

# Multifunctional urban environment and building typologies. Mix of functions at the ensemble and object level in Russia - challenges and limitations

M A Pidodnia

Associate partner KCAP Architects&Planners, Piekstraat 27,  
Rotterdam, 3071 EL, NL

E-mail: m.pidodnia@hotmail.com

**Abstract.** A critical part of the livable city approach, mixing of functions has become an essential instrument of contemporary urban planning. What are the ways then, mixed-use is implemented in present-day Russia? What western projects can we reference as precedents? Many circumstances must come together to enable implementation of mixed-use in a city: conducive overarching planning ideology and relevant policies; favorable conditions of the real estate market; appropriate governing principles of the development plan; as well as creativity of an architect. This study examines the situation at different scales from citywide and district level plans, to individual buildings, and proposes a methodology for comparing the regulatory conditions for the implementation of mixed-use in the Land Use Rules of several large Russian cities. It is possible to conclude, that mixed-use has been established as a planning objective. What remains to be done is the change in the conditions under which these goals can be achieved.

## 1. Introduction

It appears that architects, city planners, residents and governing bodies have reached a consensus on the character of a contemporary city. All agreed that it should be comfortable, ecological, lively.

Mix of uses is understood as the key factor determining the diversity and the appeal of the urban environment. A *livable*, robust and dynamic city, we now know, depends on the extent uses are mixed. How then is the concept of mixed use being implemented in contemporary Russia? What western precedents could we look to for comparison? This article makes attempt to analyze the situation at all scales from city plans to individual buildings.

## 2. Toward the better urban environment in Russia

Long coming, functional diversity has finally been acknowledged as a positive in Russia. Its acceptance is reflected in the substantial recent work on the design standards for urban environment and public space [1], undertaken by DOM.RF and STRELKA.KB with participation of both foreign and Russian specialists. In their work, these experts tie the degree of mixed-use within different models of development to the relative location of a neighborhood in a city, relative density and the level of connectivity by public transport. They write: “As a general rule, only the historic centers of Russian cities match the criteria of sustainability and quality of urban environment. Only they can meet the demand of a significant portion of the population, 58% to be precise, to live within the



Content from this work may be used under the terms of the [Creative Commons Attribution 3.0 licence](https://creativecommons.org/licenses/by/3.0/). Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.

walking distance of work. Application of the *Central Model* of the new Standard is geared to the development of the city centers – diverse territories where residential, commercial, recreational, and retail functions are mixed.”

### 3. City level

In their “*Strategic Masterplan for Perm*” KCAP Architects&Planners proposed a planning methodology of intensive mixed-use for a post-industrial Russian city. Incidentally, KCAP-designed diagram explaining mixed-use concept for Perm, made “*Project Russia*” cover page of the Master Plan issue.

Mixed-Use Strategy [2] represents the idea of distributing functions based on the structure of the city. Higher intensity of uses, pockets of high retail density and a system of complementary centers is envisioned along the longitudinal and the radial connections.

We can in fact observe that in addition to the city centers, transportation nodes demonstrate high degree of mixed uses. Transit Oriented Development (TOD) elevates this natural occurrence to one of its principles. In many large European cities, for example Rotterdam, public policy makes density and mixed-use directly dependent on the level of public transport access. As a result, we see the development of new centers of activity.

Theories of polycentricity have been embraced by the administrations of large Russian cities. They’ve understood what needs to be done and by what means.

### 4. Mixed districts

Amsterdam Zuidas (Southern Axis) – one of the unique contemporary neighbourhoods with a well-functioning mix of residential and commercial functions is mixed to an extraordinary level: (45% housing, 45% offices, 10% amenities) [3]. Implementation of this type of complex mix is only possible under a strong urban policy (From the 1980s onwards, the City of Amsterdam started to consider the Zuidas as a prime location for business) and a high level of engagement of the municipal planners in the planning and the execution (“In 1998, the City Council approved the Zuidas Masterplan, which aimed to develop Zuidas over a 30 to 40 year period into an international prime location for living and working, with all the appropriate facilities”) [4].

Although in Russia, planning at the level of the city lies within the purview of the municipalities, it is the private developers that plan and build actual neighbourhoods. Developers engaged in residential projects are highly reluctant to include any non-residential functions. They do not have the experience, nor the time or resources to involve other parties in their projects.

The 2015 competition for the development of the first lane of Vasilievsky Island adjacent to the International Passenger Terminal in St Petersburg is a case in point. Although the ambition of the competition brief was the 50/50 residential/non-residential mix of uses, today the project is being implemented as predominantly residential with commercial functions on the ground floors.

### 5. Zoning in Russia and mix of uses

Despite the fact that the combination of retail and residential uses has been well-established and successful in Russia; the practice of mixing residential and work, even if we speak of a harmless office function, has not been accepted and is not always possible within the current regulatory framework.

*Land Use Rules (Pravila Zemlepolzovaniya i Zastrojki - PZZ)* dictate the combination of functions and other parameters for the new construction, based on *individual urban zones*. Each set of rules is designed, issued and enforced by the individual municipalities.

Individual urban zones, also known as territorial zones contain multiple *individual land plots*. In general, survey and mapping of individual urban zones takes into account a possibility of combining different existing and future uses of individual land plots. There are following types of functional uses: allowed use, supporting use and allowed use under certain conditions. In the majority of Russian cities

individual urban zones are designated as: central (with the highest degree of mixed-use); residential; recreational; agricultural.

Uses allowed on individual land plots have been classified and listed at the federal level and have become unified country-wide. Individual Municipal Land Use Codes for individual urban zones reference this federal document and its individual chapters.

Chapters of the Federal Land-Use Classifier (БПН – 2019):

- 1.0 Agricultural uses
- 2.0 Residential construction
- 3.0 3.0 Public use of capital structures
- 4.0 Entrepreneurship
- 5.0 Recreation
- 6.0 Production and Industry
- 7.0 Transportation
- 8.0 Security and defence
- 9.0 Nature research and protection
- 10.0 Forest use
- 11.0 Water bodies
- 12.0 Land plots (territories) for general use
- 13.0 Land plots for general use

Interestingly, office function belongs to two different types of uses: 3.8 Public administration – location of the public and community organizations and administrative buildings; 4.1 Business administration -location of the capital construction projects with non-governmental and non-municipal administrative purposes.

To consider the extent to which mixed uses are possible in contemporary Russian city within the regulatory framework of the Land Use Rules (ПЗЗ), one can check whether residential use is allowed within the central zone or office use within the residential zone. Let's consider ПЗЗ of the four large cities – St Petersburg, Ekaterinburg, Novosibirsk, and Samara.

As already mentioned, territorial zones consist of individual land plots with their own allowed land uses. Moreover, different buildings with different types of land use are possible within the same land plot. In addition to land use, territorial zone designation dictates additional parameters of the build environment.

In the case of St Petersburg, the name *central social/business territorial zone* points out to the fact that high level of mix and integration of residential uses is allowed. In fact, residential uses here are among the main allowed uses within the central zone. As a whole, St Petersburg ПЗЗ [5], just like all other ПЗЗ under our consideration, limits the amount of non-residential space that can be integrated into the residential space to the 15-20% of the total of a multistory apartment building. This rule equally applies to the residential functions in the central districts.

**ТД1-1:** *Social/business territorial zone* of mixed-use social/business and residential buildings, located in historic central and peripheral neighbourhoods.

**ТД1-2:** *Social/business territorial zone* of mixed-use social/business and residential buildings, located in the peripheral and suburban neighbourhoods.

**ТЗЖ2:** Residential zone of mid-rise and high-rise multiple dwelling buildings, social and cultural institutions, facilities and engineering/utilities, located outside of the historic central St Petersburg districts. This zone does not warrant location of administrative buildings.

And even the **ЗЖД3** zone: Multifunctional zone of the mid-rise and high-rise multiple dwelling buildings, social and cultural institutions located within the historic districts of St Petersburg (excluding historic suburban districts), including facilities and engineering/utilities (types of specific uses are subject to specific parameters), allows limited amount of administrative functions (4.1) subject to specific conditions.

In Novosibirsk, business, social and commercial zone (ОД-1) has six designated subzones with different allowed residential densities. Here, a residential building can include only a very limited amount of non-residential space with highly select type of functions [6].

Within the (Ж-4) high-rise residential zone, for example, inclusion of office functions is out of the question. And only in the list of *additional types of allowed uses* one finds *insurance and banking* (4.5).

Spatial and functional diversity figure as the main principle within Ekaterinburg's current *Strategy of Spatial Development*. As per this document, the city has decided to promote polycentricity and move away from large monofunctional zones. It has committed to increase typological diversity of housing, increase work and recreational opportunities in the neighbourhoods. Despite the declared intentions, mid and high-rise residential buildings are only *allowed under certain conditions* within the *central social/business zone* И-1. The less important local *social/business zones* И-2 do include mid and high-rise residential buildings with height limitations of 100-meters. Here residential uses are among the main allowed. In both cases though, the amount of space given to other functions cannot exceed 15%. This makes the idea of realizing multifunctional buildings on one land plot a pie in the sky.

On the other hand, administrative functions can find their home within the low-rise multi dwelling, mid-rise and high-rise residential zones. However, these cannot exceed 15% of the total residential space and must be located in the spaces that are articulated as separate from the main building envelope [7].

In Samara, all three *social/business zones* allow residential construction as the main type of use. Yet the residential neighbourhoods limit administrative functions by calling them "*allowed under certain conditions*" and limiting other non-residential functions to 15% of the total building space.

## 6. European mixed-use development

Europaallee is a telling precedent of the European mixed-use development located next to the Zurich Central Station [8]. It contains residential, office, hotel, educational, retail, food shopping, service amenities, gourmet dining and entertainment functions. Most interesting to us are the buildings that in addition to the first-floor commercial functions, successfully combine office and residential uses in equal proportions. Caruso St. John Architects building, for example, sport four floors of offices crowned by the residential towers in addition to the commercial ground floor. Graber Pulver Architects and E2a Eckert Architect introduce a mini-hotel into a wild mix of their building. The necessity to add additional circulation cores may render these kinds of bold moves rare and reduce the overall efficiency of a building. None the less, the original mid-rise perimeter plus towers morphology articulated by the masterplan, is completely justified and lands itself perfectly to the great mix of uses. Towers work well for the residential use, while the wider floorplate perimeter accommodates offices beautifully. Alas, this kind of lively and sustainable development model would not be possible within the current *Land Use Rules - PZZ* in place in many Russian cities.

Such functionally unique new Rotterdam buildings as *Markthal* or *De Rotterdam* realized within the last ten years in the Netherlands, would be unfathomable within the regulatory framework of the Russian city planning. Markthal combines residences, market, cafes and restaurants, and a large supermarket. De Rotterdam houses a large hotel, residential floors, conference center, office and restaurants.

In the context of continued urbanization and the pursuit of *livability* in cities, what kind of new trends emerge within the discourse of the mixed use?

## 7. New perspectives

The topic of European 2014 was Productive City: "Looking back at how we organized this wave of urban regeneration, we can see how we have systematically excluded one program: the productive economy. Every warehouse has become loft apartments, every industrial shed an arts or leisure centre,

every brownfield a fresh residential neighbourhood. The productive economy has left the city to the periphery, whether it is on the outskirts of the same city or to another end of the world.” [9]

“Productive Amsterdam” [10] was an outcome of the European 14. The book, presents the work on the 4 test sites in Amsterdam and represents the winning, runner-up and other noteworthy competition-proposals for the five high priority sites, that were selected for European14:

H-buurt, Papavierdriehoek, Piarcoplein, Sluisbuurt and Transformatorweg.

## 8. Conclusion

*Land Use Rules- PZZ* may still remain an obstacle to mixed-use development, as we know it in the west. Yet in a dynamic situation of Russia, where individual municipalities are free to constitute their own, relatively independent rules, there is hope. The tendency to amend the existing regulatory documents, create new and widen their scope of application may result in just the positive change Russian city planning needs to overcome the legacy of its industrial mono-functional zoning.

## References

- [1] *New Quality of Living by DOM.RF*, available at: <https://дом.рф/development/urban/printsipy-kompleksnogo-razvitiya-territoriy/>
- [2] *Perm Strategic Masterplan*, available at: <http://permgenplan.ru/ms/>
- [3] Majoor S J H 2008 *Disconnected innovations: new urbanity in large-scale development projects: Zuidas Amsterdam, Ørestad Copenhagen and Forum Barcelona dwellers* (Delft: Uitgeverij Eburon)
- [4] *The history of Zuidas*, available at: <https://zuidas.nl/en/the-history-of-zuidas/>
- [5] *Zoning rules St-Petersburg*, available at: <http://kgainfo.spb.ru/zakon/pravila-zemlepolzovaniya-i-zastrojk/>
- [6] *Zoning rules Novosibirsk*, available at: <http://dsa.novo-sibirsk.ru/ru/site/1617.html>
- [7] *Zoning rules Yekaterinburg*, available at: <https://екатеринбург.рф/дляработы/гиз/градостроительство/пзиз>
- [8] *Europaallee: Mitten in Zürich entsteht ein neuer Stadtteil*, available at: [https://www.europaallee.ch/sites/default/files/PDF/Publikationen/Info-Flyer%20Europaallee/Info-Flyer\\_Europaallee.pdf](https://www.europaallee.ch/sites/default/files/PDF/Publikationen/Info-Flyer%20Europaallee/Info-Flyer_Europaallee.pdf)
- [9] *European 14*, available at: <https://www.european-europe.eu/en/news/e14-topic-productive-cities>
- [10] Woodroffe J, Shan M 2019 *Productive Amsterdam. Space for a new Economy*. (THOTH, Stichting European Nederland)