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'And Here We'll Have a Science Town': Akademgorodok of the Kola Science Center as a Form of Organization of the Scientific Space in the Soviet North

Abstract

The natural and climatic conditions prevailing in the Russian Arctic have a profound impact on the development of industry and science: traditional industries are inefficient here, and the process of dynamizing/revitalizing this area and adapting people and technologies to new realities requires specialized research. These circumstances have led some Northern and Arctic cities to develop the functions of 'science cities'.

The Branch of the USSR Academy of Sciences – Kola Science Center of the Russian Academy of Sciences is considered in this article as an example of a science city located within the Soviet northern scientific area. It offers unique features for studying the emergence of academic science at the periphery, far from the central

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institutions of the Academy of Science. Founded in the 1930s, it is the only academic research center located within the boundaries of the Arctic Circle. The construction of Akademgorodok and the concentration of academic institutions in the city of Apatity can be seen as a unique experiment in organizing academic science on the periphery of a country, which was actively utilized later.

Keywords: *institutionalization of Soviet science, planning of scientific activities, academic community, USSR Academy of Sciences, Kola Science Center, Akademgorodok, Soviet North, Arctic*

„A tu będziemy mieli miasto naukowe": miasto naukowe Koła jako forma organizacji przestrzeni naukowej na radzieckiej północy

Abstrakt

Warunki naturalne i klimatyczne panujące w rosyjskiej Arktyce wywierają przemożny wpływ na rozwój przemysłu i nauki. Tradycyjne gałęzie przemysłu są tu nieefektywne, jednocześnie proces dynamizacji tego obszaru oraz adaptacji ludzi i technologii do nowych realiów wymaga specjalistycznych badań. Okoliczności te skłoniły niektóre arktyczne miasta do rozwinięcia funkcji „miast naukowych".

Filia Akademii Nauk ZSRR – Centrum Nauki Koła Rosyjskiej Akademii Nauk jest w niniejszym artykule rozpatrywana jako przykład miasta naukowego położonego na radzieckiej północy. Oferuje ona unikalne możliwości badania powstawania nauki akademickiej na peryferiach, z dala od centralnych instytucji Akademii Nauk. Założona w latach 30. XX wieku, jest jedynym akademickim ośrodkiem badawczym za kołem podbiegunowym.

Budowa Akademgorodoka i koncentracja instytucji akademickich w mieście Apatyty mogą być postrzegane jako unikatowy eksperyment w organizacji nauki akademickiej na krańcach ZSRR, który został później aktywnie wykorzystany.

Słowa kluczowe: *instytucjonalizacja nauki radzieckiej, planowanie działalności naukowej, społeczność akademicka, Akademia Nauk ZSRR, Centrum Naukowe Koła, Akademgorodok, północ ZSRR, Arktyka*

1. Introduction

The academic landscape of the USSR was shaped by three main actors: higher education institutions (which served both as teaching and research bases); the USSR Academy of Sciences, comprised of various institutions engaged in practical and fundamental research; and industrial institutes supervised by various ministries.[1] During the entire Soviet period, the formation of research fields and the academic world itself were bound to the logic of economic rationality, which was based on the specifics of Soviet society's development.[2] It is therefore not surprising that regional institutions (including academic institutions) assumed sectoral or industrial branch specialization focused on "the use of the wealth of natural resources for industrial purposes."[3]

In the 1920s and 30s, the space of Soviet science was rigidly centralized and focused on major metropolitan cities. Theoretical and fundamental problems were dealt with in Moscow and Leningrad, while applied problems were solved at the periphery, very often under the command of scientists from the Academy of Science, who came to visit from the capital cities. The Soviet academicians understood that the existing situation hindered the development of science in the periphery of the country. They regularly discussed this problem at the scientific sessions of the Academy of Sciences.

To some extent, it was possible to overcome and override the rigidly centralized system of Soviet scientific institutions. Yet, that happened only in the post-war years, when a proper academic system was revived. In order to achieve these goals, new scientific centers were created, mainly in the eastern parts of the country. However, the academic community did speak out on the need to create a uniform network of scientific institutions throughout the country as early as 1926:

> The immediate goal of the Academy of Sciences is to create branches and properly equipped units in the country's outlying regions. It is impossible to concentrate scientific work

[1] The preconditions for the division of science into 'fundamental' and 'applied', as well as the separation of the teaching and research processes, were already in place at the beginning of the 20th century, in the last years of the Russian Empire. For more on the issue, see: Graham 1993, pp. 180–181; Kojevnikov 2002.

[2] For more, see: Graham 1993; Vodichev 2012.

[3] Organizatsiia sovetskoi nauki v 1926–1932 gg. 1974, p. 170.

> in a single center, and it is impossible to bypass the frontiers (Organizatsiia sovetskoi nauki v 1926–1932 gg. 1974, p. 171).

One of these 'properly equipped units' will be discussed in this article. Throughout its existence, this scientific center has gone through several organizational restructurings and name changes. First, it was known as the Khibiny Mountain Research Station (1930), then it received a higher institutional status as the Kola Science Base of the USSR Academy of Sciences (1934), then – the Kola Branch of the USSR Academy of Sciences (KFAN, 1949), and finally in 1991 it was renamed as the Kola Science Center of the Russian Academy of Sciences (KSC RAS).[4]

The aim of this article is to study the evolution of the organization of academic science on the Kola Peninsula, one of the northern regions of the Soviet Union.[5] Academic science on the Kola Peninsula can be an illustrative example of the changing roles between the center and the periphery as its development has gone through all subsequent stages, from a narrow specialization in the 1920s and 30s to a complex center that combined natural science and humanitarian research in the 1980s. Unlike most Siberian academic towns or Soviet closed cities of the Atomic Project (Obninsk, Dubna, or Arzamas-16),[6] the Kola scientific community has long been methodologically oriented towards academic science in the capital cities of the USSR (Leningrad and Moscow). The creation of an academic institution there met the need for industrial development of the territory of the Kola Peninsula in the first half of the 20th century and at a later time. The modern academic institution traces its origins back to the Khibiny Mountain Station of the USSR Academy of Sciences, founded in 1930. Its establishment recognized the need for a stationary point on the territory of the Kola Peninsula to be able to promptly tackle the challenges of intensive industrial development.

The article will focus on the Akademgorodok of the Kola Science Center**,** one of the first Soviet 'academic settlements' ('Akademgorodok',

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[4] From here on, the abbreviation KSC (Kola Science Center) will be used to indicate references to the post-Soviet period (after the 1990s) and the abbreviation KFAN when referring to an earlier period (before 1991). The concept of Akademgorodok is also used as a synonym – a set of scientific institutions rather than a place in the urban landscape.

[5] On the creation of other regional scientific centers, see: Koltsov 1988; Artemov 1990; Vodichev 1994.

[6] On closed science cities, see: Rogacheva 2017; Dolgova 2024.

or 'Академгородок' in Russian). It is located in the town of Apatity in the Murmansk region.[7] Unlike other such settlements, which were created as separate microdistricts within large cities (Novosibirsk, Irkutsk, Tomsk, etc.),[8] the academic settlement of the Kola Center turned out to be a kind of 'assembly place' for Apatity and, moreover, it shaped the first large construction site within the new town. The construction of the city began in the 1950s and Apatity received city status in 1966. Before that, there was a railway station on the site of the city, and before that, a village. The first buildings of Akademgorodok were constructed in 1961. The Kola Centre is unique in that it is the only academic research center located within the Arctic Circle and established in the pre-war period (1930s). Other academic centers were created either later (in the post-war period) or in more favorable climatic conditions (in the southern regions of the country).

It should be especially noted that science in the northern towns and cities (including those that were beyond the Arctic Circle) played a more prominent role than in other Russian settlements.[9] In the North, due to

[7] Apatity is located in the far north, therefore it is characterized by short and cool summers and cold and snowy winters. Temperatures in Apatity typically range from -17°C to +18°C throughout the year, with occasional drops to below -30°C or rises to above +24°C. Additionally, strong and cold winds are common during the winter months. During the winter, there is a period of polar night that lasts approximately two weeks (for example, from December 15 to December 27 in 2023). In summer, there is a period of polar day that lasts 47 days (for example, from May 29 to July 14 in 2023). Despite the harsh climatic conditions, the area has been actively developed and explored. Field research can only be carried out during the summer, although geological surveys could be carried out in the spring and autumn. Winter is mainly a time for processing collected materials. Saami, the indigenous population living near Apatity, became extinct. Active development of the territory began in the 1920s and 1930s. In the 1930s and 1950s, it was used as a Gulag prison camp, but later people began to go there voluntarily. The present-day population consists of migrants from the 1940s–1960s and their descendants. However, the residents do not feel isolated from the central parts of the country, as they are geographically relatively close to the major cities of Moscow and St Petersburg (compared to the Urals or the Siberian North). For more about the living conditions in Russian Arctic cities, see Zamyatina et al. 2023.

[8] Even the Novosibirsk Academgorodok, geographically located 25 km from the center of Novosibirsk, is administratively included in the Soviet district of the city.

[9] Leading Russian scholars specializing in the North, Alexander Pilyasov and Nadezhda Zamyatina, suggest that science towns should be considered as an important part of the process of Arctic urbanization (Zamyatina, Pilyasov 2018, p. 14; Zamyatina, Goncharov 2020, p. 74 (table 2)).

very specific conditions, the development of most industries was highly inefficient. And, on the contrary, the process of pioneering the development of territories and the adaptation of man and technology to new conditions required special studies of seemingly traditional industries: construction, transportation, etc. (not to mention the study of local geological and climatic specifics, the influence of the Arctic and sub-Arctic climates on human health etc.). This has led some northern and Arctic cities to develop scientific research in order to provide the city and surrounding areas with the necessary knowledge for their economic activities.[10] Methodologically, this phenomenon was explored in the context of developing special bases as centers aimed at providing the so-called 'services' (a term introduced by Alexander Sysoev).[11] The term 'development services' refers to the economic specialization of an Arctic city, which allows the use of all resources (natural, labor and others). In modern Northern Studies, the concept of urbanization is widespread, and the presence of scientific and higher educational institutions in a Northern/Arctic city is seen as a competitive advantage for the development of the territory. According to leading Russian scholars specializing in the North, Alexander Pilyasov and Nadezhda Zamyatina,

> cities as a new resource of the northern and Arctic territories are associated with the processes of innovative development, post-industrial transformation, the creation of knowledge economy infrastructure (universities, business incubators, venture funds, etc.) (Zamyatina, Pilyasov 2018, p. 14).

It was the presence of an academic center that allowed the city of Apatity to survive and maintain its self-sufficiency in the 1990s when socio-economic conditions changed. At the turn of the 1980s and 1990s, Russia experienced an economic crisis, colloquially referred to as the "Wild Nineties," marked by rising unemployment, factory closures, and salary arrears.[12]

All of these factors allow us to consider the Akademgorodok of the Kola Science Center as an interesting case study of the formation of scientific space in the Soviet North throughout the entire Soviet period.

[10] Zamyatina, Kliueva, Goncharov et al. 2023, p. 13.
[11] See: Sysoev 1979; Mosunov, Nikul'nikov, Sysoev 1990.
[12] For more, see Humphrey 2002.

The formation of the space of academic science can be divided into two periods – a period of development and structuring of scientific institutions and a period of concentration in Akademgorodok.

In the late Soviet period, researchers and people who had an idea about the activities of KFAN actually formed the core of the local community of the city of Apatity.

Moreover, even today, urban residents have the impression that if, for any reason, Akademgorodok were to cease to exist, the city would stop being a city and would turn into what is known as a residential area (Cit. E.K). I was told about the results of a sociological survey conducted in 2016, in which respondents described their image of the city. The most popular descriptions included the concepts of science city and Akademgorodok. This is due to the fact that the scientific centre was and remains one of the core organizations of the city, along with the state district power station and, in Soviet times, the *Apatitstroy* Construction Company.

The chronology of the development of the Kola Science Center is described in detail by historians, employees of the KSC.[13] The article is based on biographical narrative interviews with employees of the KSC RAS of various specializations (ecologists, economists, historians, power engineers, geologists and chemists) who worked in the Academy of Sciences in the late Soviet period, their family members, as well as residents of Apatity who were not directly connected to and who did not work with the KSC. The database of collected interviews consists of 18 male and 23 female interviews.[14] Although most of the interviews cited (with the exception of the collective interview) are female, perceptions of the science centre were obtained through conversations with different interviewees. I do not explicitly discuss gender specificity of the Kola Science Center, although this topic was occasionally raised in the interviews.

[13] For more, see Petrov et al. 2011.

[14] The sample of respondents was based on the so-called "eight-window sampling model" commonly employed in qualitative sociological research (see Steinberg 2016). This approach enabled the inclusion of a diverse range of individuals: scientific researchers from various disciplines (humanities and natural sciences), as well as city residents with no affiliation to Akademgorodok or the Kola Science Center. One of the key sampling criteria was the age of the respondents, specifically more than 45 years, ensuring they had experienced life in the late Soviet period. During the sampling process, gender was intentionally not considered as it was deemed secondary to the specific objectives of this article.

Before proceeding to the discussion of topics dedicated to the Kola Science Center, I would like to note that for the modern town of Apatity, the area of the Academic City (Akademgorodok), where most of the institutes are located, acts as a kind of *genius loci*, and its employees retain a strong appreciation for that.

2. Formation of the scientific space of the Kola North: from separate institutions to Akademgorodok (1920s–1980s)

The scientific exploration of the Kola North[15] began back in the 18th century. However, a proper systematic study of the territory began only in the 1880s–1910s. Systematic industrial surveys of the region began in the early phase of World War I in connection with the construction of the Murmansk railway and the foundation of the town of Romanov-on-the-Murman (modern-day Murmansk).

After the Russian Revolution of 1917 (the Bolshevik Coup), the scientific development of this territory became even more intense. The Bolsheviks needed resources for the industrial development of the country, which became most noticeable in the mid-1920s–1930s.[16] Faced with the urgent task of industrializing Russia, the Soviet government initiated the formation of the Commission for the Study of the North under the Scientific and Technical Directorate of the Supreme Economic Council of the USSR (1920). In the same year, the Commission was transformed into the Northern Scientific and Fishing Expedition. One of the main activities of the Commission, and then the Northern Expedition, was the study of the Kola North, which was determined by the presence of a railway connecting the center of the country with the only ice-free seaport of the European North of Russia. In the 1930s, a network of scientific organizations was

[15] In the future, I will use the Kola North, the Kola Peninsula and the Murmansk Region as synonyms, because they refer to the same territory.

[16] The history of political transformations on the Kola Peninsula is examined in detail by Paul Josephson (2014) and Andy Bruno (2016). The environmental history of the Kola Peninsula has been studied in most detail (see: Bolotova 2004; 2011; 2012; Bruno 2016). However, these researchers are interested in environmental history, so they pay attention to the mutual influence of Soviet power and the environment, while I primarily consider how the presence of an academic institution influenced the formation of urban populations.

shaped in the Kola North, bringing together various research areas. Biological (including fish-breeding) and agricultural organizations occupied a significant place among them, similarly as various organizations involved in the industrial exploitation of minerals. By 1940, there had been 15 scientific institutions in the Murmansk region.

Academician Alexander Fersman played a significant role in the establishment of an academic center in the Arctic.[17] In modern days, the scientific study of the region is remembered as follows:

> already in 1922, 11 expeditions under the general leadership of Fersman were working in the Khibiny. They did not have a goal such as the search for minerals or mineral deposits, since these were exclusively scientific expeditions (Cit. E. Nik.).

From 1930 until his death in 1945, Fersman was chairman of the Kola Base of the Academy. However, Fersman lived permanently in Moscow and managed the Kola Base remotely, going there three to four times a year. Fersman did not want to and, most likely, could not live permanently on the Kola Peninsula, because since the 1920s he was not only a geologist, but also a scientific manager. From 1932–1937, he was simultaneously director of the Ural branch of the USSR Academy of Sciences and the Lomonosov Institute of Geochemistry, Crystallography and Mineralogy, while continuing to be director of the Kola Center. The Kola Science Center was already established in 1930. It was the 'Tietta' Khibiny Research Mountain Station of the Academy of Sciences,[18] the country's first stationary academic institution in the country's northern regions. Its establishment met the needs of the country's regional economic and industrial development. While it is claimed that the Northern Base of the USSR Academy of Sciences in Arkhangelsk was the first academic institution in the Russian North, it was founded in 1936, i.e. six years after Tietta.[19]

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[17] For more, see: Josephson 2014, p. 192; Bruno 2016, pp. 73–89; on Fersman's role in the institutionalization of organizational processes at the Academy of Sciences, see Graham 1967.

[18] The name 'Tietta' (in Saami language: knowledge, school) was proposed by Fersman. In 1934, the station received the academic status of a scientific base. The Tietta building burned down in 1941. Since then, the name Tietta has not been used in relation to the scientific institution.

[19] Brovina 2019.

Tietta was located 25 kilometers from the future city of Apatity, not far from the city of Khibinogorsk (since 1934 – the city of Kirovsk). Under the auspices of Tietta, many expeditions were carried out to Monchetundra and the Khibiny to assess new mineral deposits, as well as to explore the potential for risky agriculture. These surveys became an effective engine of industrialization, proposing a new approach to scientific field research in the Far North.[20] The most important artifact of early industrialization on the Kola Peninsula was the Northern Chemical Combine Plant (or *Apatittrest*, hereafter "Apatit" or Apatit Trust). Apatit Trust financially supported the work of the Khibiny Scientific Station. The initial budget of roughly 20,000 rubles covered the building, administrative costs, and a fraction of equipment and research. Apatit Trust, the Committee on Chemicalization, and Narkomtiazprom (the Commissariat of Heavy Industry) provided an additional 20,000 rubles for research and 30,000 for expeditions.[21] In turn, the scientists were expected to take an active part in the industrial development of the Khibiny mountain range. The director of the new station, Alexander Fersman, spoke on this topic at the First Polar Conference (1932): "The main goal of the station in Khibiny is not only to gradually grow into the large construction that is going on in Khibinogorsk, but also to become involved in the field of application and use of the entire complex interweaving of chemical and technological processes that should follow from the properties of natural bodies." In general, he envisioned the future of the station as part of "an integrated scientific institution engaged in both classical integrated research and solving industrial problems of an applied nature." [22]

In 1934, the Khibiny Mountain Station was transformed into the Kola Base of the Academy of Sciences (KBAN). It included a geological department, a geochemical laboratory, the Polar Alpine Botanical Garden (PABS),[23] a climatology and meteorology department, and a biocenotic and economic and geographical group. This structure was typical for regional academic institutions. The Northern Base in Arkhangelsk was engaged in following research areas. Formally, the base included only four working groups: Geological, Botanical, Tundra Economy and Water Industries, but the Economic Group of the Pechora Brigade of the USSR

[20] Bruno 2016, pp. 89–97; Wråkberg 2020.
[21] Josephson 2014, p. 192.
[22] Makarova, Petrov 2010, p. 102.
[23] About work of the botanical garden, see: Bruno 2016, pp. 91–92.

Academy of Sciences also operated separately.[24] As we can see, the coincidence of directions is almost complete: geology, biology, and economy; the only exception was meteorology. This confirms the prevailing notion that the main purpose of such organizations was to conduct applied research related to solving regional problems. They were not assigned the tasks of fundamental science. This shows the difference between the northern branches of the Academy of Sciences and the Siberian Branch of the Academy of Sciences (the Novosibirsk Akademgorodok), during the creation of which tasks of a fundamental and theoretical nature were immediately set.[25] The creation of the Siberian branch was also supposed to contribute to the development of the productive forces of a particular territory (Siberia and the Far East).

During World War II, two academic organizations from the Soviet North – the Northern Base of the USSR Academy of Sciences (Arkhangelsk) and the Kola Base of the USSR Academy of Sciences (Kirovsk) – were evacuated to Syktyvkar, in Komi ASSR, which turned out to be the immediate frontline. In autumn 1944, NBAN was re-evacuated to the Kola Peninsula. The 'Tietta' building burned down as early as *autumn 1941*, after its staff had evacuated. The cause of the fire remains unknown. Since the 'Apatit' Trust allocated industrial and residential buildings to the employees of the base, the Kola Base was located in the suburbs of Kirovsk in Kukisvumchorr village (also known as the Apatite Mountain).

In 1949, the Kola Base became the Kola Branch of the USSR Academy of Sciences (KFAN). The change in the status led to the emergence of scientific institutes which were based upon pre-existing departments. However, no significant recognition within the Soviet scientific space followed. According to the recollections of my informants, in the early 1950s, there was no idea what the KFAN of the USSR was. But the very fact of the existence of an academic institution made the Kola Peninsula attractive when choosing a future job, even for graduates of metropolitan institutes. In 1954, one of my informants, recently graduating from the Moscow Institute of Chemical Technology, agreed to go to work on the Kola Peninsula – only after learning that a branch of the Academy of Sciences was located there (Cit. B.G.).

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[24] Brovina 2019, p. 115.

[25] About Novosibirsk Akademgorodok, see in detail: Ibragimova, Pritvits 1989; Josephson 1997; Pushkareva, Zhidchenko 2022.

In the same years, the Soviet and party authorities were discussing the issue of transferring the scientific center to the regional center, Murmansk. This issue was relevant as early as the mid-1930s.[26] While the city itself lacked any academic institutions at that time, the first and only one, the Murmansk Marine Biological Institute, did not appear until 1989. It was relocated from the coastal village of Dalnie Zelentsy, situated 175 km from Murmansk. The main argument in support of this idea was the need for scientific study of the entire Murmansk region and the Kola Peninsula, and not just Khibiny and Monchetundra. In addition, the regional authorities promised to increase funding for KFAS, and erect new buildings for scientific research and residential buildings for staff. But in the early 1950s, geologist Alexander Sidorenko became the head of the branch, and the construction of a scientific town (the future Akademgorodok) near the Apatity railway station began. The future Akademgorodok was located 24 kilometers from Kukisvumchorr. The choice of the construction site was likely connected with the main lines of research of the Kola Center. It was more convenient to carry out geological surveys from a stationary base near Khibiny. In addition, it can be assumed that the needs of the Apatit Trust, whose main production facilities were located in Kirovsk, regarding geological and chemical studies, also played a role in this decision.

Thus, at the beginning of the 1950s, the academic landscape in the Kola North received its center in the form of Akademgorodok, where the leadership (*Presidium*) and most of the scientific institutions – institutes and laboratories – would be located. Besides, the Kola Science Center was finally headed by a person who permanently lived in Apatity (and faced the daily hardships of the locals himself).

The construction of Akademgorodok began in 1954 and continued until the mid-1960s. It was immediately planned that Akademgorodok would be a separate microdistrict where academic institutes would be located. The peculiarity of the situation lay in the fact that the future city was built around several city-forming enterprises at once, including around the scientific center. The location was chosen geographically, next to a temporary settlement of the builders of the apatite-nepheline processing plant. Due to the fact that the construction of the factory was delayed, and the construction of the scientific town had already begun, the leadership of the KFAN decided to create its own infrastructure. Especially

[26] Petrov et al. 2011.

for Akademgorodok, boiler rooms, water supply systems, and roads were built. Perhaps in this regard, in the opinion of the townspeople, it was the construction of Akademgorodok, and not an industrial enterprise, became decisive for the future of the city.

> There was no town at all … We built two central academic houses. Because it was supposed to be only Akademgorodok, and nothing else. Then they began to build a state district power station (Cit. B.G.).[27]

In this passage, we see how the mythology of the campus is reproduced. In the opinion of the informants who lived in Apatity in Soviet times, it was the emergence of Akademgorodok that gave a certain impetus to the development of the city, i.e. the presence of a scientific institution was a city-forming factor of that period: "As soon as the Kola Branch [of the Academy] moved to Apatity, [then] Apatity received the status of a city" (Cit. collective interview). Yet, the emergence of the new city was influenced by the need to increase the production capacity of the Apatit Trust.

A resident of Apatity says:

> The construction of the Presidium began in 1959. … In 1963, we [from Murmansk] came here on an excursion. And from the fifth floor of the Presidium we saw little houses. ... The trust 'Apatitstroy' was already in place, and the city was already under construction. There was already Moskovskaya Street, and an electric train went to Kirovsk through Apatity (Cit. G.N.).

I would like to note that KFAN/KSC employees are convinced that the construction of Akademgorodok became the basis for the new city. According to them, without Akademgorodok, the city of Apatity would remain a railway station.

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[27] A peculiarity of infrastructure formation in the Soviet Union was that most ministries and departments (including the USSR Academy of Sciences) had their own specialized construction organizations that built residential buildings for their employees. In such cases, apartments were allocated free of charge, based on a waiting list. This established system was a form of discrimination against workers, as they often refrained from expressing their opinions to avoid losing the opportunity to obtain free housing. Other ways to acquire private housing in the Soviet Union were very complicated.

> "Without Akademgorodok there would be no Apatity" or "What is the city of Apatity? This is the Kola Science Center, which chose its site and built a scientific center, Akademgorodok (Cit. I.K.).

At the same time, Akademgorodok became the geographical center of the city.

The design of the scientific campus was undertaken by Leningrad design organizations. Under the guidance of the architect Sorokin, the projects of the Akademgorodok itself and the main building of the KFAN Presidium were gradually developed. In the proposed project, the main building of the Branch was to follow the tradition of classical academic buildings. Most of the buildings were designed as multi-story complexes. However, the appearance of Akademgorodok had to be changed because of the famous resolution of the Central Committee of the CPSU and the Council of Ministers of the USSR, condemning excesses in the construction of buildings. Therefore, the Presidium of the USSR Academy of Sciences issued an order stating that

> Soviet architecture should be characterized by simplicity, rigor of forms and cost-effectiveness of solutions. An attractive appearance of buildings and structures should not be achieved by using far-fetched expensive decorative ornaments, but through the organic connection of architectural forms with the purpose of buildings and structures, their good proportions, as well as the correct use of materials, structures and details and high-quality work (Petrov, Tokarev 2013, p. 118).

This resolution caused the modern Akademgorodok to look different than originally planned. Most of the buildings erected in the 1950s and 1960s were two-story cottages (the so-called Finnish or Estonian houses),[28] and only the KFAN Presidium and several residential buildings were multi-story. 'Estonian' cottages were the first houses to be built in the Akademgorodok.

> It was the first thing to appear in Akademgorodok. Everything was placed in these houses. In some [cottages] people lived, in others laboratories were organized (Cit. B.G.).

[28] The cottages were called Estonian, as their design was developed in the Estonian city of Tallinn.

An unusual external appearance of the cottages, and their presence in the city which was being built 'from scratch' with multistory buildings was a source of anecdotal stories. For example, a correspondent of *Sel'skaya Nov'*[29] magazine took photos of the 'Estonian' cottages of Akademgorodok and published them with the caption 'urban village' (Cit. B.G.). While the construction was taking place, scientists were planting trees. A photograph from 1962 has been preserved, captioned:

> The Komsomol members of the KFAN actively participated in the greening of the under-construction of the Akademgorodok.

The trees that were planted back then still grow today. They have become the foundation for Akademgorodok's modern park.

Geographically, Akademgorodok is located in the quarter of several streets: Fersman, Zinoviev and Kozlov. The names of these streets can be considered a form of commemorative practice since they were given in honor of the geologists who worked on the Kola Peninsula and were involved in the development of scientific institutes.[30] Moreover, Fersman Street is one of the central city streets, along with Lenin Street. On the city map, Akademgorodok looks like a park with two-story cottages, surrounded by multi-story buildings, where the KFAN Presidium and residential buildings are located. My informant, a chemist, recalled:

> First, they built the central building, where the Presidium is. Then they built residential, good houses ... And then they began to build panel and brick [houses]. Then they built, in the Zinoviev street, panel [buildings]. These are all academic residential buildings. And the cottages inside [are built] of silicate. … It was the first thing that appeared in Akademgorodok. They were residential or institute (Cit. B.G.).

It was assumed that cottages and panel houses were built as temporary buildings, and after a few years, they would be replaced. But sixty years later, these cottages continue to be used as laboratory facilities. Multi-story

[29] This magazine reported on various aspects of Soviet rural life, including the construction of new houses in villages.

[30] Anatolii Zinoviev (1906–1961) was a geologist who discovered several large deposits on the Kola Peninsula. Evgenii Kozlov (1918–1974) is a geologist who headed the Kola Center from 1961–1974.

buildings within Akademgorodok itself began to be constructed only in the 1970s–1980s.

> Many institutes were also located in cottages and all stood apart. And then they started building huge five-story buildings. In one of the buildings – one half of the building is taken by the Institute of Chemistry, the other half by the Polar Geophysical [institute] (Cit. G.N.).

By the time Akademgorodok was settled (in 1961–1962), the KFAN already comprised five scientific institutes: Geological, Mining and Metallurgical (since 1973 – the Mining Institute), Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials, Polar Geophysical, Murmansk Marine Biological[31] and Polar Alpine Botanical Garden.[32] This structure of the KFAN survived until the end of the 1980s, when new institutions were formed on the basis of departments. For example, the Institute of Problems of Industrial Ecology of the North, officially established in 1989, was created on the basis of the Laboratory for Nature Protection (1979) and the Institute of Economic Problems, organized in 1986, started as a department of economic research back in the 1940s.

3. Everyday life of Akademgorodok in the late USSR: "A huge concentration of educated people per square meter"

By the 1970s, Akademgorodok was formed not only as a scientific cluster, but also as one of the city districts. In accordance with Soviet departmental practice, the KFAN had its own social infrastructure: a polyclinic, a resort, sports facilities, kindergartens and pioneer camps. Although the area of Akademgorodok did not include residential buildings for employees, most of them lived in houses located within walking distance from scientific institutes.

> Akademgorodok started building not only small houses, but we had our own five-story buildings. Fersman street is all ours, academic (Cit. G.N.).

[31] This is the only institute that was and currently is geographically located in Murmansk, because Murmansk is a sea port.

[32] The administration of the Botanical Garden is located in Apatity's Akademgorodok, while the Botanical Garden itself is located in Kirovsk.

The first employees of Akademgorodok lived, so to say, at their workplace. The institutes were located on the first floors, and the apartments were on the higher floors. In 1961, it was like this:

> The main building of the [Geological] Institute was still under construction. ... We received a three-room apartment (apartment No. 42) on Akademicheskaya Street, house No. 1 (now [this address] is Fersman Street 18). On the first floor of this house, … there was our working room. When the Main building was put into operation, we moved to work in it, and an academic polyclinic began to operate in the extension of house No. 18 (from the memoirs of geologist Iia Batieva).[33]

Soviet practices assumed the participation of potential users in the construction of new buildings, at a minimum, participation in the improvement of the area around the construction site or the removal of construction waste. This also applied to departmental buildings. Therefore, stories about *subbotniks* (Saturday communal cleaning sessions) in the new building of the institute are typical narratives about moving to Akademgorodok. Here is a typical example of how official reports presented it:

> In order to assist the builders in completing the construction and commissioning of the building of the Mining and Metallurgical Institute ... the institute's employees organized *subbotniks* to clean the site and premises of the building under construction, assisted in laying trenches for cables and installation of a heating center, which accelerated the supply of heat to the building. In just 9 months in 1973, the Mining and Metallurgical Institute staff worked about 1,100 hours at the construction site (Petrov et al. 2011, pp. 135–136).

Similar narratives are reproduced in modern times, emphasizing the 'feature' of the place – "as a place made for oneself with love."

> It is clear that scientists built all this for themselves. ... Photographs have been preserved [in which] trees are planted, they

[33] Batieva 2005.

> (scientists) have a skating rink, a volleyball court, a *gorodki*[34] playground. Everything was done by them (Cit. I.K.).

KFAN employees describe Akademgorodok as comfortable and convenient for living and working, a kind of 'town within the city'. Descriptions of Akademgorodok often include references to comfortable conditions: "We have a cozy (Akadem)gorodok", i.e. my informants perceive the area as existentially their own. The daughter of a KFAN employee, who left Apatity, recalls:

> In general, I really liked the [Akadem]gorodok itself. And those little houses. It really is like such a magical land. It was great growing up in this forest. In general, it was very comfortable, unlike, say, many other areas of the city (Cit. E.N.).

The territorial compactness of Akademgorodok allowed the KFAN scientific community to form its own local identity.

> A sense of place and identity with this place emerged, among other things, because we all lived quite close to each other (Cit. E.N.).

Also, the formation of identity went through joint activities and leisure practices. Already in the first years of the existence of Akademgorodok, traditions of joint holidays were formed:

> We lived a very friendly life, celebrated all the holidays together, it was noisy, fun and interesting. On New Year's Eve, a Christmas tree was put up on the skating rink, and after the chiming of the clock, almost all the inhabitants of Akademgorodok gathered there (from the memoirs of geologist Iia Batiyeva).[35]

The same was said in relation to the 1970s and early 1980s.

> I had to work for a year after school at the Kola Science Center at the Geological Institute. Sports events and competitions were held there all the time after work. …. As soon as February began, everyone [went] to the mountain [to ski]. ...

34 Gorodki is a Russian folk game similar to skittles.
35 Batieva 2005.

> In autumn, everyone [went to pick] mushrooms and berries. There was life here (Cit. I.K.).

It was a common tradition to celebrate professional holidays. A former employee of the Institute of Energy recalled:

> In the Soviet years, there was no Science Day. We always celebrated Power Engineer's Day on December 22. It is a main holiday for us (Cit. G.N.).

Nowadays, the Day of Russian Science (February 8) is perceived as an official holiday. In informal settings, employees of academic institutions prefer to celebrate holidays that are related to their professional specializations, such as Geologist Day, Chemist Day, Builder Day, and others.

Even the name of the residents/workers of Akademgorodok – 'the academics' – began to be used only in the post-Soviet years and was not widespread in the Soviet urban environment.

The autonomy of social infrastructure in KFAN's Akademgorodok was rather conditional. The interaction of scientists and other citizens occurred regularly and for various reasons. Children communicated most closely because Akademgorodok did not have its own school, and they attended the nearest city schools. Interestingly, opinions were divided whether teachers singled out Akademgorodok children as more capable or well-mannered. One informant thought that this was standard practice:

> It seems that even classes were somehow formed according to the percentage component. We had children of employees of the Kola Branch, children of employees of the Apatitstroy Trust, and a very small percentage of children whose parents worked at the factory (Cit. collective interview).

However, another informant stated that she did not notice any preferences for herself as a child from Akademgorodok.

In general, in the late Soviet period, the presence of the KFAN in the city was quite noticeable. "Scientists were respected by people," according to an employee of the KSC Energy Institute.

Visibility was not related to the number of staff of the Academy of Sciences. In fact, there were not so many scientists in general at the KFAN. According to official data, in 1961 there were 236 scientists, in 1965 – 365,[36]

[36] Samorukova, Petrov 2014, pp. 11–12.

and in 1977 – 763 (of which 15 were Doctors of Science, 225 were 'candidates' or PhDs).[37] U. Wråkberg, referring to the website of the FRC KSC RAS (currently the link is inactive), indicates that the number of employees, scientists and support staff, in the last days of the existence of the Soviet Union was about 4,000.[38] Official statistics for 1984 show that the total number of employees working at the KFAN was 2786, of which 614 were scientists,[39] and in 1988 there were already 1,310 scientists, of which 42 were Doctors of Science, and 416 were candidates of science (PhDs).[40] The sharp increase in scientists is associated with the emergence of new institutions. It should be taken into account that not all scientists lived in Apatity, some of them worked in Kirovsk in the Polar-Alpine Botanical Garden and Murmansk in the Marine Biological Institute. But at the same time, according to a general impression of my informants, the city gave the impression of a scientific center, an academic city. Interestingly, informants repeatedly mentioned a number of people who worked and have been working at the scientific center that was larger than the reality. Visibility was associated, among other things, with the symbolic capital of the Soviet Academy of Sciences. Therefore, its presence in a small town was a symbolic act of raising the profile of the entire town.

4. 'The Complicated Nineties': A Test of Resilience

It was in the early post-Soviet years that the viability of the scientific community and the city as a whole was tested. New opportunities opened up for the scientific community during this period: development of international contacts, and rejection of ideologized and uniform research approaches. At the same time, there was a sharp decline in funding for scientific research and the search for additional sources of income. Here is a description of the situation at the KSC by one of the eyewitnesses of those events:

> There was such a moment that even scientists had to go to the market, trade in fish, because we were simply not paid salaries, [for] nine months. ... It was, fortunately, not for long.

[37] Narodnoe khoziaistvo RSFSR za 60 let 1977, p. 32.
[38] Wråkberg 2020, p. 111.
[39] Cit. Samorukova, Petrov 2014, p. 16.
[40] Nauchno-tekhnicheskii progress v SSSR 1990, p. 28.

> Someone went to the market [to trade], someone completely left [science]. ... I think that those who, in principle, did not care where they worked, left. Most [scientists] stayed (Cit. L.R.).

Another informant recalled that she had to work several jobs in order not to quit the Academy of Sciences:

> We lived very poorly because we worked for three days, we did not work for two days. … I was on duty at night in one of the kindergartens, washing the floors in two stores, doing the cleaning, because there was not enough money. I even took up tutoring, preparing [students] for admission to the Kirov Mining College (Cit. G.N.).

During this period, the majority of Kola scientists had to 'start from scratch.' According to informants, residents of Kirovsk and Apatity had to make a choice between social status and financial support for themselves and their families. Two common practices stand out: leaving science and developing survival strategies within a scientific institution. Survival strategies could dictate passive (waiting) and active (action) modes of behavior. The case of passive experience is best conveyed in the words of an eyewitness:

> We were sitting in the building of the Academy of Sciences, looking out the window, and waiting for the salary. I remember this phrase: "Where is the money?" "Money [was sent] from Moscow". We sat, looking out the window, waiting for the money to appear out of nowhere (Cit. collective interview).

An active attitude, as can be assumed, was stimulated by the mutual interest of Russian and foreign scientists. First, there were contacts on a personal level, followed by offers of internships and participation in conferences. Many employees of the KSC took advantage of such invitations to join international scientific networks.

> I made two trips to Finland and to Norway, and at the University of Lapland I studied under the Arctic Study Program for three months, and then went to Norway, at the University of Tromsø, I did an internship, already scientifically,

> I collected materials for my PhD dissertation (Cit. collective interview).

However, by the early 2000s there were fewer such opportunities.

I must emphasize that scientists, due to their professional specifics (constant readiness for learning and the so-called 'soft skills'), have a significant potential for viability, which manifests itself in turning their specific skills into a source of income. Therefore, the option of leaving science and moving into knowledge-intensive industries became a common survival scenario of the 1990s.

> It seems to me that all this happened due to the fact that we had a huge number [of employees], more than 5,000 people, well-educated, with different views and attitudes [than most citizens]. They were ready to take risks and do something new (cit. E.K.).

The most common occupation was the supply of computer hardware and software.

> A lot of our people have moved into IT or other fields. Everything new we had was created by those who, after working at the KSC, encountered a difficult [economic] situation and went on to do something different (cit. E.K.).

The same informant talks about researchers who had climbing experience and got engaged in the sale of sports equipment: "their business is built on what they know, love, and what they have to offer."

At the same time, in the early 1990s (according to other recollections, in the late 1980s), employees of the Geological Institute began to hold an exhibition trade fair The Stone Flower, where minerals found on the Kola Peninsula were exhibited and sold. It was attended by master stone cutters and collectors. The Stone Flower turned out to be a way to combine professional experience and the need to earn by selling ornamental stone products.

> It was a time when only a lazy master would not invent here something with his hands (Cit. O.P.).

The exhibition is still organized and enjoys great interest among tourists and residents of the Murmansk region.

The funding situation began to improve in the late 1990s when research funding changed. In addition, for the KSC, its applied orientation turned out to be a salvation, as future development began to be financed by big business.

5. Concluding Remarks

The development of the scientific space in the Soviet Union proceeded from the center to the periphery, often repeating the colonization approach of the geographical and symbolic development of the marginal territories of the North, Siberia and the Far East. Against this backdrop, the case of the Kola Science Center of the Russian Academy of Sciences is a vivid illustration of structural changes in the organization of science in the country: from the support of primarily applied natural science research to the conduct of social and humanitarian research. However, social research was started here at the very end of the Soviet era (in the 1980s). It can be argued that the Kola Akademgorodok turned out to be a kind of experiment in relation to other Akademgorodoks. It was the first to be built and, unlike other Akademgorodoks, focused on applied research.

The idea for a stationary research base came from a well-known geologist and authoritative scientist of the Academy of Sciences, Fersman, who also served as the base's first director and scientific supervisor. At the same time, the head did not live permanently on the Kola Peninsula but came for the field season or as needed. A geologist permanently living in Apatity appeared only in the 1950s.

The establishment of the academic institution met the need for industrial development of the territory of the Kola Peninsula. The mining and processing (metallurgical) industry on the Kola Peninsula was the basis for the economic development of the area. Precisely for these reasons, geology, geophysics, chemistry, power engineering, i.e. scientific disciplines closely connected with the mining and manufacturing enterprises of the Kola Peninsula, turned out to be the most demanded scientific directions, while social and humanitarian research began to develop only in the 1990s.

Throughout the Soviet period, the Kola Branch of the Academy of Sciences, as a small center, was largely oriented towards regional specifics: a comprehensive study of the natural resources of the Arctic, starting from mining and chemical resources, and ending with agricultural resources. Also, its unique location in the Soviet Arctic made it possible to conduct

regular geophysical surveys. The location of most of the institutions in a specially built Akademgorodok in the city of Apatity also contributed to the complexity of scientific developments.

The scientific space in the Soviet North was often structured by scientific organizations that were not part of the system of the Academy of Sciences, but were independent applied institutions.

The KFAN is the first case of the development of precisely academic science on the periphery of the country.

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