs a day do not close the cycle against the service's opening hours.

Demand-responsive transport

Requires district-level dispatch, connectivity and a payment habit. The economics at low density are unproven.

Consolidation with dedicated runs

The route, the vehicle and the driver already exist. The limits are regulatory and insurance-related.

Supporting private mobility

May be the cheapest of all — and gives nothing to those the system exists for: the elderly and children. Part of the problem needs no transport: a lit pavement with winter maintenance moves 700–1,200 metres from "impassable" to "normal". It is the cheapest transport measure available, and it almost never enters transport programmes because it is formally classed as landscaping.

Logistics: consolidation and backhaul

Rural logistics is expensive not because of distance but because of empty running and small consignments. The cost arises on the first and last kilometre, not on the trunk haul. The return run is capacity already paid for and standing idle. *A trunk run. The economics are set not by this stretch but by the first and last kilometre — and by what the vehicle carries back.*

Micro-hub at L0

Acceptance, scales, packing, labelling, a small cold store, parcel pickup. Crucially it is not built but placed inside the existing community centre from SELO 2.0.

District hub at L1

Consignment build-up, palletising, paperwork, veterinary clearance, industrial refrigeration, cross-docking, carrier access.

A load exchange

Technically simple: a register of runs with free volume plus a register of consignments. The difficulty is organisational — trust, standard packaging, electronic waybills, runs published in advance. *A district hub: consignment build-up, paperwork, cross-docking, carrier access.*

The cold chain: the precondition of all agricultural logistics

Milk, meat, berries, greens and fish lose marketability when the temperature regime breaks. The break happens not on the trunk haul, where the reefer runs, but at the transition points: in the field, during loading, while waiting, at transhipment, at handover. `field --X-- waiting in the sun --OK-- reefer --X-- transhipment --OK-- store --X-- handover each X cancels every preceding OK` Cold is a continuous chain whose value is set by the weakest link. A refrigerated vehicle with unrefrigerated acceptance in the settlement produces no effect. And it is a permanent electrical load — which returns to ENERGY FIRST: capacity is confirmed before, not after.

The internet as the fifth utility

Fibre should be counted as a utility alongside water, heat, electricity and the road. But the metric “coverage” leads to a systematic error: it describes none of the parameters that determine whether a link is usable for work. *An optical patch panel — the physical layer that reporting reduces to a single number, “coverage, %”.*

Uplink

Video calls, telemedicine, remote work. A 100/5 link is formally excellent and practically unusable.

Latency and jitter

A video conference fails from instability, not from a shortage of megabits.

Time to restore

A territory on a single channel loses school, health point, tills and public services at once.

Peak-hour speed

“There is coverage” and “it works in the evening” are different statements. Measured only through complaints. For the school, the health point and the community centre — a second channel over a different physical medium. Two channels from one operator along one route are not redundancy. Plus autonomy during an outage: a local cache, offline acceptance of applications, local telephony.

INFRA FIRST

metering and losses → capacity → reserve → connection → and only then new development The first investment is a meter, not a pipe: in a system with unknown losses, expanding capacity partly feeds those same losses. The choice between centralised and decentralised is made on 25-year cost of ownership, not by habit. Free capacity at the connection point is a constraint in the territorial model, not a separate sectoral topic.

The digital twin of settlement

In SELO 2.0 the twin is described for a single settlement. For flows that is not enough: a flow exists between nodes. The model must be a network and must recalculate its layers automatically — a new quarter immediately yields added trips, substation load, demand for school places and a change in accessibility for its neighbours. The minimum workable version is four datasets: machine-readable timetables, the road network with seasonal passability, service points with opening hours, population by settlement. That is enough to compute the index and see the bottlenecks.

Four comparable metrics

Cost per passenger-minute saved

Compares timetable, road and interchange against one another.

Cost per point of accessibility gained

Compares investment across different territories.

Cost per unit cut in small-consignment tonne-kilometre

Compares hub, cold store and load exchange.

CAPEX per new permanent resident

Compares an infrastructure package with direct relocation incentives. Payment by result works only with independent measurement: if the indicator is computed by the party being paid for it, the metric degrades within one contract cycle. The measurement contour therefore comes before the contractual one.

Ten anti-patterns

What follows happens by default unless expressly prohibited. - 1 A road without a timetable: resurfaced route, accessibility unchanged by a single minute - 2 Housing before utilities and before the bus - 3 “Coverage” instead of measurement: a subsidy for declarations produces declarations - 4 A hub without cold: it serves only non-perishables - 5 Duplication instead of connection: promising a service everywhere blocks organising the trip - 6 A single channel to a critical point - 7 The model held by a contractor: planning ends with the contract - 8 Payment for mileage: every run delivered, not one connection secured - 9 The timetable as a PDF: formally published, unusable for computation - 10 Optimisation without a failure scenario: the system collapses at the first fault The costliest is the ninth. A timetable published as a PDF makes everything else impossible: the accessibility index, clock-face planning, apps, outcome-based contracts. It is the cheapest requirement on the list and the precondition for the other nine.

Roadmap for the first year

1. Measure the accessibility index

1–2 months. Collect timetables and service points, compute the share of residents with a closed cycle, publish the map: who is cut off and why.

2. Active measurement of connectivity

1–2 months, in parallel. Agents at subscriber points, four parameters by address, separate checks for school, health point and centre.

3. Inventory of flows

2–3 months. Who travels where, what is moved out, the share of empty running, the loading of dedicated runs.

4. One clock-face interchange

6–9 months. Bring timetables into a clock-face pattern, equip the transfer, measure before and after.

5. One micro-hub

6–12 months. Acceptance, cold store and pickup in the existing building; a load exchange; measurement of delivery cost and temperature breaches. The first three steps are measurement. They cost orders of magnitude less than any construction and are useful in themselves: they show where connectivity is lost before the money is allocated.

What is unverified

Without this section the document would read as a finished programme. - The economics of demand-responsive transport at low booking density - The size of “city → village” migration, on which the whole demographic case rests - The willingness of connectivity providers to disclose actual parameters - The scale of cold chain losses at small-producer level - The 30 / 60 / 120-minute thresholds are working values, not a research finding - The institutional feasibility of a single owner of connectivity Connectivity cannot be designed if nobody owns it. Until a specific organisation is answerable for it, with a budget and an indicator, it remains the sum of other people’s side effects.

Three memoranda, one contour

SELO 2.0 answers what to do with a territory. Biophilic Cities answers what the environment should be. Connectivity 2.0 answers what connects those territories. The community centre from the first document is simultaneously the logistics micro-hub and the last-mile point of the third, while its square is an element of the biophilic framework.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/connectivity (updated 2026-08-19).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 14

Selo 2.0: community centres

An investment and urban-planning concept: turning derelict houses of culture into multifunctional community hubs, an energy core for the settlement, new low-rise housing, a digital twin of the territory, and a roadmap of 100 → 1,000 → 5,000 settlements.

A village street: land, house and road already exist — what is missing is function, economics and a reason to stay. A national programme for next-generation community centres and a new development model for Russia's small settlements From abandoned infrastructure to the infrastructure of the future Working draft of an investment and urban-planning report

The document reads on three levels at once

For governors and municipalities

What to actually do with the territory: which building to take first, what happens to the land around it, and in what order networks, building and housing arrive.

For funds and developers

Where the economics sit: the capital structure, the investment perimeter of the territory, a new product instead of selling plots, and the payback contour.

For the federal level

Why this can become a model of spatial development rather than a one-off construction project: a common standard, a network of centres, industrial demand, and a measurable outcome.

The paradox: much of the infrastructure of the future is already built

Russia's small settlements are losing people and holding vast unrealised physical capital at the same time. Buildings, land, networks and roads already exist — what is missing is not square metres but function, economics, and a reason to stay. The former houses of culture are the most telling case. They once were the centre of settlement life. Today many of them are buildings with an enormous volume of space and no function to match it. *A disused public building. Volume, structure and grid connection survive — the function does not.*

What is happening today

- Shrinking and ageing population
- Young people migrating to large cities
- Degrading public infrastructure

- Few jobs outside agriculture
- Worn-out housing stock and utility networks
- Rising per-capita cost of maintaining the territory

What the territory already has

- Culture houses, clubs and libraries
- Schools and administrative buildings
- Sports facilities
- Land plots in the settlement centre
- Roads and access routes
- Utility networks and connected capacity
- Public squares
- Communication channels and coverage Part of this capital effectively sits idle. The proposal is not to restore the culture house of the past, but to use it as the infrastructural foundation of the settlement of the future.

The core thesis: this is not a building-repair programme

SELO 2.0 is a new model of territorial development. Reconstructing a building is not the goal here but the instrument: it only makes sense together with economics, energy, housing and governance. existing infrastructure capital + a new economy + a contemporary social environment + energy independence + digital governance + new housing = a new rural settlement The object of the programme is therefore not the house of culture but the settlement as a whole.

Why now

Russia's Spatial Development Strategy to 2030 with a forecast to 2036 is explicitly built around the territorial framework and the development of anchor settlements; its implementation plan was approved by Government Order No. 2149-r of 11 August 2025. SELO 2.0 is best read not as a separate cultural programme but as a practical instrument for delivering that strategy across several policy lines at once. The multifunctional rural community centre is not an invention from scratch: Russian architectural research has long studied the shift from the classic culture house to centres combining social, cultural, educational and economic functions, and the community centre has traditionally been treated as the leading structural element of a rural settlement.

Why the old culture house is the ideal entry point

Location

As a rule it stands in the centre of the settlement, where pedestrian routes and transport already converge.

Land

There is usually significant free land around the building, suitable for a square, a park, sports and new development.

Scale

This is not a small building: the volume was designed for large numbers of people and can carry a whole set of new functions.

Public memory

Residents do not need to be told where it is. The place is already known and requires no new habit to be formed.

Symbolic role

The culture house has historically been the centre of the settlement — renewing exactly this point reads as a change in the trajectory of the whole territory. So instead of building a new facility on the outskirts, it is wiser to give the centre its function back. *A typical Soviet-era house of culture: central location, large volume, land around it and public memory — five advantages a new building on the outskirts does not have.*

From culture house 1.0 to a community hub

The key transformation is not in the finishes but in the set of functions. Culture does not disappear: it returns, but as one function among many rather than the only one.

CULTURE HOUSE 1.0

SELO 2.0 — the civic and technological centre of the settlement

Twelve functional clusters

Inside the building there are no “halls” but clusters — each with its own audience, economics and operating hours. The exact mix depends on the territory: some clusters are basic, others are optional add-ons.

The public living room

The heart of the building: a café, a library, shared tables, Wi-Fi, workspaces, a small stage, a local market, and the settlement information panel. You can come here simply to be here, buying nothing.

Education

A point of continuous learning: computer rooms, remote programmes, a lecture hall, tutoring for schoolchildren, languages, and professional retraining for adults.

Rural FabLab

3D printing, CNC, laser cutting, electronics, robotics, equipment repair. Not a museum of technology: a farmer needs a part, makes a prototype, tests it and runs a small series.

Digital work hub

Rural coworking. Live in the village and work as a developer, engineer, designer, accountant or analyst. The workplace has to appear before the person moves, not after.

Digital health point

Not a hospital but a node of a distributed medical network: a nurse's room, telemedicine, basic diagnostics and tests, ECG, prevention, and a base for mobile teams.

Children's hub

A playroom, robotics, music, art, programming, a laboratory, a media studio and career guidance. A child should be able to spend three to five hours here after school.

Sport

The old hall is transformed: gym equipment, functional training, team sports, martial arts, dance, rehabilitation. Outside — a pitch, a workout area, running and ski trails.

Culture

Theatre, music, cinema, concerts, exhibitions, festivals, local history and crafts. Culture returns to the building but stops being its only content.

Rural business centre

Accountant, lawyer, business registration, grants and credit programmes, marketing, e-commerce. A resident should get an answer to one question: "I want to start a business. What do I do tomorrow morning?"

Local manufacturing

Food, timber, furniture, textiles, ceramics, metalwork, packaging, agricultural processing. Not an industrial zone but distributed manufacturing: small, clean and technological.

The state

A public services centre, postal and social services, a public reception room, digital government services. Most everyday matters get resolved inside the settlement.

Tourism

Where the potential exists: a tourist information centre, rentals, tours, souvenirs, local cuisine, route information. The culture house becomes the gateway to the territory.

Three cores and a digital layer

A community hub is not a building. It is a building plus a square, a park, sport, the street, transport, energy and digital infrastructure. The programme rests on three cores tied together by one digital model. *The housing contour of the programme. Roads, networks and the community centre come before the houses — otherwise the quarter stays a set of plots.*

COMMUNITY HUB — people

Education, healthcare, culture, sport, work, technology. The centre and the square in front of it, which becomes the settlement's square rather than a car park: fairs, festivals, a farmers' market, open-air cinema.

ENERGY HUB — power

Generation, storage, networks, reserve. The renewed building becomes the energy core of the settlement, not merely its consumer.

HOUSING HUB — housing

A new rural quarter of 50–300 houses: roads, pavements, lighting, networks, internet, planting, children's areas and public spaces. People buy not a plot but a way of living.

DIGITAL HUB — governance

The digital twin of the territory ties the three cores together and serves as the tool for design, investment analysis and outcome control.

The biophilic layer: a settlement inside its landscape

SELO 2.0 continues the line of biophilic cities at rural scale. Nature here is not leftover landscaping but load-bearing infrastructure: it takes load off the storm drains, holds the microclimate, and works for health and for property value. The main mistake of new rural construction is turning the territory into asphalt, fences and parking. The Russian rural landscape is worth treating as a national asset: the task is not to build cottages over it but to place life inside it. *A street with closed canopies — available to a small settlement without major spending. The requirements here are organisational: soil volume, watering, protection from de-icing salts.*

500 metres of life

Within five to seven minutes on foot from the centre: housing, school, children's functions, park, sport, the bus stop, shops and workplaces. What is redesigned is not a building but the spatial structure of the settlement.

Blue-green network

Water, forest, fields, parks and green corridors connect into a continuous network instead of staying scattered patches. Rainwater works for irrigation and landscape wherever that is technically and legally permitted.

The 3–30–300 rule

Three trees visible from the window, 30% canopy cover in the neighbourhood, 300 metres to a quality green space — a verifiable standard that applies to rural development too.

Street instead of fence

Instead of continuous two-metre fences — green streets, visual corridors, shared gardens, children's routes and pedestrian links. That is a different housing market and a different quality of environment.

ENERGY FIRST: power before housing

New houses create additional load. Build 200 houses first and only then ask whether there is enough capacity, and the territory gets a problem instead of development. The energy contour is therefore designed first. *Local generation. The mix follows the economics of the territory: the criterion is cost per kilowatt-hour and reliability, not whether there are panels in the photograph.* capacity → networks → generation → reserve → new housing The mix of solutions follows the economics of the specific territory rather than fashion: the criterion is the cost per kilowatt-hour and reliability, not whether there are panels in the photograph.

The digital twin of the settlement

The practical version of Gosplan 2.0 at territorial scale: not another reporting system but an operating model of the settlement in which physical and economic layers are connected. *The digital twin: linked layers of population, land, buildings, networks and projects. A change in the housing layer instantly recalculates load in the energy layer.*

The digital passport of a facility

`COMMUNITY HUB No. 001 Floor area: 2,340 m² Land plot: 1.4 ha Built: 1976 Structure: satisfactory Roof: needs repair Utilities: need replacement Current capacity: 120 kW Capacity after: 250 kW Reconstruction cost: RUB 180–230 m Catchment: ~6,000 people Jobs: 35–60 Footfall: 15–25k visits/month` The figures in the example are illustrative. Real values appear only after a survey of the specific building and territory — and it is those, not sector averages, that become the basis for a decision.

Scenario modelling: a choice, not a single answer

For every territory the system computes several scenarios and compares them on the same set of indicators. A human still decides — but on comparable data.

Scenario A

Repair the building in its former function

Scenario B

Convert it into a community hub

Scenario C

A new facility on a new site

Scenario D

Community hub + a new residential quarter

Scenario E

Hub + energy + housing + manufacturing The output is not “a 2,000 m² building” but the investment perimeter of a territory: community hub + energy hub + 300 housing plots + local processing + tourism + a work hub. For such a perimeter, returns can be calculated as a whole.

The investment model: four layers of capital

Dividing the roles matters more than the size of the budget. The state does what private investors find hard to do, and private capital then receives a prepared territory.

State capital

Roads, utility networks, social infrastructure, base reconstruction, public realm, the regulatory framework.

Municipal capital

Land, existing buildings, governance, the choice of site and of local partners.

Private capital

Housing, manufacturing, cafés and services, tourism, coworking, commercial property.

Institutional capital

Infrastructure funds, banks, regional funds, impact investors, and venture financing for the technology layer. The target is that one rouble of public money attracts one to three roubles of private capital. That is a goal, not a proven economy: the figure has to be verified on pilot territories. The difference from classic PPP: the project starts not from a ready building but from a development strategy for the territory. The investor enters a perimeter where connection, land and infrastructure risk has already been removed.

ONE STOP TERRITORY

A territorial development corporation at regional or municipal level manages the land, the infrastructure, the community centre, housing and the pipeline of investment projects. The investor does not have to walk separately through the administration, the grid operator, the water utility, land management and transport — which sharply reduces transaction costs.

One system, four interfaces

Different participants look at the same territory with different questions. The data is shared; the presentation is not.

Governor — Territory Dashboard

What is happening to the territory: population and youth dynamics, jobs, tax base, energy costs, footfall in the centres, new houses and new companies.

Investor — Investment Dashboard

CAPEX split into private and public, the number of houses and jobs, population growth, returns and payback — for a specific perimeter rather than a sector average.

Municipality — Public Value

Infrastructure, employment, taxes, demography, social services and — separately — the running cost of what has been built.

Resident — Community App

The centre's schedule, services, bookings, the local marketplace, and feedback about the territory.

New indicators: how to measure the result

The main mistake of publicly funded construction is counting the cost per square metre. What should be counted is how much public and economic function that metre creates.

Settlement Vitality Index (SVI)

A composite indicator: demography, economy, employment, education, healthcare, infrastructure, energy, entrepreneurship, digital access and environmental quality. Measured before the project and five years on.

Functional utilisation

How many hours a day the space is genuinely in use. For an old culture house this is a few per cent; for a community hub it is several times higher. This is exactly where the economic case for reconstruction appears.

Cost per functional hour

Spending on the facility divided by the public function actually created, rather than by floor area.

CAPEX per new resident and per job

How much infrastructure investment it takes for a territory to attract one permanent resident and create one job.

Public value per rouble

How much public effect each invested rouble creates, measured the same way across every territory in the programme. The financing principle follows from this: part of the money is tied to results — jobs created, employment, footfall, tax base, new residents, lower energy consumption. Not “the budget was spent” but “the result was achieved”.

A typology of settlements: where the money should go

Spreading funds evenly produces uneven effects. The same hundred million produces a different multiplier in different territories — and that has to be calculated before, not after.

S0 — critical

Population is steadily shrinking and there is no economic base. The priority is maintaining services and decent conditions for those who remain, not capital investment.

S1 — stable

Population holds and potential exists. A basic community hub is feasible without a large housing component.

S2 — growth point

Transport, free land and economic activity are present. The full perimeter applies: centre, energy, housing, manufacturing.

S3 — anchor centre

The territory serves neighbouring settlements. It develops as an inter-settlement node with an extended set of functions. Socially weak territories cannot be abandoned either. The model therefore carries two coefficients — investment and social — with the balance between them set by the state, publicly and by the same rules for everyone.

Architecture: a modular catalogue and regional identity

Old on the outside, new on the inside Scale, character, brick, concrete and historic elements are preserved. Glass, timber, metal, greenery, daylight and modern engineering systems are added. A dialogue emerges between the heavy monumental volume and a light transparent extension. A federal catalogue — HUB-500 / HUB-1000 / HUB-2000 / HUB-5000 — is not a set of ready buildings but a kit of architectural and engineering modules: one structural and engineering system from which each settlement assembles its own mix of functions. *The “old outside, new inside” principle: the load-bearing frame is kept, while the interior and the services are*

replaced entirely. Spaces must change function: education in the morning, coworking during the day, a lecture in the evening, cinema or a concert at night. One hall, four modes. For the economics of a small settlement this is critical.

The North

Different materials, different thermal solutions, and work with light through the polar night.

Siberia

Maximum energy efficiency, enclosed public spaces, winter gardens, heated passages.

The South

Open galleries, shade, verandas, water and green space as the primary climate instrument.

The Far East

Modularity and assembly logistics, energy autonomy, thermal efficiency.

The Caucasus

Local stone, courtyard structure, public squares, and reliance on regional tradition.

RUSSIAN RURAL FUTURISM

The task is not to copy the European village, the American suburb, the Scandinavian town or the Chinese village, but to create a new Russian rural architecture: Russian scale, regional identity, modern engineering and digital technology. A teenager should want to go there, an entrepreneur to work there, a governor to show it to delegations, and an investor to understand its economics.

Roadmap: 100 → 1,000 → 5,000

Phase I — 100 settlements

Piloting across 10–20 regions and different climate zones. Selection is not random: infrastructural, demographic, economic, transport, land, energy and tourism potential are computed in advance. Each region gets one flagship — a fully realised example.

Phase II — 1,000 settlements

Standardisation: a BIM library, standard solutions, the digital platform, financial models, the regulatory base. A Russian supply chain appears — furniture, HVAC, electrical equipment, lighting, IT, sports and medical equipment — that is, industrial demand rather than a one-off build.

Phase III — 5,000 settlements

A national network: community centres become elements of the country's spatial framework, linking village, district, small town and regional capital. A pilot takes 24–36 months: year one — diagnosis, design, financing and site preparation; year two — reconstruction and launch of

functions; year three — measurement, optimisation, and only then scaling.

Who does what

The legislature

A legal definition of the multifunctional community centre, a federal standard, the digital passport of a facility, a single register of unused social assets, mechanisms for transfer, concession and blended finance, and a special regime for pilot territories.

Ministry of Construction

The federal architectural standard for SELO 2.0 and the standard solutions of the modular catalogue.

Ministry of Agriculture

Integration with the rural development programme, which already covers construction and reconstruction of roads to socially significant facilities and to processing plants.

The region

A regional rural development programme, pilot selection, the development corporation, and investor support.

The municipality

Choosing the territory, the building and the land, working with local entrepreneurs and residents, and operating the centre.

Business

Jobs, manufacturing, housing, services and tourism — the substance that fills the built perimeter.

The technology operator

The digital part of the concept: passports of territories and facilities, the model, analytics, the investment showcase, and outcome monitoring.

Arisweb Rural OS

A digital platform managing physical infrastructure — neither “let’s make an app” nor “let’s put up a building”, but the link between the two. Eight modules that can be introduced in sequence. The territory marketplace is a story of its own: the farmer, the cheese maker, the apiary, the furniture workshop, the craftsman and the tourist site each get a digital storefront and sell locally, regionally and nationwide. The community hub then becomes the physical logistics node: packaging, labelling, storage, pickup, dispatch. The digital economy connects to a specific piece of land. *The territory marketplace: the local producer gets a digital storefront, and the community centre becomes the physical logistics node.*

Launch sequence

- 1 Digital passport of the settlement — map, buildings, land, population, infrastructure, energy, projects
- 2 Passport of the community centre — condition, reconstruction cost, functions, utilisation, scenarios
- 3 AI Territory Planner — development scenario, CAPEX, infrastructure, housing, jobs, population forecast
- 4 Investment showcase — investment-ready territories instead of scattered assets
- 5 National map — every facility in the programme and its status Selling the platform before the first delivered territory makes no sense. The system has to grow out of a real pilot: first one genuine SELO 2.0 with before-and-after measurements, and only then replication.

What has to be tested before scaling

A concept is only as strong as the honesty with which its weak points are checked. That is what the pilot is for.

The economics are unproven

Private capital leverage, payback and population growth are targets. Until they are measured on real territories they are hypotheses, not indicators.

Operating costs beat construction costs

Building a centre is easier than running it for twenty years. The operating model, the source of operating income and the responsible operator must be defined before work starts.

People

A FabLab, telemedicine and coworking only work if there are people running them. Without a programme to train and retain staff, the facility degrades into an empty hall.

Demand for relocation

Willingness of city dwellers to move permanently, rather than for the summer, must be measured before the quarter is designed — not after the plots are sold.

The “built and forgotten” risk

Without mandatory outcome measurement and public reporting, the programme risks becoming another cycle of renovations with attractive paperwork.

Conclusion

The strongest argument for the programme is that it does not require starting from zero. The land, the buildings, the roads, the networks, the settlements, the history and the communities already exist. The task is to connect existing capital to a new function. Not to build more, but to

use better. Not to repair an asset, but to redefine its function. *Land, roads, buildings and communities already exist. The task of the programme is to connect existing capital to a new function*. SELO 2.0 is not a return to the village. It is the chance to build the future where territory, history and human capital already exist. We propose not to repair empty buildings but to give them back the function of development centres. Unused social assets turn into infrastructure assets of the territory. One community hub should change not a building but the development trajectory of an entire settlement.

The foundations of the concept

Primary sources the document rests on. Links open in a new window.

Spatial Development Strategy of the Russian Federation

The implementation plan for the Spatial Development Strategy to 2030 with a forecast to 2036 — Government Order No. 2149-r of 11 August 2025.

Integrated rural development

The state programme: roads to socially significant rural facilities, production and processing sites, and social infrastructure.

“Selo 2.0” as a space of social innovation

Research into the new meanings of rural territory: tourism, recreation, relocation of city dwellers, and new employment models.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/selo-2-0 (updated 2026-08-19).

Regulatory and official documents

1. Order No. 2149-

CHAPTER 15

Norilsk: why the dome was never built

An analysis: a dome over an Arctic city is incompatible with the permafrost the city stands on. Five block-scale solutions, the bridge that is Talnakh's only link, and a measure of our own blindness in the data.

A limit case for the method If the green-framework method and the infrastructure map work here, they work anywhere. Norilsk is the largest industrial hub of the Arctic: permafrost, wind, polar night, and a city where everything is shipped in. We tested both the method and our own data on it. Below is what we found, including what argues against us.

What it looks like

Norilsk: continuous development in the middle of tundra. The city was built where there is neither forest nor ground able to hold a foundation the ordinary way.1 / 5 Пихтарь Виктор ДмитриевичCC BY-SA 4.0

Why the dome was never built

Domed schemes for the North were developed in earnest — down to a settlement for four thousand people shaped as a single ring building holding housing, schools and a winter garden under one roof. In the competition for Norilsk's renovation to 2035 the dome returned, this time as a covered square under a membrane shell. Failure to build is usually blamed on money. The reason runs deeper and it is an engineering one: a dome contradicts the very principle the city stands on. Norilsk holds because the ground beneath it stays frozen. Piles are frozen into the permafrost and the buildings sit over a ventilated undercroft whose job is to carry the building's heat away. The first Norilsk buildings became unusable within a few years precisely because this was not yet understood. A dome does the opposite: it creates a warm zone beneath itself. Thawing ground, loss of pile bearing capacity, settlement. Add the snow load over a span of that size, the wind, the heating of an enormous volume of air and the evacuation of a covered city, and the dome stops being an underfunded dream. It stops making sense in this particular place.

What here is fact and what is reasoning

The conclusion that a dome is incompatible with permafrost is our reasoning, not a quotation we found. It rests on what is verified: the Norilsk school of construction is built on keeping the ground frozen, and its degradation is already causing failures. The building at 14 Moskovskaya was evacuated after its foundation moved; around 250 buildings in the centre are due for demolition; new ones go on deeper metal foundations. If a permafrost engineer shows the reasoning is wrong, we will rewrite it.

What is worth building instead of a dome

The right conclusion is not "no dome" but a change of scale: cover the block and the links between buildings, not the city. Each solution below is compatible with permafrost because none creates a warm zone under housing.

Covered warm links instead of a covered city

Passages between buildings: a small span, a manageable snow load, a local thermal loop that does not touch the ground under the housing. A person crosses winter without stepping into minus forty in the wind, and the permafrost under the buildings stays frozen.

A courtyard atrium under a light shell

Not a city — a block. Exactly the scale our standard programme calls unregulated today: the building is governed by a standard, the territory between buildings by no one. The Arctic makes that gap especially plain.

A winter garden as part of the dwelling

The biophilic method under extreme conditions. If greenery outdoors is impossible for nine months, the green framework moves inside. For Norilsk that is not decoration but a health question — and an indicator that can be counted the same way an outdoor one is.

Wind-shielding block geometry

Norilsk used it historically: buildings were placed to shield courtyards from the wind. But it was used as a device, not as a norm. There is no requirement, so compliance cannot be checked, so in new development the device rests on the designer’s goodwill.

Ground thermal stabilisation as a requirement

Today cooling devices are installed piecemeal and often only after a failure. Scientists say plainly that construction norms for permafrost need revision. The economics are obvious: evacuating a building costs more than stabilising the ground beneath it. This is a ready subject for the standardisation track.

The bridge: a question of reliability, not architecture

The bridge over the Norilskaya river is Talnakh’s only link to the city. Not the main one — the only one. Talnakh means the mines the whole combine rests on, and tens of thousands of residents. The bridge is repaired on a multi-year cycle: in 2025 and again in 2026, the main stage running from 1 June to 18 September with reversible, signal-controlled traffic. The bridge over the Naledнaya river on the same road was reconstructed separately and opened in October 2024. So the country’s largest Arctic industrial hub runs on a single reversible lane for three and a half months a year. The only link has no backup, and any failure of the bridge means not inconvenience but a halt to extraction. If one is looking for what was never built and ought to be, a second crossing of the Norilskaya outweighs any dome.

A measure of our own blindness

We checked what our own map knows about Norilsk. Within the city radius: 45 gas objects, 6 substations, 1 settlement. Six substations for a city powering one of the world's largest metallurgical combines is obviously not reality — it is a measure of the emptiness in the data. There is no official open layer, and volunteer mapping barely covers the Arctic. We show that figure rather than hide it: if the map drew a plausible picture here, it could not be trusted anywhere.

Why this matters to the project

Until now the biophilic line has walked around extreme climates, and that is its weak point: a method that works only in the temperate belt cannot be offered as a national one. Norilsk tests three things at once — whether a green framework can be counted where greenery is impossible for nine months; whether a block can be regulated where the building already is; and whether the map sees what open data does not hold. The first two answers are encouraging, the third is negative, and it is recorded in the register of the state of the data.

Sources

A page about a real city must carry its sources. Every factual claim above is checkable against the links below; reasoning is marked as reasoning. - Какими могли быть арктические города — Arzamas - Северный полис будущего: концепция реновации Норильска до 2035 года - Первые норильские постройки приходили в негодность за несколько лет - «Нормы строительства на вечной мерзлоте пора пересмотреть» - Вечная мерзлота: мониторинг зданий и сооружений — Норникель - Ремонт моста через реку Норильскую, 2026 - Реверсивное движение через Норилку с 1 июня 2026 - Открытие движения по мосту через реку Наледную, октябрь 2024

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/norilsk (updated 2026-08-27).

External links

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2. Какими могли быть арктические города — Arzamas — https://arzamas.academy/materials/1821
3. Северный полис будущего: концепция реновации Норильска до 2035 года — https://prorus.ru/projects/severnyj-polis-budushchego-arhitekturno-planirovochnaya-koncepciya-renovacii-goroda-norilska-do-2035-goda/
4. Первые норильские постройки приходили в негодность за несколько лет — https://www.ttelegraf.ru/news/pervye-norilskie-postrojki-prihodili-v-negodnost-za-neskolko-let-ekspluataczii/
5. «Нормы строительства на вечной мерзлоте пора пересмотреть» — https://www.ttelegraf.ru/news/normy-stroitelstva-na-vechnoj-merzlote-pora-peresmotret/
6. Вечная мерзлота: мониторинг зданий и сооружений — Норникель — https://nornickel.ru/sustainability/climate-change/permafrost/
7. Ремонт моста через реку Норильскую, 2026 — https://news.sgnorilsk.ru/2026/05/07/remont-mosta-cherez-reku-norilskuyu-podoshel-k-finalnomu-etapu/
8. Реверсивное движение через Норилку с 1 июня 2026 — https://news.sgnorilsk.ru/2026/06/01/s-1-iyunya-dvizhenie-cherez-norilku-snova-pojdyot-v-reversivnom-rezhime/
9. Открытие движения по мосту через реку Наледную, октябрь 2024 — https://news.sgnorilsk.ru/2024/10/29/v-norilske-otkryli-dvizhenie-po-mostu-cherez-reku-nalednuyu/

CHAPTER 16

Biophilic cities: principles and cases

Biophilic urbanism: the 3-30-300 rule, green roofs, daylighted rivers, ecological corridors. Health and climate effects, world cases, and the link to the open planning system.

Cities in which nature is load-bearing infrastructure, not decorative landscaping added with whatever budget is left over Supertree Grove, Gardens by the Bay, Singapore. More than half of humanity lives in cities, and that share keeps growing. The city is the one environment humans designed entirely themselves — which is precisely why it turned out to be an environment humans are not biologically adapted to: overheating, noise, polluted air, no living nature in sight. Biophilic urbanism proposes not to "add some greenery" but to redesign the city so that natural systems work as engineering infrastructure — cooling, filtering, retaining water and restoring people.

What a biophilic city is

A biophilic city is one where access to living nature is treated as a basic utility, on a par with water, electricity and transport. Trees, water bodies, soils and biodiversity are not "amenities" here but infrastructure with a measurable function: they lower temperatures, absorb stormwater, clean the air and directly affect residents' health. The term goes back to the biophilia hypothesis of the biologist Edward Wilson (1984): humans have an innate affinity for living things and natural forms. An entire school of urban planning grew out of that hypothesis, and since 2013 there has been an international Biophilic Cities network of partner cities from Singapore and Wellington to Birmingham and Oslo.

The 3–30–300 rule

A simple measurable standard for a biophilic city: at least 3 trees visible from every window; tree canopy covering at least 30% of every neighbourhood; no more than 300 metres to the nearest park or green space. Its virtue is that compliance can be checked against satellite imagery and open data rather than against a report.

Six principles

Nature within walking distance

Greenery is distributed across the whole city rather than concentrated in a few showcase parks. The key indicator is not total green area but the distance from a front door to it.

Green roofs and facades

The building becomes part of the ecosystem: a planted roof retains stormwater, reduces heat gain and extends the life of the membrane, while vertical greenery works as a filter and as thermal insulation.

Daylighting rivers and blue infrastructure

Rivers and streams previously buried in culverts are brought back to the surface. Rain gardens, permeable surfaces and retention ponds replace part of the storm sewer and absorb peak loads.

Biodiversity and ecological corridors

Green patches are linked into a continuous network that birds, insects and small animals can move along. An isolated square is ecologically almost useless — connectivity is what works.

Daylight, forms and materials

Daylight, a view of nature from the window, natural ventilation, wood and stone in the finishes. This is the scale of the individual building, where biophilia affects well-being directly.

Urban agriculture

Community gardens, school plots, edible landscapes. Beyond food, they provide what an ordinary lawn cannot — resident participation and hands-on care for the territory.

What it delivers

Biophilia is not an aesthetic stance but a set of measurable effects. That is exactly why it fits the logic of planning: every principle has an indicator that can be verified. *A park within dense development. The effect comes from position rather than size: a park embedded in a residential district works every day.*

Health and mental well-being

Access to greenery is associated with lower stress levels, better recovery from illness and a lower prevalence of anxiety disorders. For a city budget this is a direct saving on healthcare.

Temperature and the heat island

Trees and water bodies lower air temperature in a neighbourhood by several degrees through shade and evaporation. With heatwaves becoming more frequent, this is a matter of survival for vulnerable groups, not of comfort.

Water and stormwater runoff

Soils, rain gardens and green roofs retain part of the precipitation, reducing peak load on the sewer system and the risk of flooding. Natural infrastructure costs less than concrete and does not need replacing.

Air and biodiversity

Greenery traps part of the particulate matter and noise, while a connected network of habitats brings birds and pollinators back into the city. Importantly, plants do not replace tackling emission sources — they complement it.

The economics of the territory

A high-quality green environment raises property values, retains residents and businesses, and cuts building cooling costs. That same effect generates the main risk — green gentrification.

World cases

None of these projects was "greening for beauty" — each solved a specific engineering or social problem.

Singapore: "City in Nature"

A state landscape replacement policy: a developer must return to the building an amount of greenery equivalent to the land it occupies. The green standard is embedded in planning regulation rather than in a developer’s goodwill.

Seoul: the Cheonggyecheon river

Where an elevated highway was dismantled in the city centre, a culverted river was brought back to the surface — nearly 6 km of public space. The riverside is noticeably cooler than the neighbouring streets, and birds and fish have returned.

Milan: Bosco Verticale

Two residential towers with hundreds of trees and thousands of plants on the balconies. The project demonstrated both the potential of a vertical forest and its price: such a system requires constant professional maintenance.

Copenhagen: cloudburst plans

After the devastating downpour of 2011 the city shifted to blue-green infrastructure: streets that act as channels, parks that act as reservoirs, squares that become basins during a flood.

The Biophilic Cities network

An international partnership of cities that maintain open nature metrics — canopy cover, park accessibility, biodiversity. It is precisely open reporting that separates a working programme from a declaration.

The link to open planning

Green infrastructure is an almost ideal proving ground for open planning. Its results are physically measurable, confirmed by independent data sources, and directly relevant to every resident. Here is how the planning system works in this domain: Goals are set democratically:

residents of a neighbourhood vote on canopy share, tree count and priority — shade, water or a playground. The centre sets only a minimum frame and limits. Indicators are verified independently: canopy cover is measured from satellite imagery, temperature and air quality from a sensor network — not from a contractor's report. Payment is tied to survival: a smart contract for planting releases the bulk of the payment not for the act of planting but for living trees two or three years later. This removes the central pathology of urban greening — "planted and forgotten". The registry is open: every tree, its species, planting date, contractor and status are publicly visible. A citizen can check a specific courtyard without requesting documents.

A method for biophilic transformation

Everything above is description. The method is what turns description into an executable programme: a territory passport, data layers, a green framework, a project portfolio and indicators verifiable independently of the contractor.

Projects like this around the world: a link directory

A separate section with verified primary sources: international biophilic-city networks, working municipal programmes and open methodologies — 14 links in three groups.

Risks and honest caveats

Biophilic urbanism is not a problem-free solution, and glossing over its costs leads to the same errors as technological optimism in digital planning. *Asphalt without a single tree: the surface heats strongly and admits no water — the whole rainfall reaches the storm sewer within minutes.*

Green gentrification

A well-landscaped green district becomes expensive, and existing residents are displaced by those who can pay more. Without housing policy, greening works as a mechanism of displacement.

Greenwashing

Renderings with trees on facades are used to get approval for projects that in reality contain neither greenery nor any provision to maintain it. Hence the demand for verifiable indicators instead of renderings.

Maintenance costs

A green roof, a vertical forest and a daylighted river require irrigation, pruning and specialists for decades. A project without a built-in operating budget turns into a ruin within a few years.

Gaming the indicators

An indicator like "number of trees planted" instantly produces mass plantings of cheap saplings that do not survive. Only a living-canopy metric with deferred verification actually works.

Conclusion

A biophilic city is not a city with more flower beds but a city in which natural systems are part of the engineering calculation and have their own budget, indicators and responsible parties. This approach requires planning precisely because a connected green network cannot be built through one-off projects, and the market on its own does not produce public goods that cannot be charged for per user. *A continuous green framework with development embedded in it. Connectivity, not total area, separates a working system from a set of parks*. Shade, clean air and a living river are public goods that cannot be sold by the unit. That is exactly why they require a plan — and the transparency of that plan is the only protection against greening that exists only on paper.

A dedicated biophilic cities project

The topic is being developed on a separate site — with detailed cases, standards and calculations.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/biophilic-cities (updated 2026-08-19).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 17

Biophilic projects worldwide: a directory

A verified link directory for biophilic urbanism: international networks (Biophilic Cities, CitiesWithNature, C40), municipal programmes (Singapore, Seoul, Copenhagen, Milan) and methodologies (3-30-300, 14 Patterns, Living Building Challenge).

Singapore — a territory where the green standard is embedded in planning regulation. A directory of primary sources: where to read the standards, the reporting and the actual projects without intermediaries Biophilic urbanism is not a theoretical construct: behind every principle there are working municipal programmes, international networks and open methodologies. The primary sources below are grouped by purpose: networks set the frame and maintain comparable reporting, municipal programmes show what it looks like in a specific place, and the methodologies supply verifiable standards. Networks are the easiest starting point — they reduce scattered city initiatives to comparable metrics.

International networks and platforms

Cities and specific projects

Standards, methods, certifications

The links point to external sites and open in a new window; all were verified working at the time of publication. The directory is informational and does not imply endorsement of these organizations.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/biophilic-projects (updated 2026-08-19).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

CHAPTER 18

A method for biophilic transformation

Five steps that turn biophilic urbanism into an executable programme: territory passport, data layers, green framework, project portfolio, verifiable indicators.

Five steps that turn biophilic urbanism from a description into an executable programme. The Biophilic Cities section describes what a city ought to be. That is not enough: a description does not build anything. But the opposite extreme fails too — a composite “biophilia index” published before the data has been gathered destroys trust faster than having no index at all: it rests on hand-picked weights, and the first question, “where does the number come from”, is enough to sink it. The method below is built so that each step rests on the previous one and every quantity carries a source and a date. It is deliberately dull: first establish what exists, and only at the end what it costs.

Five steps

The order is not decorative. A framework drawn before the data layers is a picture; a portfolio assembled before the framework is a wish list; an indicator assigned before the portfolio is a promise nobody is accountable for.

01Territory passport — what exists

Boundaries, population and its trend, housing stock, public facilities, transport links, administrative status and — above all — who controls what. The passport does not assess, it records. Unknown quantities are marked as unknown rather than filled in with something plausible.

02Data layers — what can be computed

Spatial layers are laid over the passport: buildings and courtyards, the pedestrian and road network, green and water features, barriers (arterial road, railway, industrial site, fence), land surface temperature and vegetation index. Some layers can be computed today without anyone's permission; others exist only inside an agency.

03Green framework — what ought to exist

A framework is not the sum of the parks but a connected system: large natural areas, the corridors joining them, district centres, local squares, courtyards and the routes to school and station. It is designed from the breaks: first find where connectivity fails — a crossing over the highway, a dead end at the tracks, an industrial fence — and build the framework there, rather than wherever planting happens to be convenient.

04Project portfolio — what to do

The framework is broken into a finite number of projects, each with an address, a landowner, a cost, a deadline and a responsible party. A project with no answer to “whose land is this and who pays” does not enter the portfolio — it stays on the list of unresolved questions. This cuts out most of the attractive proposals and leaves the executable ones.

05Verification — how to prove it got better

The indicator “N trees planted” means nothing: a hundred thousand trees planted in the wrong places make a city worse while allowing a report of improvement. What must be counted is function: how many residents gained access, how much shade area grew, how far surface temperature fell, how many kilometres of framework became connected. All of these can be checked independently of the contractor.

What open data can compute, and what it cannot

This is the central distinction of the whole method. The two columns must not be mixed: the moment computed and requested figures are presented as one list, the reader stops trusting either.

Computable today

Access to nature: the share of residents within a 300-metre walk of a green area — along the street network, not as a straight line on the map. Framework connectivity: where green areas are joined by a walkable route, and where they are severed by an arterial road, railway tracks or a fence. Canopy cover and the heat island: from satellite imagery — vegetation index and land surface temperature, always with the acquisition date. Barriers: railway tracks, arterial roads, industrial sites — whatever keeps the adjacent forest out of reach.

Requires a request

Species composition, age, diameter and condition of plantings — available only from a municipal inventory. Which body holds each plot on its balance sheet, and the actual cost of maintaining it. Development and comprehensive-redevelopment plans not yet released publicly. Stormwater drainage: where it runs, where it discharges and what overflows in heavy rain. The split is deliberate. Everything on the left is computed without anyone's permission and can be re-checked by any reader from the same sources. Everything on the right requires a formal request — and until it is answered it stays a blank line, not an expert estimate.

Indicators someone is accountable for

The 3-30-300 rule sets the frame, but it has to enter a programme as quantities somebody commits to change by a stated date. On the left are the customary formulations, which commit to nothing; on the right, the same intentions worded so that failure is visible. Plant 5,000 trees Raise the share of residents living within a 300-metre walk of a green area from the measured

baseline to 90% by a stated year Landscape the square Connect the forest to the residential blocks by a continuous walking route, via a crossing that does not exist today Increase the area of green space Raise canopy cover in the block to 30% — measured on a summer image, not in the design documents Reduce the heat load on the built-up area Cut mean surface temperature of the block at July midday by 2 °C against the baseline-year measurement Create green routes to schools Raise to 80% the share of schoolchildren whose route to school runs mostly along a planted corridor and crosses no arterial road at grade

What the method rests on

The method requires no new law, and that is its political advantage: it offers not a parallel reality but a way to execute what has already been adopted. The citation details of these acts were verified against their texts in legal reference databases in August 2026.

Where application begins

The method is worked through on one territory in full, rather than across many at once and shallowly. The first territory is chosen on three criteria, and all three are about verifiability rather than convenience.

A tractable scale

The calculation can be carried through to the end and re-checked, and a mistake does not cost too much. A territory you cannot walk in full is not suitable for a first application.

A known counterparty

It must be clear whom to address a request for the closed data to, and with whom to sign off the result. Without that, the right-hand data column stays empty for good.

A passport already assembled

Step one must be done before anything else. Until there is a document where every figure carries a source, there is nothing for the layers to be laid over.

What the method does not do

Listed here rather than in a footnote, because a method without stated limits is not a method but a sales pitch. It does not replace fieldwork. An image shows that a canopy is there; it does not show that the tree is diseased and its root system was destroyed when utilities were laid. It gives no composite score until the data is in. A single figure of so-many-out-of-a-hundred comes last, not first — otherwise it rests on hand-picked weights. It does not resolve the land question. If a plot is privately owned or reserved for development, the method will show that but will not remove it. It does not scale before it has been worked through on one territory. The second case is taken up after the first, not alongside it.

Why this is needed

The difference between an environmental project and a territorial development programme is not rhetorical: it is whether, at the end, you can say what specifically changed and by how much. The method exists precisely so that such an answer is possible and does not depend on who carried out the works. The method answers four questions in order: what exists, what ought to exist, what must be done to get there, and how to prove it got better. Skip any of the first three and the fourth becomes a report.

What the framework is made of

A courtyard — the framework's point. Trees in a courtyard count differently from trees in a park: different accessibility, different function, and a different fate under redevelopment.1 / 3 Vasily AstaninCC BY-SA 4.0

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/biophilic-method (updated 2026-08-22).

External links

1. CC BY-SA 4.0 — https://commons.wikimedia.org/wiki/File:Yard_on_Sorge_street_Ufa.jpg

CHAPTER 19

A standard for the green quarter

Russia's green standards regulate the building. The territory between buildings is regulated by nobody. A reading of the normative field, the subject a territorial standard would take, and the three routes to adopting it.

The green standards in force regulate the building. The territory between buildings is regulated by nobody. This section is about fixing that. The gap in green regulation is not that there are too few standards. There are enough of them, and they are decent. The gap is that the unit of assessment is everywhere the object — the building — while the quality of an environment is not produced by an object. What follows sets out what is already in force, exactly where the boundary of regulation runs, and what is proposed as its subject. The calculation method is described separately; this is about what it becomes as a norm.

What is already in force

The place to start is not an idea but an inventory of the field. The citation details of every act below were checked against the text of the document rather than taken from a summary: a programme that gets a standard's number wrong will not survive its first professional reading.

ГОСТ 35329-2026

Green standards for multi-apartment residential buildings: 58 criteria, 35 of them mandatory, with Bronze, Silver and Gold ratings. Interstate status; developed in the construction technical committee and superseding the national standard of 2022. The anchor document and the point of reference. Interstate status means a territorial layer built on top of it can also be interstate rather than merely national.

ГОСТ Р 70346-2022

The predecessor: the national green standard for multi-apartment housing. 81 criteria — 37 mandatory and 44 voluntary — across ten categories, 163 points maximum. The history of the criteria and their weights. Comparing the two editions shows which requirements the industry judged unworkable on the way to interstate status, and which it kept.

ГОСТ Р 71392-2024

Green individual housing construction: 45 criteria across eight categories, on the same rating scale. Proof of portability: the scale has already been carried successfully to a different type of object once. That is a direct precedent for carrying it to a territory.

ГОСТ Р 70387-2022

Comprehensive improvement and maintenance of urban territories: requirements for the structure of a municipality's improvement rules and the processes of drafting and updating them. The only document at territorial level — and it is procedural. It regulates how a municipality writes its rules, not what result it must achieve. That is precisely the boundary beyond which nothing exists.

ГОСТ Р 71332-2024

Vertical greening — a continuation of the line of standards that began with green roofs. It shows a settled habit of the industry: individual techniques are regulated before the system they are supposed to add up to.

ППП РФ № 1587

Criteria for sustainable, including green, development projects — the national taxonomy. “Construction of green buildings” appears as a criterion in its own right. The bridge to money: meeting the taxonomy opens green financing instruments. Adding a territorial criterion there is a separate and possibly faster task than a new standard.

п. 21 ст. 381 НК РФ

Property tax relief for buildings of a high energy efficiency class. The one financial incentive in this field that works today. It shows the form in which a territorial indicator could acquire economic weight. Economic estimates — the construction cost premium and payback periods — are left out of this reading: the available figures come from trade press rather than from a methodology, and until we compute our own they are not used in the programme's documents.

Where the boundary runs

On the left, what already carries measurable requirements and a rating. On the right, what no document in force sets any requirement for. The split falls exactly along the edge of the object.

Regulated

The multi-apartment building — 58 criteria, mandatory and voluntary, on a three-step rating. The individual house — 45 criteria across eight categories. Individual greening techniques: roofs and vertical structures. The energy efficiency class of a building, with a route to tax relief. The procedure by which a municipality drafts its improvement rules.

Not regulated

The quarter and the residential district as a unit of green assessment. Connectivity of green areas: where the framework is severed by an arterial road, railway tracks or a fence. Access to nature measured along the street network rather than as a straight line on the map. The thermal regime of a block and its canopy cover as verifiable quantities. Confirmation of the result achieved, in use, after one year and after three. A building can be awarded Gold while standing in

a block without a single tree and with no walkable route to a park. The reverse holds too: a block with an excellent green framework is made of buildings without a single certificate. While the unit of assessment remains the building, both cases are equally invisible to the regulator.

The second gap: the certificate stops at commissioning

The rating is awarded on the design documents and confirmed when the building is commissioned. What happens to it three years later is checked by nobody and by nothing. An indicator nobody re-measures degrades — that is not a hypothesis but an observable property of any reporting system: the moment measurement stops, the report begins describing not the object but the intentions of whoever is reporting. A ready answer exists and requires no new procedure. An energy efficiency class is awarded on the results of a survey — on fact, not on design. The same principle, a repeat measurement by the same method and in the same season, carries directly over to territorial indicators.

What the standard would cover

The proposal is a standard for a territorial unit — a quarter or a residential group — on a scale compatible with the rating of the building standard in force. Object and territory have to read in one coordinate system; otherwise a developer ends up with two incomparable documents and quite reasonably treats the second as surplus. The condition without which the standard will not clear a technical committee: everything it requires to be measured must be measurable independently of whoever is being measured. A criterion computed by the developer about the developer is dismissed by the first question asked — and rightly so.

Computable from open data

The share of residents within a 300-metre walk of a green area — along the street network, not as a straight line on the map. Framework connectivity: where green areas are joined by a walkable route and where they are severed. Canopy cover and land surface temperature — from satellite imagery, always with the acquisition date. Barriers: railway tracks, arterial roads, industrial sites.

Requires the data holder

Species composition, age and condition of plantings — available only from a municipal inventory. Which body holds each plot on its balance sheet, and the actual cost of maintaining it. Stormwater drainage: routes, discharge points and stretches that overflow. Comprehensive redevelopment plans not yet released publicly. The split survives into the text of the standard itself. Criteria in the left column become mandatory at once — anyone can re-check them from the same sources. Criteria on the right stay in the voluntary part until access to the data is secured in regulation: otherwise the standard would be unworkable in exactly those municipalities that never ran an inventory, and that would not be their fault.

Doesn't this already exist abroad?

The objection comes up before any other, so it is answered first. Territorial schemes abroad do exist — and reading how they are built works for the proposal rather than against it.

BREEAM Communities

The British scheme for assessing sustainability in masterplanning. Five categories — governance, social and economic wellbeing, resources and energy, land use and ecology, transport and movement — some forty criteria in all, on a scale from Pass to Outstanding. Masterplanning of new communities and regeneration projects. The assessment is carried out by a licensed assessor engaged by the client.

LEED for Cities and Communities

The American scheme, split in two: Cities for existing municipalities with a governing body, Communities for new developments at the planning and design stage. Version 5 went through public comment during 2026. Either a whole city or a new project. The existing built block as a unit of assessment falls between the two.

DGNB

The German system for districts. Alongside the established scheme for new development, a separate one for existing districts arrived in July 2026: fifteen criteria, the heaviest weight on climate and energy, trialled on seven pilot projects. The first of the three to reach the existing district — and it did so only just, in 2026.

What follows from this

First, the claim that the West settled this long ago is factually wrong: international practice reached the existing district in 2026, at the same time as we did. Second, and more importantly, the German colleagues named on seven pilots exactly the obstacles set out in the right-hand column above — heterogeneous ownership, gaps in the data, and the sheer variation in the condition of the stock. A diagnosis arrived at independently and matching ours is an argument, not a coincidence. The decisive difference, though, is not in the criteria but in the class of instrument. All three schemes are voluntary market certification: the assessment is made by an assessor the client engages, and the result exists exactly insofar as the client paid for it. What is proposed here is a norm whose mandatory part is computed by an outsider from open data — with no assessor, no contract and nobody's permission.

Three routes

The routes run in parallel and feed one another: the academic one lends legitimacy to the normative one, the normative one gives the legislative one a subject, and the legislative one returns practical significance to the academic one.

Academic

A dissertation and publications in peer-reviewed journals. The slowest route and the most durable: it is the only one that does not depend on a change in a committee's membership or an agency's priorities. Years. Publications come early; the defence comes after everything else.

Normative

An organisational standard first — it makes the method legally applicable on the pilot straight away and doubles as a draft of the future national document. Then a proposal into the national standardisation programme through the relevant technical committee. Organisational standard, about a year. National standard, two to three years from inclusion in the programme.

Legislative

The most visible and the most hazardous. It is worth entering only with a pilot already computed: without numbers the discussion collapses into an exchange of declarations, which is not won by whoever happens to be right. First presentation after the pilot. Beyond that, outside the programme's control. The legislative route deserves plain speaking, so as not to raise false expectations. A research organisation is not empowered to introduce legislation: bills are introduced by deputies, parliamentary factions, the government and regional legislatures. The programme's job is to prepare the concept, the case and the text so that they can be picked up and introduced. Beyond that, amending secondary legislation — adding a territorial criterion to the sustainable development taxonomy, for instance — can deliver an effect sooner and more cheaply than a new law.

What the programme does not do

Listed here rather than in a footnote: a programme without stated limits reads as a promise, and a promise cannot be checked. It does not publish a composite score before the data. A figure of the form “this block scores so many out of a hundred” rests on hand-picked weights and is dismissed by the first question about where it came from. Such a score comes last, after the pilot. It does not widen its subject. The topic attracts transport, waste, carbon footprint and social infrastructure; every addition pushes the result back a year. The subject is fixed: the green framework of a block and its verifiable characteristics. It does not replace the standards in force or compete with them. The territorial level is built on top of the object level, not instead of it. It does not promise deadlines it does not control. The development cycle of a national standard and the cycle of a dissertation defence both lie beyond the horizon of any working plan, and pretending otherwise builds failure into the very first presentation.

Why this matters

A green standard for the building already works, and that is a good thing. But nobody lives in a building — they live in a block: they step out of the entrance and either reach the forest or run into an arterial road. That part of their life is described by no regulatory document today, which

is exactly why it is not designed, not financed and not checked. While the unit of green assessment remains the building, the quality of the space between buildings will not improve by a single certificate. The programme's task is to make the block a subject of regulation, and its characteristics quantities an outsider can re-measure.

Explanatory note for the standardisation proposal

A draft of the document submitted with a proposal to include the topic in the national standardisation programme: the object of standardisation, the justification, links to the standards in force, and a review of foreign practice. The section on economic effect is deliberately left blank — the data required is not openly available, and the note states which data. Eight pages, in Russian.

The territory no one regulates

The courtyard of a residential building. The building behind the photographer is governed by a standard: heat, light, energy performance. What lies in front of it is governed by no one — not the number of trees, not accessibility, not whether any of it will still be green in three years.1 / 2 Юрий Д.К.CC BY 4.0

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/green-quarter (updated 2026-08-24).

Regulatory and official documents

1. ГОСТ 35329-2026
2. ГОСТ Р 70346-2022
3. ГОСТ Р 70387-2022
4. ГОСТ Р 71332-2024
5. ГОСТ Р 71392-2024

International schemes and organisations

1. BREEAM Communities
2. DGNB
3. LEED for Cities

External links

1. CC BY 4.0 — https://commons.wikimedia.org/wiki/File:Moscow_-_2025_-_%D0%A1ourtyard_of_the_residential_building_of_the_Electrode_plant.jpg

CHAPTER 20

Join us: who we are looking for

The project needs a standardisation lawyer, an ecologist, a power engineer, a GIS specialist and a site for a pilot. Concrete tasks, not an invitation to a community.

Who we are looking for, and what we are working on The project has reached the point where it cannot go further alone — not for lack of hands, but for lack of expertise we do not have: regulatory, ecological, electrical. Below is what is needed, stated as tasks rather than job titles. If your field is on the list, it will take you a minute to see whether you have something to say. On money, up front: this is participation in a project, not a contract — the work is unpaid. Better said here than after an exchange of letters.

What is needed

Lawyer in standardisation and technical regulation

Prepare a submission to the national standardisation programme through Technical Committee 465: object of standardisation, purpose, justification. The window is annual; missing it costs a year.

Personal data specialist

Work out what obligations actually arise for the project when it collects feedback, and for any user account: operator duties, notification, retention. Before anything is launched, not after.

Ecologist or dendrologist

Check the calculation part of the method: how a territory's green framework is counted, what the unit is, and where the methodology breaks on a real block.

Urban planner with academic experience

The dissertation track under speciality 2.1.13. What is needed is not advice or a review, but someone prepared to supervise the work.

Power engineer, grid connection specialist

Free capacity at substations. Disclosure is mandatory, yet nobody publishes it in machine-readable form — on our map that field is empty, and only industry practice can fill it.

GIS and open data specialist

The map covers 257 regions, assembled from open sources. We need a quality review: where the data lies, how to check it, and what could be pulled from official registers.

A municipality or a landholder

A site for a pilot. The method calculates and the programme fixes what has been calculated, but nothing has yet been measured on real ground — and that is the weakest point of the whole construction.

What has been done so far

Before inviting anyone, an honest statement of where things stand. A connection map has been assembled across 257 regions: 29,861 substations, 22,046 gas objects, 262,492 settlements. The biophilic transformation method and the green quarter standard programme are published, with their regulatory basis verified. What appeared and when is in the changelog, by date.

How to write

Telegram, the project chat. One message, no preamble: who you are, which of the tasks above is yours, and what you think about it — including "you are wrong here". A substantive objection is more useful than agreement.

What we do not promise

A research organisation is not entitled to introduce legislation: bills are introduced by deputies, parliamentary factions, the Government, and regional legislatures. Our task is to prepare a concept and a text that can be picked up and introduced. We will not promise to "defend it in the State Duma" as something we do ourselves. Everything done here is published openly, weak points included.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/join (updated 2026-08-27).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

APPENDIX

GOSPLAN 2.0 changelog

Appendix · https://gosplan2.ru/en/changelog

Development log by date: sections, data, fixes. Current version 2.2, 27 August 2026.

What appeared, and when The project changes faster than anything gets published about it. This page shows what changed and on which day, so that "work is under way" need not be taken on trust. - — Data collection for the connection map finished: 257 regions, 15 countries, 262,492 settlements. - — The connection map and the Green Quarter were added to the top menu, which was rebuilt so the new sections fit on a phone. - — Links between sections: architecture, method and programme now lead to the map, and the map leads back to architecture. - — Long headings no longer run past the edge of a phone screen. - — The nomenclature of green framework indicators was published: nine quantities with units, data sources, and a statement of which cannot be computed today. - — A new section on the cost of inaction: a method for calculating what the absence of a standard costs. - — Photographs with a slider appeared in the sections; every image names its author and licence. - — A new section opened on Norilsk: why a dome over an Arctic city is incompatible with permafrost, and what to build instead. - — A new section opened: what is digitised and what is not — a register of the state of territorial planning data. - — A new site mark: at 16 px the previous icon turned into a dark smudge. - — The project now has a version number and this page. - — The Connection Map section opened: gas infrastructure and substations of 35 kV and above. - — The map basemap was replaced; the previous one stopped serving tiles without a key. - — The System Architecture section opened: layers, loops, and what actually gets signed. - — The Green Quarter Standard programme was published, on the gap between green standards for a building and the territory between buildings. - — A light theme and a theme switch were added. - — The red was brought up to a readable contrast ratio. - — The biophilic transformation method became its own section, with the calculation part spelled out. - — The Selo 2.0 section opened. - — The site moved to a new server. - — Search engines are now notified about new pages.

On the completeness of these records

The log runs by date, not by version number. Before 27 August 2026 the project was not versioned: a number existed as a caption on a single page and was attached to nothing. Assigning numbers retroactively would pass a reconstruction off as a record, so a number appears only where one was genuinely assigned. Entries begin in August 2026; earlier history was not kept in any verifiable form.

Sources and documents referred to in this chapter

Chapter text: https://gosplan2.ru/en/changelog (updated 2026-09-05).

The chapter text cites no external sources or regulatory documents: it is an authored section that rests on the other chapters of the book and on the open data described in the text.

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