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From Nomads to Nomadpolises: Urbanism
in Kazakhstan between Heritage and AI

Contemporary urbanism faces the challenge of balancing technological progress and cultural sustainability. For Kazakhstan, with its nomadic heritage and unfinished urbanization, is the concept of neo-nomadism, synthesizing mobility, digital technologies and environmental principles, relevant? The potential for adapting nomadic traditions in urban design, global trends and local characteristics, historical trends in urbanism related to the understanding of mobility as a key element of urban planning were explored. It seems that contemporary urbanism is moving towards a synthesis of adaptability, inclusiveness and sustainability, but retains the legacy of modernist paradigms, and the cultural and historical context suggests the integration of traditional elements into the modern urban planning model of Kazakhstan.

Keywords: neonomadism, urbanism of Kazakhstan, cultural sustainability, technological progress, nomadic heritage, adaptive urbanism, digital platforms, socio-cultural approaches, spatial inequality.

Introduction

The global trend towards "cultural sustainability" in urban planning poses a virtually impossible task for researchers: how to combine the authenticity of traditions with the demands of the technological era, so from Tokyo to Oslo, specialists are looking for a balance between heritage and innovation. The creation of a cultural landscape plays an important role in the approaches of architects and urban planners — the transition to a harmonious coexistence of the artificial and natural environment [1]. Thus, in the conditions of ecological crisis and irreversibility of natural processes, which are the cause of the active period of industrial development in Kazakhstan, when there were many random cities with industries scattered at a great distance from each other, which complicates the revision of the provisions of the rooting of the population and a new ideology of architectural and urban planning, taking into account the ecological approach, local demands of culture in the development of the surrounding space — the role of the cultural landscape increases, which provides fundamental conditions for the creation of livable sustainable cities. However, Kazakhstan, with its unique nomadic past, has a fundamentally different path — to make a time loop and show the transformation of its mobile movement in space with a digital instrument, which is manifested as neonomadism. It is within the framework of Sartre's existentialism that we can discuss the fact that the subject in the modern realities of urbanism does not have a fixed identity, which served as a prerequisite for the formation of the theory of neonomadism, giving perspective to the emerging cultural trends of the mid-twentieth century, where, within the framework of poststructuralist theory, the subject is increasingly defined as a decentred construct of personality, deprived of the Center of stability in its habitat, thereby declaring a departure into the activity and processes of life, flexibly responding to the variability of the environment, actively and mobile moving, and thus, being indefinite in the qualities of subjectivity and identity, which corresponds to the logic of neonomadism. Initially, before the moment of transformation of the urban environment, the subject creates himself, having some common conditions of existence for all people, but, since a person is an acting subject, it is not enough for him only what he is at the present moment in time, and there is his desire to become someone else, to go beyond his boundaries and establish a connection with the future. Life in such conditions is a process of constant formation, permanent transcendence. This state of the subject in the environment is a concept born at the junction of the philosophy of the Great historical migrations that left their cultural trace from the steppe regions of Eurasia and digital technologies that challenge standard urban paradigms, offering an alternative to the rigid static nature of "stone" forms, and offering in their extreme manifestation in the commodification of culture in the direction of "ethno Disneylands." The principles of the proclaimed state

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program "Digital Kazakhstan" at this stage manifest the need to combine technology, culture and sustainable development, which will allow expanding hybrid models in all industries, where there can be: "traditions + innovations," which is typical for architectural activities, also, the role of the state combines the drivers of digital transformation on a national scale, which can become a catalyst for socio-economic indicators — job creation, GDP growth, etc., while simultaneously raising critical ethical questions regarding cybersecurity and data protection.

Methodology and discussion

The modern global trend towards "cultural sustainability" in architecture and urban planning actualizes the search for a balance between the authenticity of traditions and the demands of the technological era. From Tokyo to Oslo, urbanists strive to harmonize heritage and innovation, creating cultural landscapes as a symbiosis of the artificial and natural environment [1]. However, this process faces a fundamental contradiction: how to preserve the identity of a place in the context of rapid modernization? The task becomes especially difficult in regions with a centuries-old history of nomadic cultures that have changed over the course of one century, where spatial development was initially based on dynamic interaction with an ecosystem of a cyclical temporal and spherical spatial type. Kazakhstan, with its unique nomadic heritage, demonstrates the paradox of post-Soviet urbanization: the industrial expansion of the 20th century gave rise to satellite cities of production facilities scattered across the endless steppes, which disrupted the natural dialogue between man and landscape. Today, in the conditions of an ecological crisis, it is necessary to rethink the ideology of territorial development taking into account the local cultural ecology — a return to the principles of adaptive development of space, where mobility and cyclicality are key parameters of sustainability, which is rooted in the modern philosophy of Deleuze and Guattari — "nomadology," which contrasts static structures with the dynamics of nomadic practices. The cultural landscape of nomads, formed by centuries of experience of symbiosis with the ecosystem, of course, has an alternative to static urban models, and its temporality is not a linear progression, but a rhythmic pulsation of seasonal migrations and cyclicality, which reflects the synchronization of human activity with natural phenomena. Such principles and prerequisites of the new urbanism distinguish it from the static, stone-centric model of urbanism, which fixes identity in monumental forms, where, in contrast to it, there is the principle of the cultural landscape of the nomad, which manifests the processes of dynamic subjectivity and where identity is constructed by continuous interaction with the changing environment and the "zero-dimensional unit" of space and time, which occurs each time in a new place, as an expansion of territory in a new place — the reassembly of the nomadic dwelling. Density and competition on the land for nomads was characterized by the demand for ancestral land, and the need to manifest life in rooting in the form of rituals of "generation of the clan" — zhetiata on the ancestral land — atakonys, which has in the long term the generation of a spatio-temporal integral unit. Such a system in the traditional society of nomads represented the organization of the future and had no fear of the future, because the system was called upon to conquer space, with all subsequent generations that would come to earth every 7 generations. This approach finds unexpected resonance in poststructuralist theory, which deconstructs the concept of a stable "I." As J.-P. Sartre noted, the existential subject is deprived of a fixed essence — he "projects himself" through action, transcending existing conditions [2]. Like a nomad, a modern city dweller exists in a mode of permanent formation, responding to the challenges of the digital era, where spatial and temporal boundaries dissolve. According to Bauman, digital nomads are a product of "liquid modernity," where the mobility of labor and housing is becoming standard practice.

However, the danger lies in the possibility of commodification of this mobility, reducing cultural heritage to simulacra of authenticity — ethno-villages, souvenirs. More and more often, the opinion appears about the revival of the cultural landscape of the nomad as a living ecological practice, and not its museumification, which is capable of offering structural solutions for the cities of Kazakhstan, and not ethno-Disneylands in the form of archaeological cities. The cultural landscape of Kazakhstan assumes the very type of settlement in open space from scratch as the formation of a zero-dimensional unit, which determines the constant gathering in a new place of a nomadic dwelling — kiizui (yurt) — this is the archetype of adaptive housing, which uses modularity, variability and can be decomposed into smaller options) [3], energy efficiency, and the cyclicality of its collection and disassembly, transfer to a new place by a three-generation family birata, consolidating the spatial arrangement with the ancestral flow of time on the territory of ataqonys. Many projects have already been presented that are trying to revitalize the yurt as an architectural module, especially since the nomadic dwelling has become the material heritage of nomadic peoples, recog-

nized by UNESCO, confirming the correctness of the chosen path for its adaptation to modern realities. In addition to individual searches: when the ideas of metabolism were being worked out, there were attempts to make a tree on which mobile capsules like the "yurt" by the architect Saken Naryn were located. The modularity of the nomadic dwelling involves the development of temporary pop-up structures that can be adapted for industrial-scale production. Also, we can highlight the cyclical nature of the nomadic culture, which involves the integration of seasonal rhythms in the planning of public spaces, and the use of mobile architectural modules that are adaptable to climate change, which implies the mandatory restoration of the ability to use ecosystem services through the revitalization of steppe biocenoses in urbanized areas. We can say that the nomadic heritage can become not only an object of retrospection, but a methodological tool for designing cities, where temporal flexibility and ecological synergy can replace the rigidity of industrial paradigms.

The objective of the research is to reveal the potential of dialogue by rethinking the cultural landscape as a space of continuous interaction between the memory of the place, anthropogenic impact and resilience of ecosystems.

It should be noted that a new structure of connections for urbanized territories is emerging, in the ratio of "cultural sustainability vs. technological progress," which in the context of the Kazakhstani experience is possible after "nomadic heritage vs. urbanization" takes place, which can develop a dialogue in the philosophical framework: "neonomadism + existentialism," therefore it is reasonable to talk about the practical significance of adapting the principles of the cultural landscape in modern settlement areas in Kazakhstan.

The global context of neonomadism suggests a transition from futurism to cultural regeneration of the background of local culture. The world community, having realized the dead end of universal urban models, is moving towards the concept of regionalism and hyperlocal solutions that help to take into account the identity of the place, becoming a key resource, which, for example, is what the specialized institute TOO "Research Institute" Almatygenplan is doing, identifying vernacular areas within the urban development, looking for originality in local places of residence, exhibiting information steles and opening digital twins of areas. The ongoing practice is an attempt to solve the key problem of today's urbanism, which is trying to solve the spatial and social inequality of the material environment outside its economy, aggravating this with standard approaches from the period of globalization, placing attributes of improvement in space, which does not imply economic restructuring of territories, reinforcing all efforts only with digital technologies, which is evident in the uneven fragmentation of urban spaces, and their "piecemeal" functions for a city dweller. Such tendencies are further supported by the transfer of functionality of monocentric cities to planning in the conditions of Kazakhstan to polycentric agglomerations, which essentially do not exist on the territory of the Republic, except for Pavlodar, since the rest do not meet the principles of agglomerations, even Almaty and Astana. There are other social problems of territories such as infrastructure overcrowding, such as hyperdensity of the city center, especially in Astana and Almaty, which has negative consequences — smog and pollution from the exploitation of urban spaces — all this spreads to the suburbs, erasing the boundaries between the "center" and the "periphery" in an ecological crisis. There is also a reverse trend — rustification — a phenomenon of movement from the "periphery" to the "center," which is not just an aesthetic trend as in developed urban communities, but a symptom of deep economic transformations. For Western urbanism, for example, this process reflects the search for a balance between technological progress and a "return to the land," and requires critical thinking in order to avoid reproducing inequality under the guise of "naturalness." For Kazakhstan, where rural-urban ties are historically strong due to a still living tradition — a patriarchal nomadic culture, rustification is a process of economic transition from one way of life to another, which led to economic migrants to cities from villages in the 90s as a reaction in all CIS countries to the Soviet inequality in settlement, and as a legacy of the industrialization of the territory, programs when the consolidation of residence in certain places took place. However, in the conditions of developed economies, the same tendency has a different character of broader processes of de-urbanization, counter-urbanization or such a phenomenon as agro-urbanism, where the boundaries between the city and the village become permeable, and the hierarchy of the "center-periphery" is revised in favor of the inclusion of elements of the village in the center [4], which has at its core a postcolonial challenge, since the universalization of Western models ignores the experience of the Global South [5].

In Kazakhstan, migration processes have become the onset of non-urbanized elements in a new environment, therefore, among such problems, neonomadism can become a tool for the formation of alternative models of urbanization of many segments of the population, of course, subject to taking into account the local context and social justice, with the existing social identity of these groups of the population, in the differentiation of which there is, as a socially conditioned index of education, the degree of involvement of women

and men in the labor market, the possibility of professional growth and equal rights in the new environment. The presence of social ties — family, friends, diasporas, which can simplify adaptation in the city and the level of development of mutual assistance networks and horizontal communications within migrant communities, expanding access to a stable source of income and the availability of housing. It should be noted that social changes in urban areas lead to the de-actualization of territories — historical spatial nodes of urban territories, which is clearly seen in the example of the two capitals of the republic — Almaty and Astana, where, thanks to these processes, the framework of the urban fabric is changing. These changes can be divided into several categories: economic, when the transfer of business centers and key investments to new areas leads to the extinction of old industrial and residential areas, and the growth of real estate prices in business districts is characterized by the "displacement" of the local population to the periphery; and also socio-demographic changes, as active internal migration forms new social groups and cultural communities, often breaking the historical continuity of the environment. In many ways, the aging of the population in the "old" areas of the city leads to the lack of an influx of young families, leading to stagnation of the local infrastructure; and cultural changes, as the substitution of an authentic atmosphere and local cultural practices with a partial loss of architectural monuments in the center, especially the Stalinist Empire style in the center of Almaty. As a result, we can observe infrastructural changes: excessive and accelerated construction of business centers, shopping and entertainment complexes and modernization of the transport network — new highways, interchanges, structures that fragment historical areas and form "islands" without active urban life, such as, for example, the striking example of Al-Farabi Avenue in Almaty. Technological changes also occur in the urban environment with the introduction of "smart" technologies and digital services that are used only in new areas — smart stops with traffic monitoring, smart lighting of city areas, which does not always affect the outskirts of the city.

Strengthening the role of social networks in the formation of public spaces, as a superstructure over the physical environment becomes the basis of online communications for already urbanized strata. In such a situation, there is also a rapid technological unification of architecture in the "international style," which levels out the aesthetic and cultural uniqueness of the city environment, while in the developed economies of the world there is another trend — dehumanization of the urban environment: the growth of technological unemployment, the formation of "superfluid people" in the context of robotization and the crisis of traditional social ties — such problems in general lead to the need to develop a different approach in urbanism: to show an understanding of the place of a person with requests for digital information in an urbanized environment, such as neonomadism — a concept that emphasizes mobility, the absence of a center as a structuring unit, playing out the "temporality" and "fluidity" of modernity in the presence of hybridity of environments as key features of post-urban space. It should be noted that the absence of a center is a contradictory paradigm of perception of space among nomads, because the sacred landscape of nomadic culture — ataqonys — functions as a "place of memory" (lieudemémoire) in the terms of Pierre Nora, where "memory crystallizes and closes in on itself in order to resist time and oblivion". It can be added that "places of memory are born and live by creating an aura of the symbolic around themselves. They exist thanks to their ability to reconstruct the endlessly renewable act of their generation" [6]. This act of self-reproduction is what distinguishes the Turkic nomadic culture: "new place vs. new time." Contemporary urban and social transformations associated with neo-nomadism raise the question of rethinking spatial, economic and cultural paradigms, since this concept, rooted in the philosophical tradition of "nomadology" of Gilles Deleuze and Felix Guattari, opposes the static structures of sedentarism to dynamic forms of existence based on mobility and the hybridization of physical and digital realities [7]. However, in the context of Kazakhstan, where urbanization retains features of "incompleteness," for example, abandoned settlements around industrial zones, the possibility of introducing mobile cyclical settlement models is faced with the lack of infrastructural and social platforms capable of harmonizing global trends with the local specifics of territorial development, and its missing technological potential.

When discussing economic prerequisites, there are theoretical foundations and an economic context for the transition to the "fourth technological order," which is characterized by the digitalization of social reproduction, which transforms human subjectivity in the urban environment. As Zygmunt Bauman notes, "liquid modernity" turns mobility into a new social norm, giving rise to "digital nomads" — agents whose existence is mediated by the gig economy and remote work [8]. The "gig" term has spread to any temporary or project work, which has become possible thanks to the development of the Internet and digital platforms that have simplified the search for performers. However, this flexibility carries risks: the growth of the precariat, due to the lack of social guarantees for the self-employed, such as taxi drivers — Uber, Yandex. Thus, the

precariat often finds itself in a "gray zone" — without access to credit, education, pension savings, and their housing instability due to the dominance of short-term rentals, such as Airbnb, leads to additional spatial inequality. In Kazakhstan, such processes are aggravated by the underestimation of the historical context of urbanization, where the criticism of "pseudo-cities" as "unfinished systems" often ignores their connection with the ideology of the Soviet industrial legacy, combining all these tendencies and the hopelessness of the development of some territories. Spatial paradoxes and the postcolonial challenge, as well as the concept of the "postmetropolis" by Edward Soja, focus on the fragmentation of urban spaces, where temporary communities and mobile practices dominate traditional forms of sedentarism [9]. However, the universalization of Western urban models, as Ananya Roy emphasizes, leads to ignoring the cultural diversity and postcolonial strategies of the Global South [10]. In Kazakhstan, this is manifested in the borrowing of "flexible" architectural solutions that have filled intermediate zones — coworking spaces, lofts — which, when built into and becoming gentrified areas, make them inaccessible to low-income groups, thereby increasing social stratification and forming spatial inequality through these innovative methods.

Historical models and local perspectives in the experience of Japan and Scandinavia demonstrate the possibility of the so-called synthesis of traditional and modern approaches. The famous manifesto project of Kenzo Tange "Edo-Tokyo Metabolism" in the 1960s embodied the principles of the philosophy of "wabi-sabi" as an aesthetics of impermanence — in megastructures with replaceable modules, in the Capsule Tower of Nakagin K. Tange, 1972 [11], illustrating metabolism as a precursor to such concepts as neonomadism in the new round of digitalization. Similarly, the Scandinavian concept of "Modular Living" (BIG Architects) illustrates the trend, adapting the historical forms of the Vikings' longhouses to the requirements of mobility and climate challenges [12]. For Kazakhstan, the conceptualization of such projects could become the basis for the development of "synthetic environments" that combine authentic nomadic traditions of settlement mobility with digital infrastructures: "shanyrak" as a symbolic center for connecting a community, clan, family, but the Kazakhs no longer settle in such forms, and even in 7 generations, as zheti ata. However, the lack of political will and interdisciplinary dialogue between architects, philosophers and sociologists makes it impossible for new unification processes to take place on a new ideological platform, since an interdisciplinary approach presupposes overcoming the romanticization of the mobility of post-nomadic communities through a critical analysis of its social consequences in other economic and social environments and those economic prerequisites that will lead to unexpected consequences of the destruction and marginalization of social ties. As Dmitry Zamyatin notes, "co-spatiality" requires taking into account local identity and historical memory [13].

Results

Are there prospects for digitalization in this context, given that it forms the foundation of neonomadism? With the Digital Kazakhstan program already launched and the number of remote workers increasing after the pandemic, its impact on economic and social structures warrants further exploration. In terms of the search for cultural branding, there is a return to post-nomadic concepts in the spirit of architectural innovations using modular systems, where "kiiz ui" is a module that is transformed — it increases or decreases as tasks are received by residents. For such experiments, a laboratory has not yet been created that could use an interdisciplinary approach, strengthening the conceptual side of the cooperation of architects, sociologists, IT specialists, and there is no legal adaptation of the mature unit of the "ethnic module" in the SNi SP RK, although the analysis of "kiiz ui" as spatial structuring and temporal in culture has already been expressed, but there are no implemented models in urban planning and volumetric design. Neonomadism in Kazakhstan is characterized not by a return to nomadism and complex interaction of the physical environment and its inhabitants, but by a rethinking of mobility, which can have the same principles as flexibility in modular designs, sustainability in environmental technologies, and then identity in the very complex of approaches.

Projects like "Nomadic AI" (Mongolia) show how traditions can become the basis for innovation and the task here is to avoid simulacra that turn nomadic heritage into an unprofitable decorative operating system for cities of the future. We can say that there is a need for a balance between innovation and sustainability, offering Kazakhstan a path where neonomadism becomes not a blind copying of global trends, but a tool for revitalizing the local cultural landscape. However, most projects focus on form, not on the philosophy of heritage. The Kazakhstani variant can extract meta-principles of spatio-temporal units from the nomadic culture: cyclicity, mobility, sphericity — and transform them into an urban code. If there is a cultural and historical challenge of how to combine "authenticity vs. relevance," transforming the key dilemma, which is fo-

cused on the possibility of avoiding two extremes — museification of the tradition of clan reproduction of the population — Zheti ata — an artifact of time and settlement in territories by modules — clan units, as a museum exhibit and also cultural appropriation, within the framework of "kiiz ui," more often associated with us as a brand for tourists. Also, we can say that spatial thinking is a means of philosophical and cosmological cognition of the world in the traditional mythopoetic picture of the world of nomads, which generates knowledge and allows concretizing abstract concepts such as time, clan, heritage, in the form of meaningful spatial structures. This thinking is related to the concept of space as a category through which more complex concepts can be understood. The question of neonomadism in the context of Kazakhstan requires an analysis of both the historical and cultural roots and the prerequisites for development in modern socio-economic conditions, so neonomadism can be defined as an attempt to adapt nomadic practices using digital technologies, sustainable economic approaches and flexible social models that form a new educational paradigm.

The economic context of Kazakhstan is a classic system of raw material-dependent economy, where the economy is focused on oil, gas and mineral extraction, which creates risks of monoculture and weak diversification, while urbanization covers only 60 % of the population, and rural regions maintain links with the agrarian traditions of cattle breeding and farming of the Soviet period. At this stage, there is a turn towards digitalization, through the active implementation of IT technologies under the Digital Kazakhstan program and an increase in the percentage of remote work. Thus, all these aspects of neonomadism are covered by social and cultural dimensions. Of course, there is historical memory: nomadic culture is part of the national identity, which creates the basis for re-interpretation of traditions, namely those associated with spatial sensations and expectations in culture. Thus, an indicator of new trends is the mobility of economic migrants among the population, and then the growth of the number of "digital nomads" — freelancers, IT specialists, whose number has slightly increased from the influx of resettlers from a neighboring country, which is why interest in alternative forms of life in the urban environment has increased. At the same time, ideas are being formed in the field of environmental awareness of the population: a general international trend, such as the desire for sustainable development in response to climate challenges — soil degradation and the Aral problem, desertification, etc. rests on economic problems of overcoming through diversification: reducing dependence on the raw materials sector, developing creative industries, which cannot be solved in isolation from infrastructure facilities that are awaiting the expansion of transport networks such as the New Silk Road project and the need to develop digital infrastructure and the Internet in the regions to 99 % under the state program.

To diversify the directions in the economy of free movement over a large territory, there are renewable energy sources (RES), which Kazakhstan inherited as a technological province from countries where diversification had already occurred due to the lack of energy sources of natural origin. Various nomadic models as a way to reduce the anthropogenic load on the landscape of Kazakhstan, with uneven development of regions, suggest a response as cultural conservatism, as the unpreparedness of part of society for experimental models. If neonomadism exists in philosophy for the digital age, then this is not a return to nomadism, but a revolution in understanding space: its principles: dynamic identity, when the city can be thought of as a "network of temporary parking lots" — coworkings, pop-up housing, where residents "migrate" between functions: work-rest-study, also taking into account eco-cyclicality: landscape zoning by analogy with nomadic routes: summer "green" quarters / winter energy-efficient clusters. The spherical spatiality of a public place—formed through round platforms and radial transport axes — shapes social interaction while dissolving the traditional center-periphery hierarchy. Rather than contradicting the centric spatial culture of nomads, it reproduces and reinterprets it within a contemporary framework of socialization. There are global parallels: "The Line" (Saudi Arabia): a linear city that rejects radial planning, but ignores the cultural context. The project "The Line" (as part of the NEOM megalopolis) is a linear urban structure 170 km long, designed as an alternative to radial and grid planning within a single framework, as well as infrastructure — with AI integration for resource management, transport and services, but the project is criticized for ignoring local cultural identity. Thus, the linear structure, borrowed from the futuristic concepts of Linear City by Arturo Soria y Mata, does not take into account the historical patterns of settlement on the Arabian Peninsula, where compact oasis settlements dominated. Experts note the dissonance between NEOM's technocentrism and the cultural heritage of Bedouin communities [14–16]. The new satellite city of Alatau near Almaty is intended to become a city with a digital filling, and it is being built by architects from another region — Surbana Jurong (Singapore) — a strategic partner of the project. The company has developed a master plan for the city, including zoning into four thematic areas (Gate, Golden, Growing, Green) and the integration of smart technologies. The city of Alatau is an ambitious experiment in urbanism in Kazakhstan, combining global Smart

City trends with local economic and cultural tasks, outside the historical concepts of spatial settlement. The Government of Kazakhstan provides the regulatory framework, the creation of a special economic zone — the Alatau SEZ and infrastructure investments. The closest in functional reconstruction for Kazakhstan is the Venice Biennale 2023 — the Mongolian pavilion with the Nomadic AI project — AI that manages resources based on the principles of nomadic livestock farming [17]. The project's principles involve a synthesis of Mongolia's nomadic traditions and artificial intelligence, such as resource management based on the principles of nomadic livestock farming — algorithms that optimize the use of water and pastures based on seasonal migrations. There is a symbiosis of analog and digital practices using IoT sensors to monitor ecosystems, integrated with the oral knowledge of pastoralists. Scientific significance is gained when technologies can enhance, rather than displace, traditional ecological knowledge, in line with the global trend towards "digital indigeneity" [18], where AI becomes a tool for preserving cultural heritage [19]. Both projects question traditional urban paradigms, but demonstrate opposite approaches to the cultural context: "The Line" embodies a technocratic utopia that ignores historical patterns, while "Nomadic AI" offers a model of symbiosis, where technologies serve as a conduit for local knowledge.

Conclusion

The synthesis of traditions and innovations enables the Neonomadism movement in Kazakhstan to rethink urbanism by adapting nomadic principles — mobility, cyclicality, and sphericity — to the realities of the digital age. The key archetype of spatiality is the spatiality of the mobile dwelling "kiiz ui" (yurt), which becomes the basis for designing modular, energy-efficient structures, where form follows not only function, but also cultural memory. Practical solutions involve a multi-level approach, for example, the philosophical level brings integrity to the ideas of combining spatial and temporal principles of constructing a new reality: the unity of the framework is transformed into an urban code, where the city is a network of interchangeable modules. The social layer involves a transition from "improvement" to the creation of an identity of public spaces that take into account traditional shells as a system of form-building in bodily experience and collective memory. Technological level: AI planners optimizing resources according to the logic of nomadic routes. Based on existing approaches, some technologies enhance, rather than displace, traditional ecological knowledge. We can also note the risks and limitations that may arise on the path of design — the creation of simulacra of authenticity: romanticization of nomadic heritage without taking into account socio-economic realities (gentrification, precariat) and technocratic utopianism that ignores historical specifics in favor of digitalization. In Kazakhstan, a conceptual basis has matured for the development of an "ethnic module" in the building codes SNi SP RK on the basis of an institution with a scientific department in an interdisciplinary laboratory with participants: architects, ethnographers and IT specialists.

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Көшпенділерден номадполистерге дейін: мұра мен жасанды интеллект арасындағы Қазақстандағы урбанизм

Қазіргі урбанизм технологиялық прогресс пен мәдени тұрақтылық арасындағы тепе-теңдікті теңестіруге тап болуда. Көшпелі мұрасымен және аяқталмаған урбанизациясымен Қазақстан үшін ұтқырлықты, цифрлық технологиялар мен экологиялық қағидаттарды синтездейтін неономадизм тұжырымдамасы өзекті болып отыр. Мақалада көшпелілердің дәстүрлерін қала дизайнына бейімдеу әлеуеті, жаһандық үрдістер мен жергілікті ерекшелектер, қала құрылысын жоспарлаудың негізгі элементі ретінде ұтқырлықты түсінуге байланысты урбанистиканың тарихи үрдістері зерттелген. Қазіргі урбанизм бейімделу, инклюзивтілік және тұрақтылық синтезіне бет бұрған сияқты, бірақ модернистік парадигмалардың мұрасын сақтайды, ал мәдени-тарихи контекст дәстүрлі элементтерді Қазақстанның қазіргі заманғы қала құрылысы моделіне біріктіруді көздейді.

Кілт сөздер: неономадизм, Қазақстанның урбанизмі, мәдени тұрақтылық, технологиялық прогресс, көшпелі мұра, бейімделгіш урбанистика, цифрлық платформалар, әлеуметтік-мәдени тәсілдер, кеңістік теңсіздігі.

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От кочевников к номадполисам: урбанизм в Казахстане между наследием и искусственным интеллектом

Современный урбанизм сталкивается с вызовом баланса между технологическим прогрессом и культурной устойчивостью. Для Казахстана, с его кочевым наследием и незавершённой урбанизацией, актуальна концепция неономадизма, синтезирующая мобильность, цифровые технологии и экологические принципы. Исследованы потенциал адаптации кочевых традиций в проектировании городов, глобальные тенденции и локальные особенности, исторические тенденции в урбанистике, связанные с пониманием мобильности как ключевого элемента городского планирования. Представляется, что современный урбанизм движется к синтезу адаптивности, инклюзивности и устойчивости, однако сохраняет наследие модернистских парадигм, а культурно-исторический контекст предполагает интеграцию традиционных элементов в современную градостроительную модель Казахстана.

Ключевые слова: неономадизм, урбанизм Казахстана, культурная устойчивость, технологический прогресс, кочевое наследие, адаптивная урбанистика, цифровые платформы, социокультурные подходы, пространственное неравенство.

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