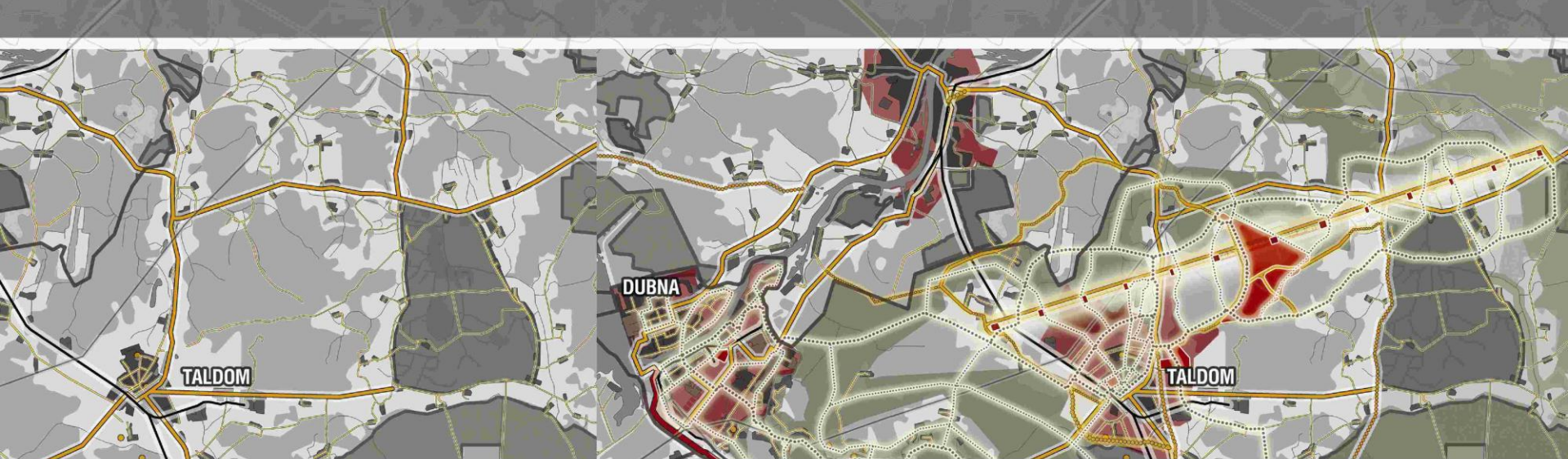




INTERNATIONAL LINEAR COLLIDER



JOINT INSTITUTE FOR NUCLEAR RESEARCH



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ILC TERRITORIAL COMPLEX in the north of the Moscow Region

This is a review of the diploma thesis made by S. Karyaeva, a student of the Moscow Institute of Architecture, under the supervision of A. Krasheninnikov, E. Petrovskaya, and in accordance with the data provided by JINR and GDE.

The aim of this work is to develop a new economic and social “growing point” based on the International linear collider – a science campus that will be connected with Dubna and Taldom.



МАРХИ



Moscow Institute of Architecture (MIA) is the famous Architecture University in Russia.

MIA trains architects of wide-range specialization: Town-Planning, Architecture of Residential and Public Buildings, Architectural Design, Architecture of Industrial Buildings, Architecture of Agricultural Complexes, Theory and History of Architecture, Restoration of Architectural Monuments, Interior Architecture, Landscaping.



CERN



FNAL



SLAC



DESY

Extensive experience has been accumulated all over the world in the construction of accelerators and the accompanying research complexes.

Examples of developed and functional systems were studied that are all situated in different environment - in densely populated areas, in the city, in the suburbs, etc. This project is based on the analysis of transport and social infrastructures of the laboratories.

THE MAIN ADVANTAGES OF THE ILC CONSTRUCTION IN DUBNA

- JINR, situated in Dubna, is an international intergovernmental organization which may become a basic structure for the future scientific center.
- The area is sparsely populated and is practically free from industry, rivers, roads and other design restrictions.
- The absolute seismic stability of the area.
- The flat topography and the unique geological conditions will allow the construction of the tunnel at shallow depths (substantially decreasing the construction costs)
- The number of the energy sources of sufficient power in the area of construction is abundant.
- There are well-developed transportation and communications systems, with the potential for constructing and placing the project.

ANALYSIS OF THE TOWN-PLANNING SITUATION

After some improvements, the infrastructure will allow for the placement of the collider and the accompanying science campus. Secondly, this science campus might become one of the “growing-points” of the Moscow region and the Taldom district, of which they are now in desperate need. One of the primary tasks of planning in the Moscow region is to decrease the centripetal activities for the benefit of peripheral areas. This project may also help fulfill the tasks of improving the living conditions of the population, protecting the environment and preserving the historical heritage, developing the regional engineer support and economy of the region, improving the state of the transportation network, etc.

For Dubna, the optimal solution lies in the creation of a satellite town, connected with Dubna and JINR. The ILC territorial complex could become just that.

ANALYSIS OF DIFFERENT GENERAL PLANS OF THE TERRITORY



The current state of the region and the summary scheme of the Moscow region General plans. The Scheme of the territorial development of the Moscow region, the Scheme of the development and placement of specially protected natural territories of the Moscow region, the contours of the General plans of Dubna, Kimry and Taldom, as well as other schemes are combined here. The possible placement of the ILC route is presented on this plan according to the Report on the results of the preliminary engineering-geological research of the Federal State Unitary Enterprise "State Specialized Project Institute".

DESIGN RESTRICTIONS

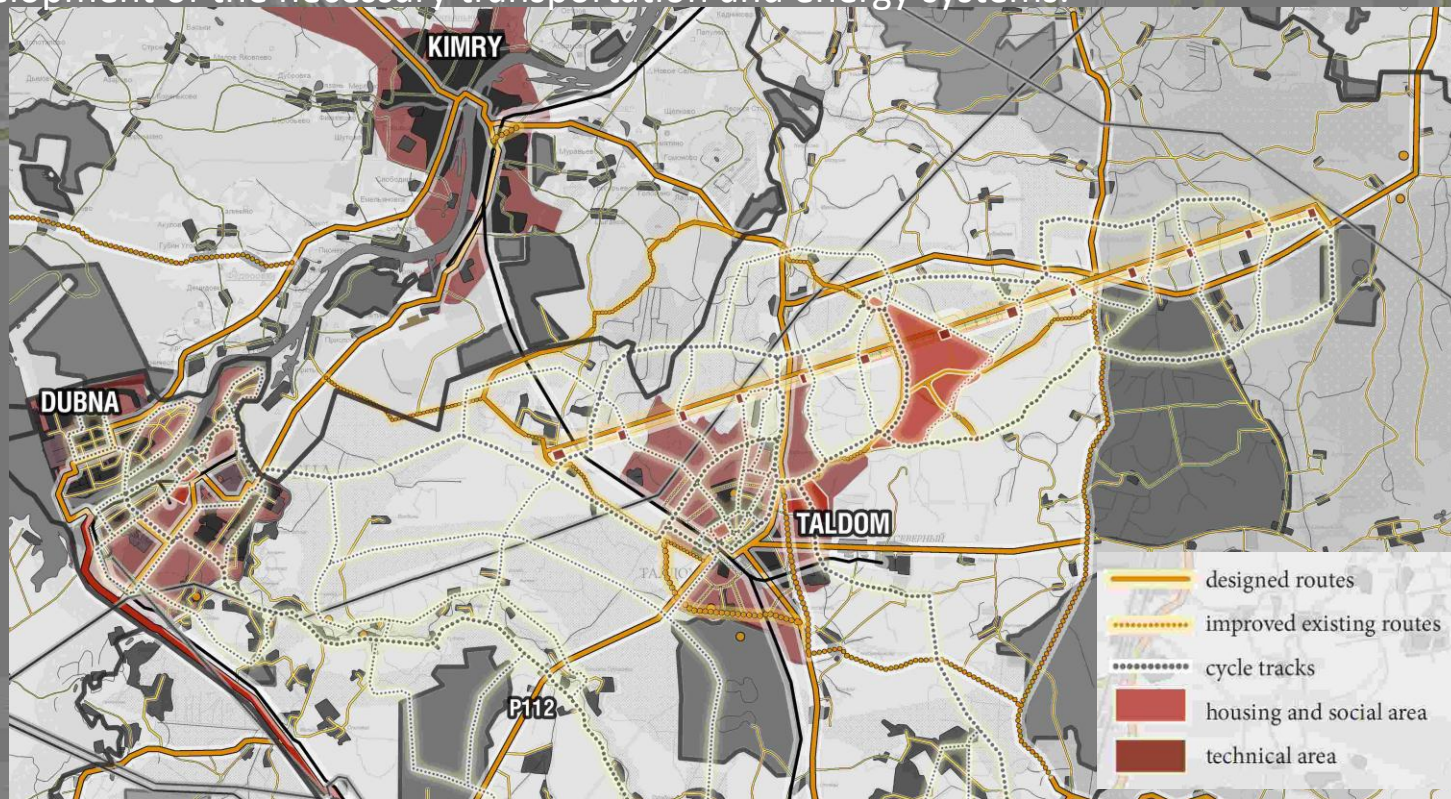


The scheme of design restrictions, explaining the choice of the construction ground. It is based on the variant of the ILC route placement, as provided in the “Report on the results of the preliminary engineering-geological research” of the Federal State Unitary Enterprise “State Specialized Project Institute”. The exact placement of a 30 km collider construction is explained by the possibility of its future extension up to 50 km and by the design restrictions, such as roads, settlements and nature reserves.

THE CONCEPT OF PLANNING

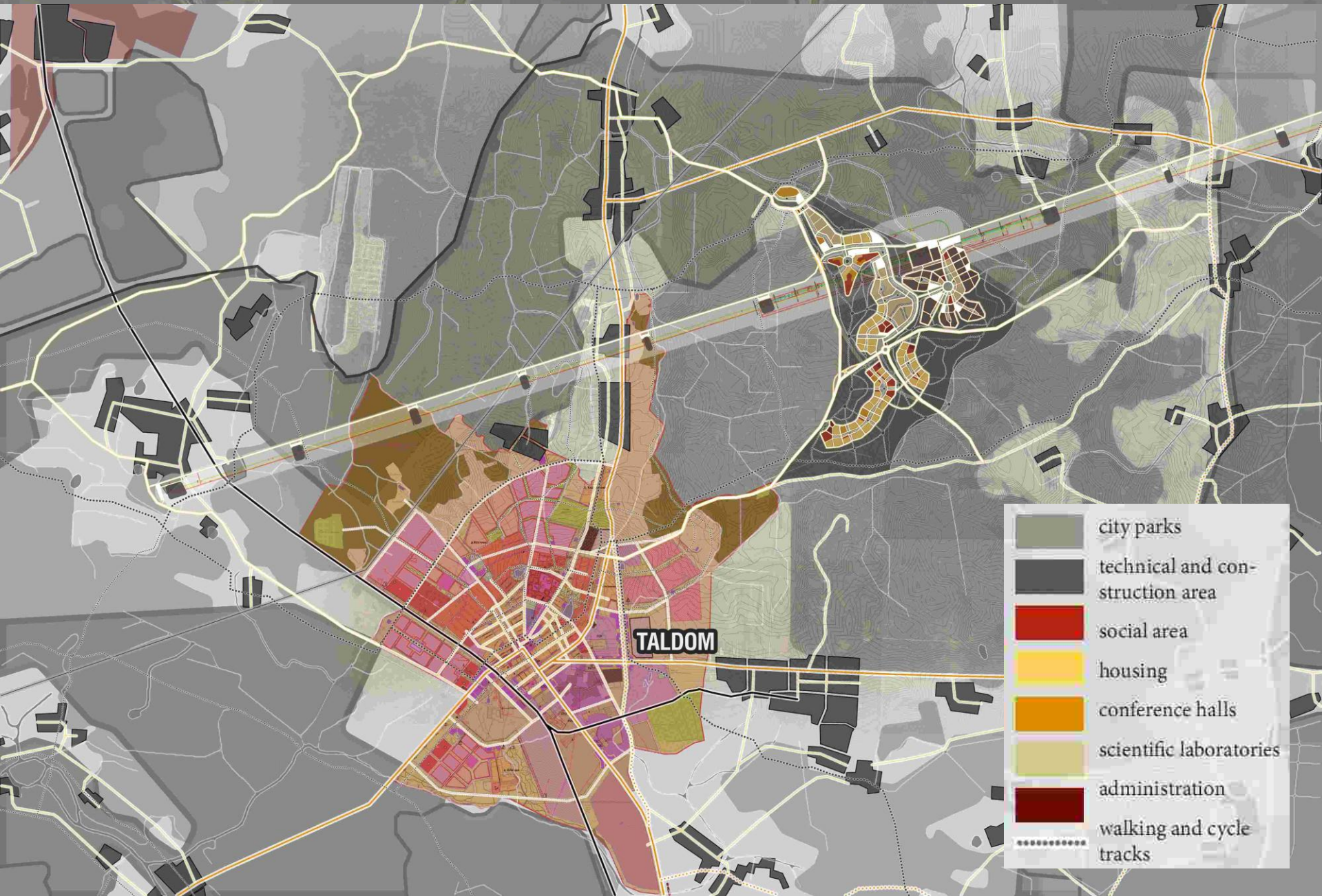
The concept of planning must fulfill the following tasks:

- The development of a new scientific-production zone in addition to Dubna situated away from Moscow.
- The change of occupation for the local population. The organization of new working places in the sphere of construction and science-intensive enterprises will draw highly skilled specialists from other countries
- The modernization of urban surroundings, the development of recreational infrastructure (with the maximal preservation of natural and historical landscapes), improvement of social infrastructure.
- The development of the necessary transportation and energy systems.



The highway connecting all the shafts and giving access to them goes almost straight along the collider route. It is connected with the rest of the transport infrastructure in three points: at the beginning, in the middle and at the end of ILC route. It is only possible to access it through the check-points or from the campus.

PLACEMENT SCHEME OF THE SCIENCE CAMPUS AND THE ILC ROUTE



- city parks
- technical and construction area
- social area
- housing
- conference halls
- scientific laboratories
- administration
- walking and cycle tracks

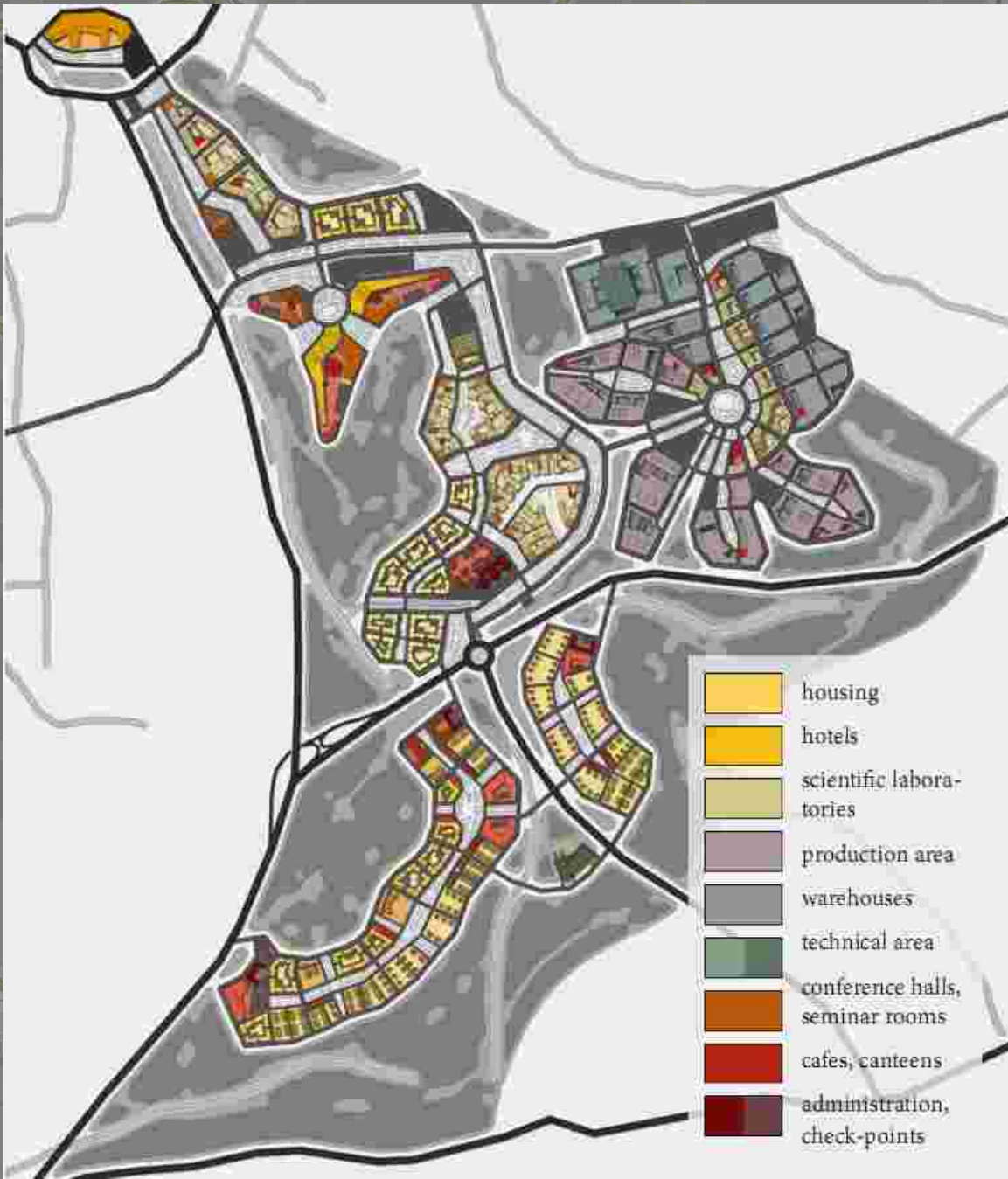
PLANNING SUGGESTIONS

Internal connections of the transport infrastructure

On the urban level, the project is a network of streets laid according to the analysis of the terrain. The main routes are generally accessible, but it is only possible to access the campus and the technical highway through the check-points. The network of cycle tracks and footpaths laid through the parks, public gardens and boulevards of the campus is also realized here. The local bus-stops are placed by the main administrative building and near the museum. The transportation utilities are two monorails, laid through residential, scientific and technical sectors. They cross at the check-point.



PLANNING SUGGESTIONS



Approximate balance of the territories:

Transport infrastructure – 15%

Technical and production part – 40%

Scientific-research part – 20%

Housing and social infrastructure – 25%

Technical and production facilities (warehouses, electric substation, cryogenic and ventilation systems, experimental halls; shafts)

Scientific-research part (laboratories, conference halls and rooms, computation center, library, education center)

Housing (hotel, dormitories, apartment buildings, townhouses, cottages)

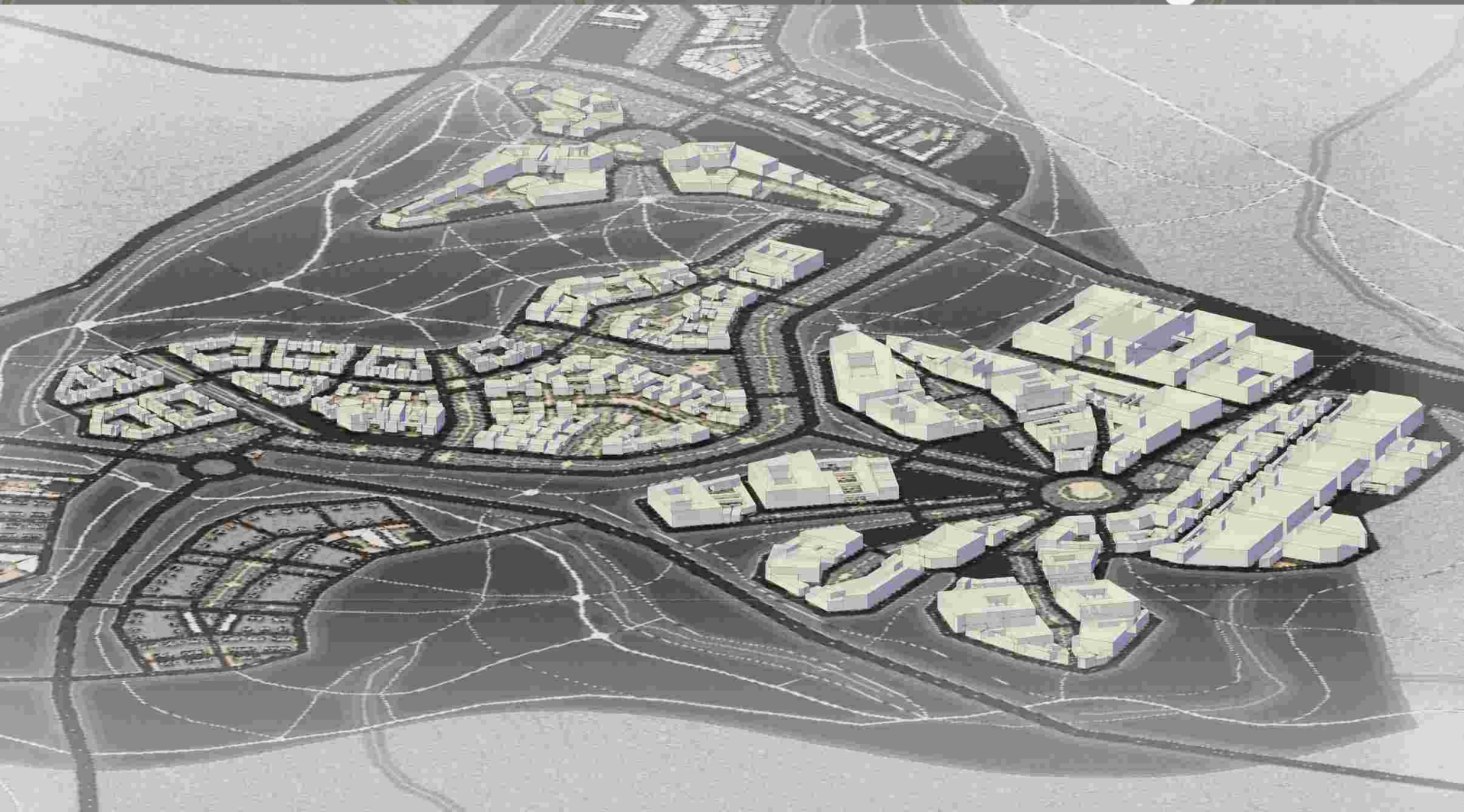
Social infrastructure (administration, registration, information center, check-points, nutrition canteens, cafes and coffee shops, health services - hospitals, aid-posts and pharmacies, kindergarten, school, shops and shopping centers)

Other facilities (banks, post office, fire brigade, police station, parks, gardens; sports center with a swimming pool, soccer field, tennis courts, etc.)

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THANK YOU FOR ATTENTION!