

INVESTMENT MEMORANDUM · WORKING DRAFT

SELO 2.0

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

Community Hub · Energy Hub · Housing Hub · Digital Twin · RuralTech

Analytical platform **gosplan2.ru**

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On the status of this document. This is a working draft of an investment and urban-planning memorandum. It is not an offer, not investment advice and not design documentation. Every financial figure in the text is a **model calculation on a hypothetical typical settlement**, presented to show the structure of the economics rather than to support an investment decision. Its validity is confirmed or refuted only by a survey of a specific territory and by pilot delivery. Each calculation block is accompanied by the assumptions that drive it; change the assumptions and the result changes.

1. Executive summary: one page for the governor

The proposition. Every district has a building that was once the centre of settlement life and today runs at a few per cent of its capacity — the former house of culture. SELO 2.0 proposes not to repair it but to redefine its function: to turn it into a multifunctional community hub while simultaneously solving energy, housing and digital governance around it. The object of the programme becomes not the building but the settlement as a whole.

existing infrastructure capital + a new economy + a contemporary social environment
+ energy independence + digital governance + new housing = **a new rural settlement**

Why this is not another repair programme

- **It does not start from zero.** Land, building, connected electrical capacity, roads, a square and public memory already exist, and they sit in the centre of the settlement. That removes the most expensive part of any development project — assembling the site.
- **It is not counted in square metres.** The key indicator is not cost per metre but functional utilisation: how many hours a day the space actually works, and how much public and economic function each invested rouble creates.
- **Power comes before housing.** First capacity, networks, generation and reserve — only then new construction. The reverse order is the standard reason rural housing projects stall halfway.
- **The result is measured.** A composite settlement vitality index is recorded before the project and five years on; part of the funding is tied to the result achieved rather than to the budget spent.

What the region gets

1 TERRITORY OPERATOR	3 CORES: CENTRE, POWER, HOUSING	12 FUNCTIONAL CLUSTERS	24–36 MONTHS PER PILOT
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A ready development model that does not have to be reinvented for every settlement: typology, digital survey, a design assembled from a modular catalogue, a financing scheme, a KPI set and a monitoring system. Plus an investment-ready site that private capital can enter without negotiating separately with six institutions.

What the investor gets

Not “a 2,000 m² building” but the investment perimeter of a territory: a community centre, an energy core, a residential quarter, local processing, a tourism function and a work hub — tied into

one calculation perimeter for which returns are computed as a whole. The state meanwhile closes the risks that private capital cannot price: land, networks, grid connection and the regulatory framework.

What is required of the region at the first step

1. Choose one territory in category S2 (“growth point”) and one building.
2. Run a digital survey of the building and the settlement (2–3 months).
3. Approve a development scenario from four or five costed options.
4. Appoint a territory operator and assign it the land and the building.

AN HONEST CAVEAT

No figure in this document is the proven economics of the programme. Private capital leverage, payback and population growth are target values built on modelling assumptions. Their purpose is to show what the economics consist of and which parameters move them most. Verification happens on the pilot — which is precisely why the first phase is designed as a measurement experiment rather than as mass construction.

2. The problem: two balance sheets that do not meet

A small settlement in Russia today is described by two balance sheets that do not reconcile. The first — demographic and economic — is steadily negative. The second — material — is unexpectedly positive. The whole programme is an attempt to bring them together.

2.1. The negative balance

The list of problems is well known and barely varies from region to region: a shrinking and ageing population, young people leaving after school, degrading public infrastructure, few jobs outside agriculture, worn-out housing stock and utility networks. To these is added a less visible but budget-critical factor — the rising per-capita cost of maintaining the territory: the fewer people there are per kilometre of network and per square metre of social facility, the more each remaining resident costs.

That last point explains why the problem is not solved by simply increasing subsidies. A transfer closes the gap in the current year but does not change the denominator. While the density of useful infrastructure use keeps falling, any support has to be repeated annually and in growing volume.

2.2. The positive balance

At the same time, those territories hold significant material capital created in earlier decades and not reproducible today at a sensible price:

Asset	What usually happens to it	What makes it valuable here
The building	Partial use, failing roof, 1970s engineering	Volume, hall heights, central location, sound structure
The land around it	Wasteland, informal parking	A ready site for a square, a park, sport and new development
Connected capacity	20–40 % of the limit in use	An existing grid connection is the scarcest development resource
Roads and access	Need repair, but exist	Alignment and right of way already established
The public square	Used a few times a year	A ready public space with an established habit of visiting
School, clinic, library	Operate separately, duplicating functions	A basis for merging flows and sharing premises

The key observation: this capital does not merely exist — it is **concentrated in one place**. Unlike urban fabric, where public functions are dispersed, in a rural settlement almost everything historically gravitated to the centre. This is a rare planning situation in which a single decision can change the structure of an entire settlement.

2.3. Why functional utilisation is the decisive metric

A typical rural house of culture of around 2,000 m² is in fact in use for a few hours a week: a rehearsal, a club, two or three events a month, a handful of festivals a year. Expressed as a share of the building's available time, that is a few per cent. Heating, lighting, security, roof and taxes, meanwhile, are paid for one hundred per cent of the time.

Maintenance cost does not depend on utilisation. Usefulness depends on it entirely.

Hence the central economic conclusion of this memorandum: **reconstruction pays off not through savings on maintenance but through the growth of functional utilisation**. A building working from morning to evening seven days a week for twelve different audiences produces incomparably more public and economic function for almost the same fixed cost. That is why the programme is written as a list of functions rather than a list of construction works.

2.4. Why point solutions fail

Recent practice offers three recurring failure scenarios, each of which is answered in the design of the programme:

SCENARIO 1 — “REPAIRED AND CLOSED”

The building is restored without changing its function. Within a year it turns out that the refurbished facility costs more to run than the old one while attendance is unchanged. Within three years it returns to its original state. **The programme's answer:** funding is tied to functional utilisation, not to completion of works.

SCENARIO 2 — “HOUSING BUILT WITHOUT NETWORKS”

Plots are subdivided and sold, houses are built, and only then does it emerge that capacity, water or roads are insufficient. Retrofitting infrastructure costs more than building it first and falls on the budget. **The programme's answer:** the ENERGY FIRST principle — capacity, networks, generation and reserve are designed before housing goes to market.

SCENARIO 3 — “BUILT BEAUTIFULLY, NOBODY TO RUN IT”

An equipped space appears — a workshop, a coworking floor, a media studio — but there is nobody able and willing to run it. The equipment sits in a locked room. **The programme's answer:** the staffing contour (who runs each cluster and on what money) is part of the design on equal terms with the structure.

2.5. Stating the task

The task is framed not as “save the village” but as **making the settlement a competitive place to live**. The difference is practical: in the first framing success is measured by the volume of help delivered, in the second by the number of people who chose this place while having an alternative. Every subsequent section follows the second framing.

3. Market and scale: how many buildings, how many people, how much money

Three quantities set the scale: the number of candidate buildings, the population served, and the aggregate industrial demand the programme creates. Below is an order-of-magnitude calculation with its assumptions stated openly.

ASSUMPTIONS OF THIS SECTION

These are order-of-magnitude estimates based on typical parameters, not the result of a full inventory. Precise national figures can only come from a single register of unused social assets, proposed separately in section 13. Until such a register exists, all market figures should be treated as indicative.

3.1. The perimeter of candidate buildings

The programme targets settlements where three conditions hold simultaneously: a permanent public building of 500 m² or more, a resident population, and a transport link to the district centre. Such settlements fall into categories S1–S3 of the typology in appendix A.

Phase	Settlements	Regions	Purpose of the phase
Phase I	100	10–20	Piloting, measurement, drafting the standard
Phase II	1,000	40–60	Standardisation, catalogue of solutions, supply chain
Phase III	5,000	all	A national network of community centres

3.2. Population served

A community centre serves not only its own settlement but the neighbouring ones. At a typical catchment of 3,000–8,000 people, coverage looks as follows:

Phase	Centres	Catchment per centre	Aggregate coverage
Phase I	100	3–8k people	0.3–0.8m people
Phase II	1,000	3–8k people	3–8m people
Phase III	5,000	3–8k people	15–40m people

Method: number of centres × average catchment. The range reflects the spread in settlement density between European Russia, Siberia and the Far East. Overlap between the catchments of neighbouring centres is not netted out, so the upper bound is overstated.

3.3. Industrial demand

For the federal level another effect matters more. One community centre is not only construction work but a repeating set of equipment: furniture, ventilation and climate, electrical equipment, lighting, low-voltage systems and IT, sports equipment, basic medical equipment, workshop equipment, kitchen equipment, security systems.

When there are ten such buildings, this is a scattering of procurements. When there are a thousand and they are assembled from a single modular catalogue, it becomes **predictable multi-year demand with a known specification** — the condition under which a domestic manufacturer has reason to set up a line for that specification. Standardising the catalogue matters more here than the volume of money: it converts a random flow of tenders into a plannable production schedule.

PRACTICAL IMPLICATION

The economic meaning of phase II is not a thousand refurbished buildings but the formation of a domestic supply chain for a standard public facility. That effect cannot be achieved by isolated regional programmes, and it is what justifies federal status.

3.4. The second market: “city → village” migration

Historically the flow went one way. Durable remote employment changed the condition: some urban professionals can live outside the metropolis without losing income or profession. But relocation happens only when six factors are present at once — house, internet, work, school, healthcare, public life. The absence of any one of them stops the decision.

The programme addresses that bundle as a whole, and this is what distinguishes it from selling plots. The product an urban resident receives is not “a 120 m² house” but “a house plus infrastructure plus a community centre plus a workplace plus a school plus an environment”. The size of this market has not been measured; measuring it is one of the tasks of the pilot phase (see section 16, risk R4).

4. The concept: from house of culture to the core of the settlement

The substantive core of the programme is a change in the type of object. What needs to be designed is not a club, a library, a public services office, a coworking floor and a gym separately, but a **community centre of the settlement**, inside which the mix of functions is selected for the specific territory.

4.1. What changes

Parameter	Culture house 1.0	Community hub
Type of object	A cultural institution	A multifunctional community centre
Audience	Club members and spectators	All age groups, daily
Mode	Event-driven, by schedule	Continuous, morning to evening
Funding source	Institutional budget	Budget + rent + services + amenities + grants
Key indicator	Number of events	Functional utilisation and function created
Relation to the economy	A cost line	Infrastructure for employment and enterprise
Relation to housing	None	The anchor of housing development around it

Culture is not displaced in the process — it returns. Theatre, music, cinema, exhibitions, festivals, local history and crafts stay in the building but cease to be its only content. Experience points to an inverse relationship: the more daily functions a building carries, the higher the attendance at cultural events, because the audience is already inside.

4.2. Twelve functional clusters

The interior is described not by rooms but by clusters. Each has its own audience, operating hours, economics and named lead. Basic clusters belong in every centre; optional ones are added depending on the typology of the territory.

No.	Cluster	Status	Economic role
1	Public living room	Basic	Generates footfall; café and local market provide operating income
2	Education	Basic	Paid and grant-funded programmes; retains families with children
3	Rural FabLab	Optional	Production and repair services; a base for micro-enterprise
4	Digital work hub	Basic	Desk rental; the precondition for “city → village” migration
5	Digital health point	Basic	A node of the distributed medical network; relieves the district hospital
6	Children’s hub	Basic	Paid clubs; often the decisive factor in a family’s relocation decision
7	Sport	Basic	Memberships; maximum evening utilisation of premises
8	Culture	Basic	Events, tickets, festival tourism
9	Rural business centre	Optional	SME services; converts intention into a registered business
10	Local manufacturing	Optional	Producer tenants; tax base and jobs
11	The state	Basic	Public services, post, social services; guaranteed daily footfall
12	Tourism	Optional	An external cash flow into the territory

4.3. The sharing principle: one room, four functions

The economics of a small settlement cannot support a dedicated room per function. The structural requirement is therefore transformability: the same space must change purpose over the course of a day.

UNIVERSAL HALL 180 m2	
08:00-13:00	education programmes, school classes
13:00-18:00	coworking, business centre consultations
18:00-20:00	lecture, club, rehearsal
20:00-23:00	cinema, concert, event
utilisation: 15 hours a day instead of 4-6 hours a week	

This calls for specific design decisions: mobile furniture and stackable seating, dividing partitions, separate lighting and sound circuits for each mode, an independent booking system, separate entrances for the morning and evening scenarios, storage adjacent to the hall. All of it is cheap at design stage and near-impossible after handover — which is why it belongs in the mandatory part of the standard.

4.4. The staffing contour

Failure scenario three (section 2.4) is removed only one way: the person responsible for each cluster is named before works begin, together with the source of their funding. The form of the answer can vary — a staff member, a resident tenant, a partner organisation, a contracted teacher — but there must be no blank lines in that table when construction starts.

DESIGN RULE

A cluster with no named lead and no funding source for three years ahead is dropped from the design and its floor area reassigned. An equipped room without a person is not a deferred opportunity; it is frozen capital and a future cost line.

5. The architectural model and four types of community hub

A programme at this scale is impossible without standardisation, but standardisation must not mean identical boxes. The answer is a modular catalogue: one structural and engineering system plus regional architectural identity.

5.1. The “old outside, new inside” principle

The existing volume is preserved: scale, character, brick, concrete, historic façade elements, the recognisable silhouette. A contrasting contemporary layer is added — glass, timber, metal, greenery, daylight, modern engineering systems. A legible dialogue emerges between the heavy monumental volume and a light transparent extension.

There are three grounds for this approach. Economic: keeping the load-bearing structure is cheaper than demolition and new build, and the existing grid connection is retained automatically. Social: residents do not lose a recognisable place. Reputational: the result reads as renewal rather than replacement — which matters greatly in territories where the loss of familiar landmarks is felt acutely.

5.2. Four size types

Type	Floor area	Catchment	Base composition	Typical territory
HUB-500	400–700 m ²	0.5–1.5k	Living room, public services, health point, children’s room, small hall	S1: stable settlement without a housing contour
HUB-1000	800–1,400 m ²	1.5–3k	+ education, sport, coworking	S1–S2: settlement with growth potential
HUB-2000	1,800–2,600 m ²	3–8k	+ culture (hall), FabLab, business centre	S2: growth point, the typical former culture house
HUB-5000	4,000–6,000 m ²	8–20k	+ manufacturing, tourism, inter-settlement functions	S3: district anchor centre

The catalogue defines not layouts but **modules**: structural spans, junctions between new and old, service risers, sanitary blocks, entrance groups, ventilation and heating schemes, standard

solutions for the transformable hall, glazed structures. From these the designer assembles a scheme for a specific building — the way different machines are assembled from unified components.

5.3. How the mix of functions is assembled

HUB-2000 - "growth point" variant	HUB-2000 - "tourism territory" variant
BASE (living room, services, health)	BASE (living room, services, health)
+ CULTURE	+ TOURISM
+ EDUCATION	+ CULTURE
+ HEALTH	+ AGTECH
+ WORK	+ WORK
+ SPORT	+ SPORT
+ CHILDREN	+ CHILDREN

The same floor area, the same structural system, the same engineering solutions — a different mix and a different economy. The choice is not arbitrary: it follows from the typology of the territory and the scenario calculation (section 12 and appendix A).

5.4. Regional identity

A single system of solutions does not cancel climatic and cultural specifics. Five basic regional adaptations:

Region	What changes technically	What changes architecturally
The North	Higher thermal resistance, air-lock vestibules, snow retention on roofs, supply ventilation with heat recovery	Compact volume, work with artificial light through the polar night, colour as a wayfinding device
Siberia	Maximum envelope efficiency, heated links between blocks	Enclosed public spaces, winter gardens as an alternative to the street
The South	Passive cooling, shading, natural ventilation	Open galleries, verandas, water and greenery as the primary climate instrument
The Far East	Modularity and assembly logistics, energy autonomy, seismic requirements where applicable	Factory-finished elements, compact erection logistics
The Caucasus	Local materials, insulation, seismic requirements	Local stone, courtyard structure, the public square as a continuation of the building

5.5. Russian Rural Futurism

The architectural task is not to copy the European village, the American suburb, the Scandinavian town or the Chinese village, but to form a recognisable Russian rural language:

Russian scale, regional identity, modern engineering, digital technology. Materials — timber, brick, stone, metal, glass; none of them import-dependent.

A teenager should want to go there. An entrepreneur should want to work there. A governor should want to show it to delegations. An investor should understand its economics. If even one of the four fails, the project has been designed wrongly.

The practical budget implication: architectural quality here is not decoration but a condition for hitting the targets. A building nobody wants to enter produces no functional utilisation, and without utilisation the entire economic model of section 12 does not work.

6. The settlement master plan: 500 metres of life and the biophilic framework

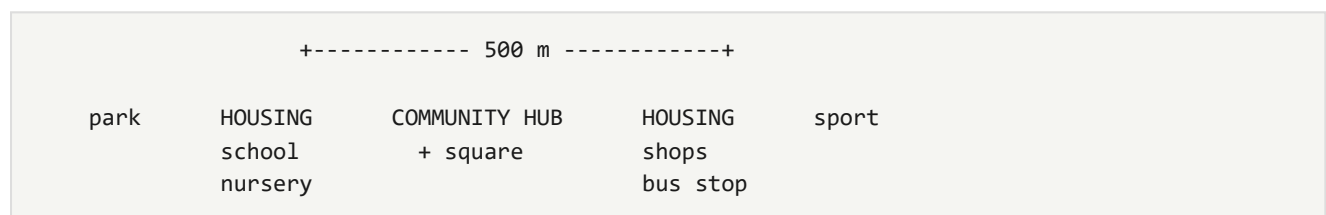
A community hub is not a building but a building plus a square, a park, sport, the street, transport, energy and digital infrastructure. The design document of the programme is therefore not a building project but a settlement master plan centred on the renewed facility.

6.1. The square in front of the centre

The space in front of a former culture house has almost always degraded into a driveway and informal parking. Restoring its status as the settlement's main square is the cheapest part of the programme and one of the most visible: fairs, festivals, a farmers' market, open-air cinema, seasonal and local holidays, sporting events. Parking does not disappear; it moves to the edge of the square.

6.2. The 500-metre rule

The key planning principle of the programme: within five to seven minutes' walk of the centre there should be housing, a school, children's functions, a park, sport, a public transport stop, shops and workplaces.



The radius is not arbitrary: it is the distance a person walks without thinking about it, and the distance a child covers alone. Inside that radius the community centre becomes part of a daily route rather than a place one has to travel to. Outside it, attendance falls sharply and the whole utilisation model stops working.

6.3. The biophilic framework

The programme continues the line of biophilic urbanism at rural scale. Nature here is treated not as leftover landscaping but as engineering infrastructure with measurable function: reducing peak temperatures, absorbing storm runoff, filtering air, attenuating noise, affecting health and property values.

Element	Engineering function	Verifiable standard
Blue-green network	A continuous network of water, forest, fields, parks and green corridors instead of scattered patches; storm runoff management	Network connectivity, share of impermeable surfaces
The 3–30–300 rule	Three trees visible from the window, 30 % canopy cover in the neighbourhood, 300 m to quality green space	Direct measurement on three parameters
Rainwater	Irrigation, technical uses, landscape — wherever technically and legally permitted	Share of runoff retained on site
Street instead of fence	Green streets, visual corridors, shared gardens, children’s routes, pedestrian links	Length of permeable street frontage

The main mistake of new rural construction is turning the territory into asphalt, blank fences and parking. The Russian rural landscape is best treated as a national asset: the task is not to build cottages over it but to place life inside it. This is not an aesthetic preference but the condition of the very competitive advantage for which an urban resident would consider relocating at all.

LINK TO THE ECONOMICS OF SECTION 8

The biophilic framework is not a cost line but an instrument for raising the value of the housing product. A plot in a neighbourhood with a continuous green framework, shared gardens and pedestrian links sells for more than a plot of the same size behind a blank fence along a driveway. The price difference finances the framework itself.

6.4. Transport and connectivity

The master plan fixes three transport requirements: a public transport stop within the 500-metre radius, a safe pedestrian route “housing — school — centre” with lighting and a pavement, and a link to the district centre with a predictable timetable. The last of these is most often the binding constraint and requires a decision at regional rather than settlement level.

7. Energy Hub: why power comes first

Failure scenario two from section 2.4 — housing built without sufficient capacity — is not an accident but a systemic consequence of an order of works in which energy is designed last. The programme reverses that order.

ENERGY FIRST: capacity → networks → generation → reserve → **only then** new housing

7.1. Why this is fundamental

The cost of grid connection and network reconstruction after houses are already built is several times higher than designing with headroom at master-plan stage. Moreover, the capacity constraint is discovered at the moment when the housing has been sold and obligations to buyers have been assumed. Two outcomes follow: the project stops, or unplanned budget spending occurs. Both destroy confidence in the programme across the whole region.

7.2. Composition of the energy core

The renewed community centre becomes not only the largest consumer but the control node of the settlement's energy system. The mix of solutions follows the economics of the specific territory rather than fashion:

Element	Function	When applicable
Capacity reserve	Headroom for the housing contour and manufacturing	Always
Network upgrade	Removing constraints and losses	Always
Efficient building envelope	Cutting base load by 30–50 %	Always — the cheapest kilowatt is the one not consumed
Automation and metering	Load management, peak flattening	Always
Heat pumps	Heating and hot water	Where a suitable low-grade heat source exists
Solar generation	Daytime output	Only where it pays back at the local tariff and insolation
Storage	Peak shaving, reserve	Where tariff spreads are material or reliability is poor
Backup power	Continuity of critical functions	Always for the health point and communications

SELECTION CRITERION

The criterion is cost per kilowatt-hour and reliability, not the presence of panels in the photograph. Solar generation in a region with low insolation and a cheap grid tariff worsens project economics rather than improving them. The energy section of the design must contain a calculation for each element, not a declaration about “green technology”.

7.3. Effect on operating costs

The energy component is the only block of the programme that delivers direct, measurable budget savings. A typical former culture house with a 1970s envelope, single glazing and unregulated heating consumes substantially more on heating and electricity than the same building after envelope insulation, replacement of glazing, installation of weather-compensated control and a switch to LED lighting.

It is precisely this saving that makes round-the-day operation economically possible: without it, rising functional utilisation would mean a proportional rise in utility bills and would hit the institution’s budget ceiling. The magnitude for a specific building is established by an energy audit and recorded in the digital passport (appendix C).

7.4. Energy as the precondition for housing

The practical meaning for an investor is simple: by the time the housing project goes to market, the capacity question is closed, limits are confirmed and the connection point is defined. That removes the principal infrastructure risk of a rural project — the very risk that normally keeps private capital out of such territories.

8. Housing Hub: low-rise housing as a product, not as a land sale

The housing contour is the part of the programme that provides return on investment and makes the structure interesting to a developer. But it works on one condition: what is sold is not a plot but a way of living.

8.1. The difference between two products

Parameter	Selling plots	Rural residential development
What the client buys	Land	Land + infrastructure + environment + services + workplace
Roads and networks	“Coming later”	Ready before sales open
Social function	In the district centre	500 metres away, in the community hub
Speed of occupation	Years, partial build-out	Set by sales pace, not by readiness of the environment
Buyer’s risk	High: it is unknown whether the environment will appear	Low: the environment already exists
Pricing	Competition on price per plot	Competition on quality of environment

The difference is not rhetorical. A plot without an environment competes with hundreds of identical offers and sells at the bottom of the market. A plot in a completed neighbourhood with a working community centre competes with a city flat — that is, it sits in an entirely different price category and addresses a different audience.

8.2. Composition of the neighbourhood

A new rural quarter of 50–300 houses, depending on the size of the settlement, includes: surfaced roads with pavements, street lighting, power, water and wastewater networks, internet, planting and shared gardens, children’s areas, public spaces, and a pedestrian link to the centre. Plus the requirements of the biophilic framework from section 6.3 — above all, no continuous blank fencing along the streets.

8.3. The life cycle as a design principle

The territory is designed around a person’s full life cycle rather than a single age group:

child -> school -> education -> first job -> family -> own house
-> business -> children -> older generation

If a person can complete the whole cycle inside the territory,
the population stabilises without in-migration.

Hence the obligatory presence of the children's and education clusters even in small centres, and a separate requirement for functions serving older residents: medical support, a club, digital literacy, social services, sport, company. The last of these addresses a problem the budget otherwise pays for later and at greater cost — the social isolation of the elderly.

8.4. Who this is sold to

Three distinct audiences with different motives:

- **Local residents** improving their housing within their own settlement. The most predictable demand, but limited in volume.
- **Return migration** — people originally from these places who now work in cities. The presence of a community centre and a school is often the deciding factor.
- **Urban professionals with remote employment** — the largest and least studied segment. Requires all six factors at once (section 3.4) and quality internet first of all.

WHAT MUST BE TESTED ON THE PILOT

Willingness of urban residents to move permanently rather than seasonally must be measured **before** the neighbourhood is designed — by survey, pre-booking, and analysis of actual transactions in comparable locations. Designing three hundred plots against an unverified demand hypothesis is the most expensive mistake available to this programme.

9. RuralTech: the technology layer and the market around the programme

The community centre itself is not a venture asset and should not pretend to be one. But around a network of such centres there emerges an infrastructure on which technology can be deployed and tested faster and more cheaply than anywhere else. That is a separate investment story, addressed to a different kind of capital.

9.1. Segments

Segment	What it solves on the territory	Point of deployment
EnergyTech	Local generation, storage, load management	Energy Hub
AgTech	Precision farming, monitoring, autonomous greenhouses	Manufacturing cluster, FabLab
FoodTech	Small-scale processing, packaging, traceability	Local manufacturing, logistics node
MedTech	Telemedicine, remote diagnostics, monitoring	Digital health point
EdTech	Distributed education, training, retraining	Education cluster
GovTech	Digital settlement management, feedback loops	Rural OS, public services cluster
ConstructionTech	Modular construction, factory readiness	Housing contour, module catalogue
ClimateTech	Energy efficiency, the water cycle, waste handling	Master plan, Energy Hub

9.2. Living Lab: why a village suits technology testing better than a city

A city is too complex a system for a clean experiment: too many simultaneous factors, too costly an error, too long an approval cycle. A settlement of two to three thousand people is a compact system with visible boundaries, in which the full effect of an intervention can be observed: energy, water, transport, housing, education, healthcare, manufacturing and governance within one perimeter.

Hence a practical proposal: instead of launching a new technology nationwide, test it in 10–20 settlements with a mandatory before-and-after measurement. This is attractive to three parties at once: the developer (a real site and real data), the territory (access to a solution ahead of the market), and the state (a proven technology rather than a procurement based on a presentation).

WHAT EXACTLY GETS TESTED

Heating and storage systems, water treatment and water cycling, energy management, autonomous greenhouses, agricultural robotics, telemedicine protocols, modular structural systems, distributed education solutions. Each with a fixed measurement method and a published result — including negative ones.

9.3. Separating the investment roles

Mixing concrete with venture is the classic error in packaging programmes like this, and it repels both categories of investor. The separation looks as follows:

Asset	Type of capital	Nature of the return
Community Hub	Public + institutional	Public effect and lower budget costs; not a venture asset
Energy Hub	Infrastructure	Savings and tariff; a long predictable stream
Housing contour	Development	Sale of the housing product
Manufacturing and services	Private, SME	Operating profit of the residents
RuralTech solutions	Venture	Scaling a product across a network of territories

For a venture fund the value of the programme lies not in the buildings but elsewhere: a network of a thousand comparable territories with known infrastructure, common standards and a working measurement system is a ready distribution channel for a product that would otherwise have to be sold settlement by settlement.

10. Arisweb Rural OS: the digital platform of the territory

The principle of the digital component: neither “let us build an app” nor “let us put up a building”, but the link between the two — a digital platform that manages physical infrastructure and is accountable for the result being measured.

10.1. Eight modules

No.	Module	Purpose
1	GIS	Map of the territory: boundaries, land, buildings, networks, catchments
2	Digital Twin	A connected model of the settlement: physical and economic layers in one structure
3	Asset Management	Buildings and networks: condition, wear, running cost, works schedule
4	Investment	The territory’s investment projects, their status and parameters
5	AI Planning	Scenario modelling of development and comparison of options
6	Community	Residents, services, centre schedule, bookings, feedback
7	Marketplace	Local producers and their digital storefronts
8	Monitoring	Delivery control and KPI measurement, including the link to payment by result

10.2. Layers of the digital twin

The settlement model combines fifteen layers: population, land, buildings, roads, energy, water, wastewater, connectivity, healthcare, education, jobs, enterprises, housing, ecology, investment projects. Value comes not from the presence of layers but from the links between them: a change in the housing layer automatically recalculates load in the energy layer, demand in the education layer and flows in the road layer.

10.3. Four interfaces on one dataset

Role	Interface	The user’s main question
Governor	Territory Dashboard	What is happening to the territory and where is it heading
Investor	Investment Dashboard	What does entry cost, what comes out, over what period
Municipality	Public Value	What residents got and what it costs to run
Resident	Community App	What is open near me and how do I use it

10.4. The territory marketplace and the physical logistics node

A separate story with fast returns. 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 becomes the physical logistics node: intake, packaging, labelling, storage, pickup, dispatch.

This is the point where the digital economy connects to a specific piece of land. For the local producer it solves the real problem, which is not production but market access and logistics. For the centre it creates an additional stream of operating income and daily footfall.

10.5. Launch sequence

1. **Digital passport of the settlement** — map, buildings, land, population, infrastructure, energy, projects. This is the MVP: it is useful in itself, before any other module exists.
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, its status and its achieved indicators.

A HARD CONSTRAINT

Selling the platform before the first delivered territory makes no sense, and this memorandum does not offer it as a standalone product. The system has to grow out of a real pilot: first one genuine SELO 2.0 with before-and-after measurement, and only then replication. The reverse order is a well-known reason why state digital platforms end up full of data that nobody uses.

11. Fund structure and four layers of capital

Dividing the roles between funding sources matters more than the total size of the budget. The state takes on what private capital cannot close, and private capital then receives a prepared territory at materially lower risk.

11.1. Four layers

Layer	What it funds	What it receives in return
State	Roads, utility networks, social infrastructure, base reconstruction, public realm, the regulatory framework	Demographic and tax effect, lower per-capita cost of maintaining the territory
Municipal	Land, existing buildings, governance, choice of site and local partners	A working asset instead of a liability, new residents and a tax base
Private	Housing, manufacturing, cafés and services, tourism, coworking, commercial property	Operating profit and realisation of the housing product
Institutional	Infrastructure funds, banks, regional funds, impact investors, venture in the technology layer	A long predictable stream and a measurable social effect

11.2. Target leverage

Target: **1 rouble of public money attracts 1–3 roubles of private capital**

This is a goal, not proven economics. Leverage depends critically on the typology of the territory: on S3 (“anchor centre”) it may exceed the upper bound, on S1 it may fall below the lower one, and on S0 private capital does not come at all and should not be expected to. The task of the pilot phase is to obtain the actual distribution of leverage by territory type, so that phase II is planned on data rather than expectation.

11.3. The territorial development corporation

The key institutional element is a single territory operator at regional or municipal level, managing land, infrastructure, the community centre, housing and the pipeline of investment projects.

WITHOUT AN OPERATOR	WITH AN OPERATOR
investor -> administration -> grid operator -> water utility -> land management -> transport -> social facilities -> construction supervision	investor -> ONE STOP TERRITORY (land, capacity, water, logistics, labour, incentives, housing for staff, connection cost)
6-8 independent negotiations	1 entry point, 1 response deadline

The economic meaning is a reduction in the transaction cost of entry. For a project in a small settlement these costs are often comparable to the cost of the project itself, and it is they — rather than returns — that explain the absence of private interest in such territories.

11.4. The difference from classic PPP

Classic PPP normally starts from a finished object: there is a building or a design for one, and a partner is sought. SELO 2.0 starts from a development strategy for the territory, within which the building is one element. The investor enters a perimeter where connection, land and infrastructure risk have already been removed and where the mix of functions is supported by calculation rather than aspiration.

A FORMULATION FOR THE INVESTMENT COMMITTEE

The state creates not a building but a **risk platform**: it closes the positions where a private discount rate makes the project unviable. Private capital then works on a prepared site at a return that is normal for it. This is cheaper for the budget than subsidising the return on the project as a whole.

12. CAPEX and OPEX: model calculations for four types

STATUS OF THE FIGURES IN THIS SECTION

Everything below is a **model calculation on a hypothetical typical settlement**, built on aggregated unit rates. It shows the structure of costs and the relative weight of each line, but it is not a cost estimate. The normal error of such an estimate at pre-design stage is $\pm 40\%$, and regional variation in construction costs between European Russia and the Far East widens it further. Any investment decision is made on the basis of a survey of the specific building.

12.1. The model territory

Settlement population	2,500 people
Catchment of the centre	~6,000 people including neighbouring settlements
Existing building	2,200 m ² , built 1976, structure satisfactory
Land around the building	1.4 ha
Existing electrical capacity	120 kW; 250 kW required
Housing contour	150 plots
Typology	S2 — growth point

12.2. CAPEX structure

Line	Range, RUB m	Capital layer	Comment
Building reconstruction	180–230	State	Structure, envelope, roof, full replacement of services
Equipment and furniture	25–40	State + private	FabLab and health block sit at the upper end
Square and public realm	30–50	State	0.6 ha including lighting and street furniture
Energy Hub	40–70	Infrastructure	Capacity, networks, automation, reserve
External networks for the quarter	60–120	State	Power, water, wastewater, communications
Quarter: roads and internal networks	90–150	State + private	150 plots, roads, pavements, lighting, planting
Public and infrastructure perimeter	425–660		Excluding the houses themselves
Housing construction	private	Development	Determined by the product and the sales pace

12.3. What drives the spread

- **Condition of the load-bearing structure.** The difference between “needs strengthening” and “needs replacement” changes the cost of reconstruction several times over and is revealed only by survey.
- **Region and logistics.** Distance from the contractor’s base and the cost of delivering materials is the second most significant variable.
- **Condition of the networks.** Whether spare capacity exists at the substation or it must be rebuilt is a factor capable of doubling the energy component.
- **Mix of clusters.** FabLab, the medical block and professional hall audio are the most expensive equipment items.

12.4. The operating model of the centre

Maximum honesty is required here, because this is exactly the point at which programmes of this kind usually lose credibility. **A community hub is not a self-financing commercial facility and should not be one.** It is public infrastructure with partial cost recovery.

Source of operating income	Nature
Coworking desk rental	Recurring; grows with the number of remote workers
Memberships: sport, clubs, children's programmes	Recurring, seasonal
Café and local market	Recurring; depends on footfall
Space rented by residents (manufacturing, services, business services)	Recurring, long-term agreements
FabLab and logistics node services	Variable
Events, tickets, hall hire	Variable
Budget funding of core functions (public services, health point, culture, library)	Permanent — these functions are funded today too, but in separate buildings
Grants and targeted programmes	One-off

THE KEY ARGUMENT FOR THE BUDGET

The correct comparison is not “the centre versus nothing” but “**one centre versus several separately maintained buildings**”. Today the culture house, the library, the gym, the public services office and the health point are each heated, lit, guarded and repaired separately, each at low utilisation. Merging the flows into one building with an efficient envelope reduces total fixed costs, while rising utilisation increases own revenue. The budget burden per service delivered falls, even if absolute spending on the building rises.

12.5. What the pilot phase must establish

1. Actual reconstruction cost by building type and region — to replace the model ranges with real ones.
2. The share of own revenue in the centre's operating budget by the end of its second year.
3. Actual private capital leverage for typologies S1, S2 and S3.
4. Real functional utilisation of premises by hour — the metric everything else is built for.
5. The rate of take-up in the housing contour and the profile of the buyer.

13. The PPP mechanism and the legal contour

This section describes directions rather than finished legal structures: the specific scheme for each territory depends on the status of the building, the form of ownership and regional practice. Below is the contour of issues to be resolved and a set of proposed regulatory changes.

13.1. Issues that must be closed legally

Issue	Substance
Status of the object	A multifunctional community centre is not described as a distinct type of facility: it is not a club, not a library, not a public services office and not a sports facility, but all of them at once. This complicates registration, permitted-use classification and the allocation of operating responsibility
Mixed use	Budget-funded functions and commercial tenants share one building — a transparent method of dividing areas, costs and income is required
Transfer to an operator	A mechanism for assigning municipal property to a territorial development corporation with investment obligations
Integrity of the site	The bundle “building + surrounding land + housing contour” must be formalised as a single subject, otherwise it fragments into uncoordinated procedures
Payment by result	Tying part of the funding to achieved indicators requires the measurement method and verification procedure to be established in law

13.2. Proposed package of regulatory initiatives

1. **A legal definition** of the multifunctional community centre of a settlement as a distinct type of facility, with a description of the permissible mix of functions.
2. **A federal standard** for community hubs: modular catalogue, requirements for transformability, energy efficiency, accessibility and the biophilic framework.
3. **The digital passport** as a mandatory document without which a building is not admitted to the programme — with a single data structure.
4. **A single register of unused social assets** — the basis for assessing real scale and for site selection.
5. **Transfer mechanisms**: concession, PPP agreement, lease with investment obligations, transfer to a territory operator.
6. **A blended finance mechanism** allowing public and private funds to coexist in one facility with a transparent division of the result.
7. **A special regime for pilot territories** — shortened approval timelines and the right to depart from individual standard requirements where equivalence of the solution is

demonstrated.

13.3. Fit with the existing framework

The programme does not require a new state policy to be created. It fits into directions already in force: the Spatial Development Strategy to 2030 with a forecast to 2036, and its implementation plan approved by Government Order No. 2149-r of 11 August 2025, set the orientation towards the territorial framework and anchor settlements; the state programme for integrated rural development already covers construction and reconstruction of roads to socially significant facilities and to production and processing sites.

Accordingly, SELO 2.0 is best positioned as an **instrument for delivering** existing decisions rather than as a bid for a new programme from scratch. This materially lowers the institutional barrier and shortens the path from concept to pilot.

13.4. Allocation of roles

Level	Area of responsibility
Legislature	The package of seven initiatives in section 13.2
Ministry of Construction	The federal architectural standard and the modular catalogue
Ministry of Agriculture	Integration with integrated rural development
Region	Regional programme, pilot selection, development corporation, investor support
Municipality	Territory, building, land, local partners, operation of the centre
Business	Jobs, manufacturing, housing, services, tourism
Technology operator	Passports, model, analytics, investment showcase, outcome monitoring

14. KPIs: how the result is measured

The main mistake of publicly funded construction is counting cost per square metre. What should be counted is how much public and economic function that metre creates. Below are the five indicators on which the entire measurement system of the programme rests.

14.1. Settlement Vitality Index (SVI)

A composite indicator of ten components: demography, economy, employment, education, healthcare, infrastructure, energy, entrepreneurship, digital access, environmental quality. Measured twice — before the project starts and five years after launch, by a single method across all territories in the programme.

The value of SVI lies not in the number itself but in comparability: it allows the effect of investment to be compared between territories of different typologies and answers the question of where a rouble did more. Without such an indicator, the allocation of funds inevitably reverts to “an equal share for everyone”, which section 2 describes as demonstrably ineffective.

14.2. Functional utilisation

The share of time during which a space is actually in use. This is the metric around which the entire economics of the programme is built: for a typical culture house it is a few per cent, for a working community hub it is several times higher. It is measured from booking schedules and from actual entries, room by room.

14.3. Cost per functional hour

$$\text{cost per functional hour} = \text{total spending on the facility} \div \text{public function actually created}$$

This replaces cost per square metre when comparing options. A building twice as expensive but working four times longer for four times as many audiences is twice as effective — and that is visible only in this metric.

14.4. 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. This indicator makes it possible to compare a rural programme properly against alternative ways of addressing the demographic task, and to defend it at federal level.

14.5. Public value per rouble

How much public effect each invested rouble creates, measured by a comparable method across all territories in the programme. It captures both direct effects (services, employment, taxes) and

avoided future budget costs: transporting children, mobile healthcare visits, maintaining separate buildings.

14.6. Payment by result

The financing principle follows directly from the measurement system: part of the money is tied to the result achieved rather than to the completion of works.

Indicator	What it confirms
Jobs created	The economic viability of the perimeter
Functional utilisation of premises	That the building works, not merely that it was handed over
Footfall at the centre	That residents need it
Growth of the tax base	Return on public investment
New permanent residents	The demographic effect
Reduced energy use per m ²	Effectiveness of the engineering solutions

Not “the budget was spent” but “the result was achieved”. This is the single change that separates a development programme from a repair programme.

15. Roadmap: 100 → 1,000 → 5,000

15.1. Three phases

Phase	Scale	Content	Criterion for moving on
Phase I	100 settlements, 10–20 regions	Piloting across climate zones and typologies. One flagship per region — a fully delivered example	Measured results on all five KPIs for at least 20 buildings with a full year of operation
Phase II	1,000 settlements	Standardisation: BIM library, standard solutions, the digital platform, financial models, the regulatory base. Formation of a domestic supply chain	A working catalogue, confirmed costs by type, an established pool of contractors and suppliers
Phase III	5,000 settlements	A national network: centres become elements of the country's spatial framework, linking village, district, small town and regional capital	—

15.2. The pilot cycle: 24–36 months

YEAR 1	survey -> digital passport -> scenarios -> selection -> design -> financing -> site preparation -> ENERGY FIRST (networks, capacity)
YEAR 2	reconstruction -> fit-out -> recruiting and training the team -> launching clusters -> start of the housing contour
YEAR 3	measurement -> optimisation -> repeat SVI measurement -> decision on replication

The third year is essential and must not be compressed. A programme that moves to mass construction without a year of measurement loses the only thing that distinguishes it from previous attempts — an evidence base.

15.3. Selecting the first hundred territories

Selection is neither random nor application-driven. Eight potential parameters are computed: infrastructure, demographic, economic, transport, land, energy, tourism and investment. The method is set out in appendix A.

An important requirement for the composition of the pilot hundred: it must cover different climate zones, different typologies (S1, S2, S3) and different starting conditions of the buildings. A sample drawn only from prosperous territories will produce inflated figures and make the results useless for planning phase II.

15.4. The flagship

In each pilot region one building is delivered in full and serves as a demonstration site: for governors and municipalities of neighbouring regions, investors, architects, students of relevant universities, journalists. This is not a marketing decision but an instrument for lowering the barrier to adoption: seeing a working building is more convincing than any presentation.

16. Risks and how they are removed

A concept is only as strong as the honesty with which its weak points are examined. Below are the risks capable of bringing the programme down and the specific mechanisms built into its design to remove them.

No.	Risk	What it consists of	Removal mechanism
R1	The economics are unproven	Private capital leverage, payback and population growth are targets, not measured values	Phase I is designed as a measurement experiment; the move to phase II is barred until actual data from 20+ buildings exists
R2	Operating costs beat construction costs	Building a centre is easier than running it for twenty years; costs arise after construction has reported success	The operating model, the source of operating income and the responsible operator are defined before works begin; the efficient envelope reduces the fixed component
R3	People	A FabLab, telemedicine and coworking only work if there are people running them	The staffing contour is part of the design on equal terms with the structure; a cluster with no named lead and no three-year funding source is dropped
R4	Demand for relocation	Willingness of urban residents to move permanently rather than seasonally has not been measured	Demand measured before the neighbourhood is designed: survey, pre-booking, analysis of transactions in comparable locations
R5	“Built and forgotten”	Without mandatory outcome measurement the programme degenerates into another cycle of renovations with attractive paperwork	Public reporting on five KPIs, part of funding tied to result, an open national map showing the status of every facility
R6	Cost dispersion	Actual reconstruction cost may fall far outside the model ranges because of structural condition	Structural survey before the decision is taken; scenario C (a new building) stays in the option set if reconstruction proves more expensive than new build
R7	Selection “by application”	Territories chosen by the activity of the local head rather than by potential; the effect becomes random	A computed selection method on eight parameters; publication of the grounds for each choice
R8	Standardisation degrading into uniformity	The modular catalogue turns into identical buildings with no regional adaptation	Regional adaptations are a mandatory part of the standard; architectural quality is included in acceptance criteria

THE RISK THAT CANNOT BE REMOVED BY DESIGN

The programme runs on a long horizon: one pilot cycle is three years, phase I as a whole is five to six. A shift in regional or federal priorities mid-cycle would leave partially delivered perimeters, which are worse than undelivered ones: networks built, housing sold, centre not launched. The only partial defence is a staged structure in which every stage has standalone value. That is precisely why the digital passport is useful before the platform exists, the energy contour before the housing does, and the basic cluster set before the optional ones.

17. What the region gets and what the investor gets

17.1. The region

What it gets	What that looks like in practice
A ready development model	No need to invent a programme from scratch each time: typology → digital survey → scenarios → design → financing → KPIs → monitoring
Investment-ready territories	Sites private capital can enter without negotiating separately with six institutions
Lower per-capita maintenance cost	Merging separate buildings into one energy-efficient facility
A demographic effect	Retention of young families and return migration — measured, not estimated
A tax base	New residents, new enterprises, new housing
Manageability	Territory Dashboard: the state of every territory in one frame of reference
A showcase	A flagship worth showing

17.2. The investor

What it gets	What that looks like in practice
Infrastructure risk removed	Land, capacity, networks and connection closed before private capital enters
A single entry point	ONE STOP TERRITORY instead of six to eight independent negotiations
A new housing product	Rural residential development instead of competing on price per plot
A calculation perimeter	Returns computed across the whole territory contour rather than a single building
Transparent data	Digital passports of territory and building as the basis for due diligence
A scaling channel	For technology solutions — a network of comparable territories with common standards
Measurable social effect	For impact capital — a measurement method common to every territory in the programme

17.3. The resident

The shortest description of the outcome and at the same time the main criterion of success: **a normal life close to home**. School, healthcare, work, sport, children's activities, government services, public life and nature — within five hundred metres rather than an hour and a half away.

17.4. The country

A more distributed demography, economy, infrastructure and human capital; a domestic supply chain for a standard public facility; a polycentric spatial model instead of drawing the population into a handful of agglomerations. The historic “village → city” migration model is replaced by a mobile arrangement — “metropolis ↔ small town ↔ settlement” — in which a person can live in a village, work remotely, visit the city, run a business and study online.

18. Conclusion and immediate next steps

The strongest argument for the programme is that it does not require starting from zero. Land, buildings, roads, networks, settlements, history and 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.

18.1. Four formulations for four audiences

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.

18.2. Immediate next steps

1. **Choose a pilot territory.** One settlement in category S2 with a surviving building of 1,500 m² or more, a resident population and a transport link to the district centre.
2. **Run the survey.** Structure, services, energy, land, population, economy. Duration 2–3 months. Output: a digital passport of the building and the settlement.
3. **Compute the scenarios.** At least five options (A–E) on a single set of indicators, honestly including “do nothing” as the reference point.
4. **Appoint the operator.** Who manages the territory, who holds the land and the building, who is answerable for operation after launch.
5. **Close the staffing contour.** For every cluster — a named lead and a funding source for three years.
6. **Design the energy system.** Before any work on the housing contour, without exception.
7. **Record baseline KPI values.** The “before” measurement must be taken before works begin — it cannot be reconstructed later.

WHAT MAKES THIS PROGRAMME TESTABLE

The first step costs two to three orders of magnitude less than reconstruction and produces a result regardless of what happens to the programme afterwards: a digital passport of the territory is useful to the municipality in its own right. This is a rare case where testing the hypothesis does not require prior agreement to its full scale.

This document has been prepared as a working draft of an investment and urban-planning memorandum. All quantitative values are model figures subject to verification on a specific territory. The current version and supporting materials are available on the analytical platform gosplan2.ru.

Appendix A. Settlement typology and selection method

A.1. Four categories

Class	Condition	Characteristics	Strategy
So	Critical	Population steadily shrinking, no economic base, infrastructure beyond its service life	Maintain services and decent conditions for those who remain; capital investment is not justified
S1	Stable	Population holds, employment exists, potential is limited	Basic community hub (HUB-500 / HUB-1000) without a large housing contour
S2	Growth point	Transport, free land, economic activity, housing demand	Full perimeter: centre, energy, housing, manufacturing
S3	Anchor centre	Serves neighbouring settlements, has district-level functions	Inter-settlement node, HUB-2000 / HUB-5000, extended function set

A.2. Eight selection parameters

Parameter	What is assessed
Infrastructure	Condition of the building, availability of land, networks, roads, connected capacity
Demographic	Population dynamics, age structure, share of young families
Economic	Employment, enterprises, tax base, incomes
Transport	Links to the district and regional centre, regularity of service
Land	Availability of free plots for the housing contour, form of ownership
Energy	Capacity reserve, substation condition, connection cost
Tourism	Presence of attractions, visitor flow, seasonality
Investment	Presence of potential residents and developer interest

A.3. Two coefficients

Allocation of funds rests on the balance of two coefficients — the **investment** coefficient (expected multiplier) and the **social** coefficient (severity of need irrespective of return). Equal investment in different territories produces different effects, and that must be computed in

advance; but socially weak territories cannot be abandoned either. The balance between the coefficients is set by the state — publicly and by the same rules for everyone. The opacity of that balance is the main source of distrust in any territorial development programme.

Appendix B. Territory survey checklist

B.1. The building

- Year built, structural scheme, wall and floor materials
- Condition of load-bearing structures — report from a specialist organisation
- Roof, façade, glazing: remaining service life
- Engineering systems: heating, ventilation, water supply, drainage, electrical, low-voltage
- Actual areas room by room, ceiling heights, floor load capacity
- Current utilisation of premises by hour and day of week
- Actual maintenance costs over three years
- Legal status of the building, encumbrances, heritage designation

B.2. The territory

- The building's land plot: area, boundaries, permitted use
- Free plots within 500 m: area, ownership, constraints
- Roads and access, pavements, lighting
- Public transport stops, timetable, actual connectivity
- Existing green areas, water bodies, landscape constraints
- Storm drainage or its absence, flooding points

B.3. Energy and networks

- Connected capacity of the building and actual consumption
- Capacity reserve at the feeding substation
- Cost and timeline of increasing capacity
- Water supply and drainage: source, capacity, condition
- Heat supply: source, scheme, losses
- Communications and internet: providers, actual speed, coverage

B.4. People and economy

- Population size and age structure of the settlement and the catchment
- Employment: where residents work, share of commuting, share of remote work
- Operating enterprises, sole traders and self-employed by activity
- School and nursery: enrolment, trend, condition
- Healthcare: rural clinic or outpatient facility, staffing, distance to the district hospital
- Existing cultural, sporting and educational activities and who runs them
- Local producers, potential marketplace residents

- Baseline KPI measurement before any works begin

Appendix C. Digital passport template

COMMUNITY HUB No. 001

BUILDING

Floor area: 2,340 m²
Land plot: 1.4 ha
Built: 1976
Structural scheme: brick / precast concrete

CONDITION

Structure: satisfactory
Roof: needs repair
Services: need replacement
Glazing: needs replacement

ENERGY

Current capacity: 120 kW
Capacity after: 250 kW
Substation reserve: confirmed / not confirmed
Actual consumption: ___ kWh/year
Maintenance cost: ___ RUB m/year

PROJECT ECONOMICS

Reconstruction cost: RUB 180-230 m
Catchment: ~6,000 people
Jobs: 35-60
Footfall (forecast): 15-25k visits/month
Functional utilisation: was ___ % -> target ___ %

SCENARIOS

A repair in the former function	CAPEX ___	SVI +___
B conversion to a community hub	CAPEX ___	SVI +___
C new building	CAPEX ___	SVI +___
D hub + residential quarter	CAPEX ___	SVI +___
E hub + energy + housing + industry	CAPEX ___	SVI +___

STATUS

Growth Stabilisation Transformation Critical

The values in the example are illustrative. The passport is completed from the survey (appendix B) and is a mandatory condition for admitting a building to the programme: without it there can be no scenario calculation, no comparison between territories and no subsequent measurement of results.

Appendix D. Cash-flow logic of a pilot

STATUS

What follows describes the structure of the flow, not a forecast. Numeric values are deliberately omitted: at pre-design stage they would create false precision. The table shows the order in which costs and receipts arise and where the decision points sit.

Period	Outflow	Inflow	Decision point
M 1–3	Survey, digital passport	—	Proceed or not — based on the structural survey
M 4–9	Design, scenario calculation, expert review	—	Choice of scenario A–E
M 7–15	Energy: capacity, networks, reserve	—	Capacity confirmed before the housing contour starts
M 10–24	Reconstruction, fit-out	Start of plot sales	Sales pace against plan
M 20–26	Recruiting and training, cluster launch	First operating income of the centre	Utilisation against plan
M 24–36	Operation	Rent, memberships, services, residents, tax base	Repeat SVI measurement; decision on replication

D.1. Three critical forks

1. **After the survey.** If the condition of the structure makes reconstruction more expensive than new build, the honest answer is scenario C, not continuing out of inertia.
2. **Before the housing contour.** If capacity is unconfirmed or demand unmeasured, the housing part is postponed and the centre launches on its own. That is worse economically but creates no undeliverable obligations.
3. **After the first year of operation.** If functional utilisation is materially below plan, the cause is to be sought in the staffing contour and the cluster mix, not in increased marketing spend.

Appendix E. Glossary

Community Hub	A multifunctional community centre of a settlement, combining cultural, educational, medical, work, sporting, children's, entrepreneurial and government functions in one building
Energy Hub	The energy core of a settlement: capacity, networks, generation, storage, reserve and load management
Housing Hub	The housing contour of the programme: a new rural quarter with full infrastructure and public spaces
Digital Twin	A digital model of the settlement linking its physical and economic layers
ENERGY FIRST	The sequencing principle: capacity, networks, generation and reserve are designed before housing
Functional utilisation	The share of time a space is actually in use
SVI	Settlement Vitality Index — a composite index of ten components
ONE STOP TERRITORY	A single point of entry for investors into a territory via its development operator
Rural residential development	A housing product comprising land, infrastructure, environment, community centre and workplace
RuralTech	The set of technology segments applicable to a rural territory: EnergyTech, AgTech, FoodTech, MedTech, EdTech, GovTech, ConstructionTech, ClimateTech
Living Lab	A mode in which a territory serves as a testing ground for technology with mandatory before-and-after measurement
The 3–30–300 rule	Three trees visible from the window, 30 % canopy cover in the neighbourhood, 300 metres to quality green space
Blue-green network	A continuous network of water and green areas performing engineering functions
So–S3	Settlement typology by condition and potential: critical, stable, growth point, anchor centre

Appendix F. Sources

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5. Regulatory requirements on siting public service institutions in relation to housing, transport and walking distance; the community centre as the leading structural element of a rural settlement.
6. The 3–30–300 rule for urban greening (Nature Based Solutions Institute, C. Konijnendijk).
7. Materials of the “Biophilic cities” section and the catalogue of world projects on gosplan2.ru — the Biophilic Cities and CitiesWithNature networks, city programmes in Singapore, Seoul, Copenhagen and Milan, the 14 Patterns of Biophilic Design and the Living Building Challenge.

Links are given in plain text for the printed version. The current list with active links is in the “SELO 2.0” and “Biophilic cities” sections on gosplan2.ru.