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# Integrated and Sustainable Territorial Development as an Efficient Tool for Urban Renewal

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**Abstract.** This paper analyzes such concepts as ‘integrated property development’ and ‘sustainable development’ and how they apply to urban territories. The authors hereof analyze the basic components of integrated and sustainable territorial development, which includes master planning, renewal of developed areas, and integrated territorial development. The paper structures the problematic urban areas and notes that each type of inefficiently utilized urban areas requires a specific transformation mechanism. It proves that applying integrated and sustainable development tools helps attract more investment, transform the fabric of the city, and improve the urban environment.

## 1. Introduction

Rapid urban development is a global trend today. It consumes ever more financial resources and has to meet ever stricter requirements. Focus is made on how efficiently urban areas are utilized, transformed, and developed. The subject matter of this research is the urgent problem of sustainable urban development.

Sustainable growth of any city requires optimal use of its resources and territories. This is not possible without using the integrated and sustainable territorial development (ISTD) toolkit, which comprises two basic components: integrated property development and sustainable urban development.

The law does not set forth any definition of ‘integrated property development’; however, analytical studies interpret it as a process of gradual and systematic construction of buildings and structures linked by a unity of functions, processes, planning, and queueing; such development produces turnkey engineering and transport infrastructures; social, commercial, business, and entertainment venues; public spaces to create a homogeneous urban environment for higher quality of life [1]. Yu. Blinov notes an important indicator of integrated property development, which is that it is self-contained: a person can get every service they need within the boundaries of their neighborhood [2]. Another researcher is of the opinion that integrated development is essentially about optimizing the functional layout and harmonizing public, societal, and private interests [3]. Thus, integrated territorial development comprises both residential development and deployment of infrastructures to create comfortable urban environment.

The term ‘sustainable development’ was first used in 1987. In a broad sense, it is defined as such development that meets the today’s needs while not compromising the future generations [4]. The concept late became applicable to territorial ecosystems, including urban environments. The Urban



Code of the Russian Federation defines sustainable territorial development as such urban development that provides human beings with secure, safe, and favorable living conditions, limits the environmental footprint of economic or other activities, and also seeks to protect, and optimize the use of, natural resources to avoid compromising the future generations [5]. Thus, a city develops if its territorial, economic, historical, and natural resources are utilized efficiently without exceeding the capacity of its ecosystem while also serving the best interests of all social groups and strata of the city's population.

Researchers identify the following factors of sustainable urban development: use of GIS [6]; urban landscaping [7]; renewal of public utility, warehousing, and industrial areas, as well as renovation of the residential property [8,9,10]; development of metropolitan areas [11], etc. Some authors propose effective tools for sustainable urban development with a focus on specific factors. However, most of such studies also note the legislative obstacles to taking proposed action. The authors hereof propose offsetting such shortcomings by analyzing the integrated and sustainable territorial development tools the Russian law offers since 2017.

## 2. Materials and Methods

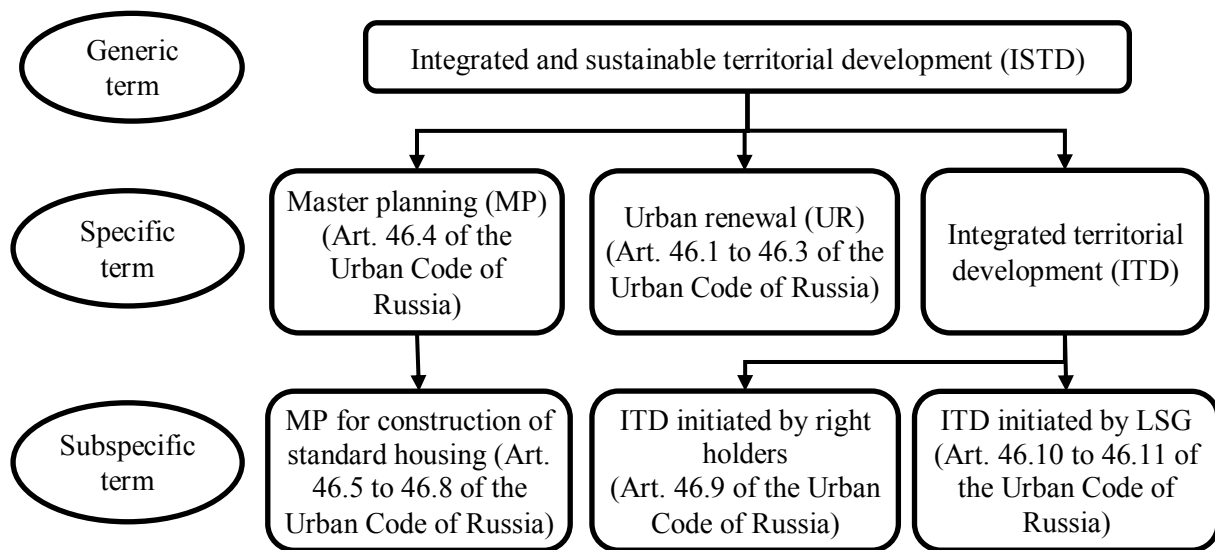
Integrated and sustainable territorial development (ISTD) herein means the efficiency-oriented approach to drafting and approval of planning documentation on the placement of residential, industrial, public, business, and other properties that also specifies the layout of public utilities, transport and social infrastructures such properties will need to function properly; the documentation should additionally dwell upon the architectural design, construction, and reconstruction of such properties and infrastructures [5].

ISTD is an umbrella term that covers three basic tools:

1. Master planning (MP) is the systemic effort to develop significant undeveloped areas by constructing neighborhoods or city blocks; the effort comprises territorial planning (and associated documentation drafting), land division into plots, constructing utilities and transport/social infrastructures as well as other venues. This also comprises the MP tools for the construction of standard housing provided that every apartment in an apartment block meets the standard housing requirements. The toolkit involves developing undeveloped land plots owned by the state and not subject to third parties' rights;
2. Urban renewal (UR) is the effort to renovate the existing residential areas. A UR project usually covers at least a city block rather than a single land plot;
3. Integrated territorial development (ITD) is the effort to renovate boroughs that contain sites and land plots in public (municipal) or private ownership, thus subject to third parties' rights. In case of ITD, the right holders initiate renovation, which is performed by, and at the expense of, real property owners support by the local self-government (LSG). In case of ITD, the LSG initiates renovation to be performed by a contractor that selected by open bidding and is not the owner of the property; LSG efforts basically result in seizure of real property located within the renovated area from its owners.

Figure 1 presents the structure and meaning of ISTD.

ISTD is a multifaceted institute. The tools it comprises helps better develop various underutilized urban areas. However, the authors hereof believe applying ISTD in an urban context requires a more rigorous analysis. It's also imperative to find out how this toolkit can affect the quality of habitat.



**Figure 1.** General diagram of integrated and sustainable territorial development.

### 3. Results and Discussion

There are numerous urban area classifications, each being of its specific quality. The authors' focus is on the problematic urban areas that have negative impact on the urban environment [12,13]. The primary types of inefficiently utilized areas are summarized in Table 1.

**Table 1.** Integrated and sustainable territorial development to optimize the use of inefficiently utilized areas

Inefficiently utilized areas, including:	ISTD tools		
	MP	UR	ITD
dilapidated housing	no	yes	partly yes
detached housing	no	no	yes
collective gardens	no	no	yes
'garage cooperatives'	partly yes	no	yes
degrading industrial facilities	no	no	yes
wasteland	yes	no	no

Each type of problematic urban area requires its own ISTD tool to create high-quality habitat.

Based on Table 1, UR is the most suitable tool for dilapidated housing, as such housing is no longer suitable for living and can thus be demolished with its residents resettling elsewhere. ITD can also be applied to such areas if dilapidated housing is small in area. Removing such patches from the city fabric is a high priority, as such properties pose a direct threat to the life and health of people.

Detached residential housing is defined as houses that natural persons inhabit or otherwise utilize by right of ownership, which are not recognized as dilapidated or subject to demolition. Since it is the owners who are held responsible for the condition of such housing while purchasing it (and the land) at a reasonable price is often not an option, only ITD can be applied to gentrify such areas. Developers and municipal authorities note that such areas are most difficult (and costly) or even impossible to transform. The authors hereof propose developing the areas of detached housing by combining TRD and the existing public-private or municipal-private partnerships (PPP, MPP). This will simplify calculating the investment integrated property development of the large-scale private areas will require. That requires economically sound assessment and allocation of funds from all the stakeholders, i.e. municipal authorities and developers. If the profitability of the project is questionable, authorities have to support developers to make it most investment-attractive by

providing tax benefits, preferential connection to engineering infrastructures, and most importantly, land plots (either allocated or bartered) that are municipally owned and not subject to third parties' rights.

This also applies to collective gardens. Even before ISTD appeared as such, many developers would renew and redevelop such areas under private initiatives [14]. Residential properties are mostly owned by citizens by the right of ownership. However, since gardening is a seasonal activity, and collective gardens rarely feature capital structures, their integrated development is more realistic, primarily thanks to being profitable. However, ITD helps place social venues, transport infrastructures, and utilities faster. ITD also implies developing unsuitable areas, whether upon owners' or municipal authorities' initiative. The latter is observed when a locality is extremely unsightly and is disastrous to the urban environment, but owners reject any reasonable offer.

Garage cooperatives (translator's note: clustered garages used collectively under special agreements) could also make good use of ITD. Many cities currently do not seek to develop or renew such areas, as the price of housing per square meter makes such projects unprofitable. However, garage clusters often occupy their space illegally and have actually been constructed without permit; this means these areas are not subject to third parties' rights and is municipal property, which in turn means that MP applies there in some cases. In that case, developers are not obliged to buy out such territories.

Of greatest relevance is the renewal of closed or underperforming industrial sites. This is done in former industrial cities, mainly major cities with over a million in population [15]. The situation is similar to that of detached housing. Nevertheless, detached housing areas, however rundown, often have internal road grids; private property is mainly small in area; sometimes, owners try to make it look good. Industrial areas are just blank patches in the urban fabric. They are not passable, too large in area, and simply non-esthetic. Until recently, LSGs did not have any toolkit to force industrial area owners to redevelop such areas; major developers could not do anything either, as the owner-requested pricing would be unreasonable at best. The recently introduced ITD toolkit is essentially intended to handle such areas, and it has produced some results already.

Wasteland is defined herein as an unsightly area that contains no capital structures and is subject to no third parties' rights, i.e. is either public or municipal property. These are basically Greenfield territories. Only MP applies to such areas; in close cooperation with municipal authorities, developers shall be able to construct an integrated residential area that is comfortable for living.

Notably, the primary advantages of UR and ITD is that privately owned land could be repurchased at reasonable price, as pricing is done by independent appraisers in court. ITD enables developers to renew or develop inefficiently utilized urban areas by purchasing land plots at reasonable prices for constructing social infrastructures such as kindergartens, schools, outpatient hospitals, etc. Municipal authorities used to note that they lacked the power to buy out land for such development, as the legislation at the time only allowed municipalities to purchase land for building local and federal roads as well as for utility networks.

Thus, integrated territorial development is the most applicable ISTD tool for transforming inefficiently utilized urban areas and creating high-quality urban environment. Its main advantage is that it enables municipalities to seize illegally land that is used outside the scope of land use and development rules. However, since ITD is a relatively novel mechanism, it is not yet possible to properly evaluate its effectiveness in practice.

#### 4. Conclusions

Russia's major cities today are in decline, especially the living conditions they provide. This forces the human resources, which are critical to urban and national economy, out of low-ranking cities. Most cities have similar problems, which is why there has appeared a legal framework to transform them; it is referred to as Integrated and Sustainable Territorial Development.

This is a relatively novel concept that is based on the sustainable development concept; its basic tools (MP, UR, and ITD) are designed to transform the city fabric and to involve the inefficiently

utilized areas in urban development. Applying this mechanism will help gentrify problematic areas and make them more investment-attractive. Developers will be able to complete their integrated property development projects in such areas to improve the urban environment as a whole.

## References

- [1] Tarasova E A, Vasilyeva A Yu, Petrova V A and Ivanova A V 2018 *Alley of Science* **4** 205–08
- [2] Babenko S V 2013 *Journal of Legal and Economic Studies* **2** 137–40
- [3] Voronina N V, Fentisova I V 2015 *Proc. Int. Conf. Modern problems of economic development of enterprises, industries, complexes, territories* (Khabarovsk: Publishers Pacific National University) pp 33–6
- [4] Viatkina B M 2015 *Proceedings of Universities. Investment. Construction. Real estate* **2** 141–48
- [5] Federation Council of the Federal Assembly of the Russian Federation 2018 *Town Planning Code of the Russian Federation* (Moscow: State Duma of the Russian Federation) p 383
- [6] Kustov M V, Loginova N N and Semina I A 2004 *InterCarto/InterGIS* **10** 61–7
- [7] Sheina S G, Chubarova K V 2015 *Proc. Int. Conf. Building and Architecture – 2015* (Rostov-on-Don: Editorial and publishing center RSSU) pp 217–18
- [8] Zalyotova E A 2018 *News of the Kazan State University of Architecture and Engineering* **3** 105–13
- [9] Drozhzhin R A, Blaginykh E A 2016 *Bulletin of the Siberian State Industrial University* **2** 48–53
- [10] Kirillova A N, Zhikharev D F and Bizhanov S A 2018 *Real estate: economics, management* **4** 13–7
- [11] Nekhoroshkov I Y 2018 *Science, Education and Culture* **5** 71–3
- [12] Sarchenko V I 2015 *Proceedings of Irkutsk State Technical University* **8** 202–13
- [13] Sarchenko V I 2015 *The Economics of Construction* **2** 36–41
- [14] Yaskova N Yu 2018 *Real estate: economics, management* **4** 18–23
- [15] Sarchenko V I 2016 *Methodology to ensure targeted development of mobility and the efficient restructuring of urban real estate in conditions of uncertainty* (Moscow: Moscow State University of Civil Engineering (National Research University)) p 264