

REAL CORP 2019

Smart and emotional - the city as a work of art



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- * Introduction
- * Precondition
- * The Method
- * Application of the Method
- * Conclusion

INTRODUCTION

1. A work of art creates an emotional game between the size of a real physical space of a work and the size of an imaginary artistic space.



City of Vienna. 1858

Urban planning



Perugino. 1482

Painting



Ludwig Mies van der Rohe. 1929

Architecture

2. The work of urban art is characterized by the diversity of the internal structure and content - this is the practical meaning of a work of art.



Historical Prague



1970s neighborhood, the USSR

3. Diversity becomes artistic if the position of each part in the whole work is remembered.



"Historical" method: one quarter - one architect - does not guarantee compositional integrity (Helsinki)



"Digital" method: one architect designs everything in the area using 3D modeling - an error may occur with real perception (Kazan)

PRECONDITION:

«The perception of the diversity of the urban environment depends on the perception of dimension of the urban space»

Pre-conditions for urban composition:

?



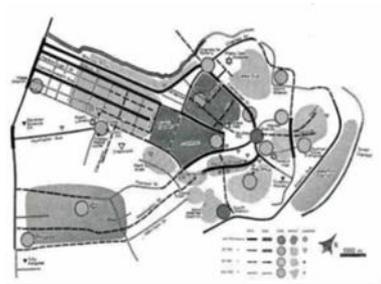
1. How a person is oriented and perceives the dimension of the city's space from within
2. What is the structure of the mental image of urban space
3. How to form a spatial image of a city in graphic language on a city plan

Two approaches to determining patterns of perception of urban space

The method:

“The sociological analysis of the verbal description of the city”

(K. Lynch, 1960. USA)



"How do I get to ?"

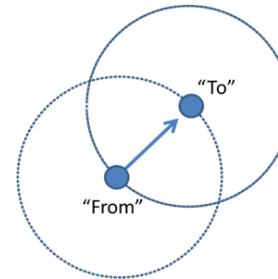
"How will I recognize it when I get there?";

"How long will it take me to walk there?"

The city is read if there is Paths, Edges, Districts, Nodes, Landmarks

The method:

“The graphical modeling of spatial prepositions in languages”

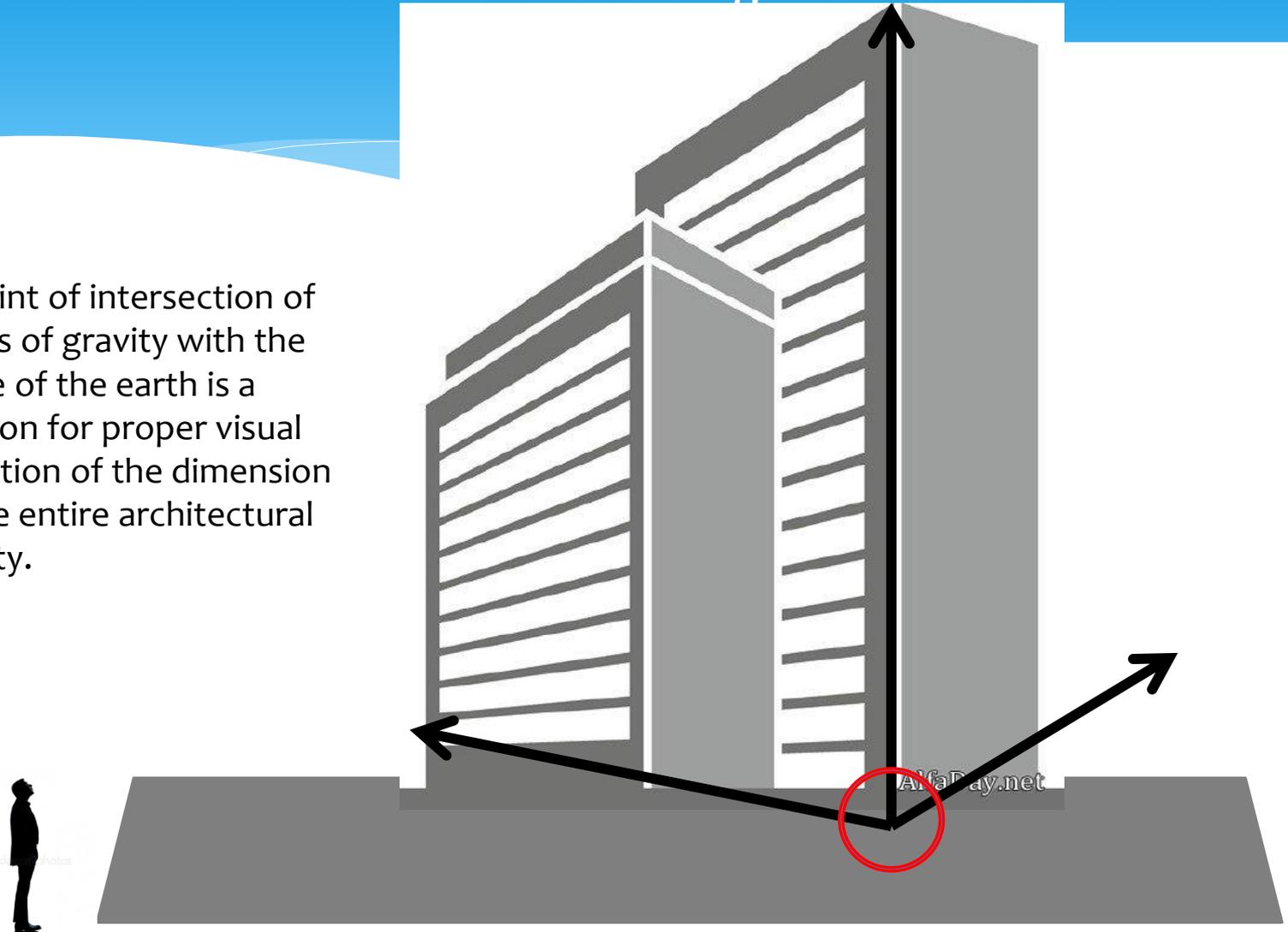


“From, on, to, above, in, behind, under, around, between, near, before, through, across, among, against, along, outside, inside”...

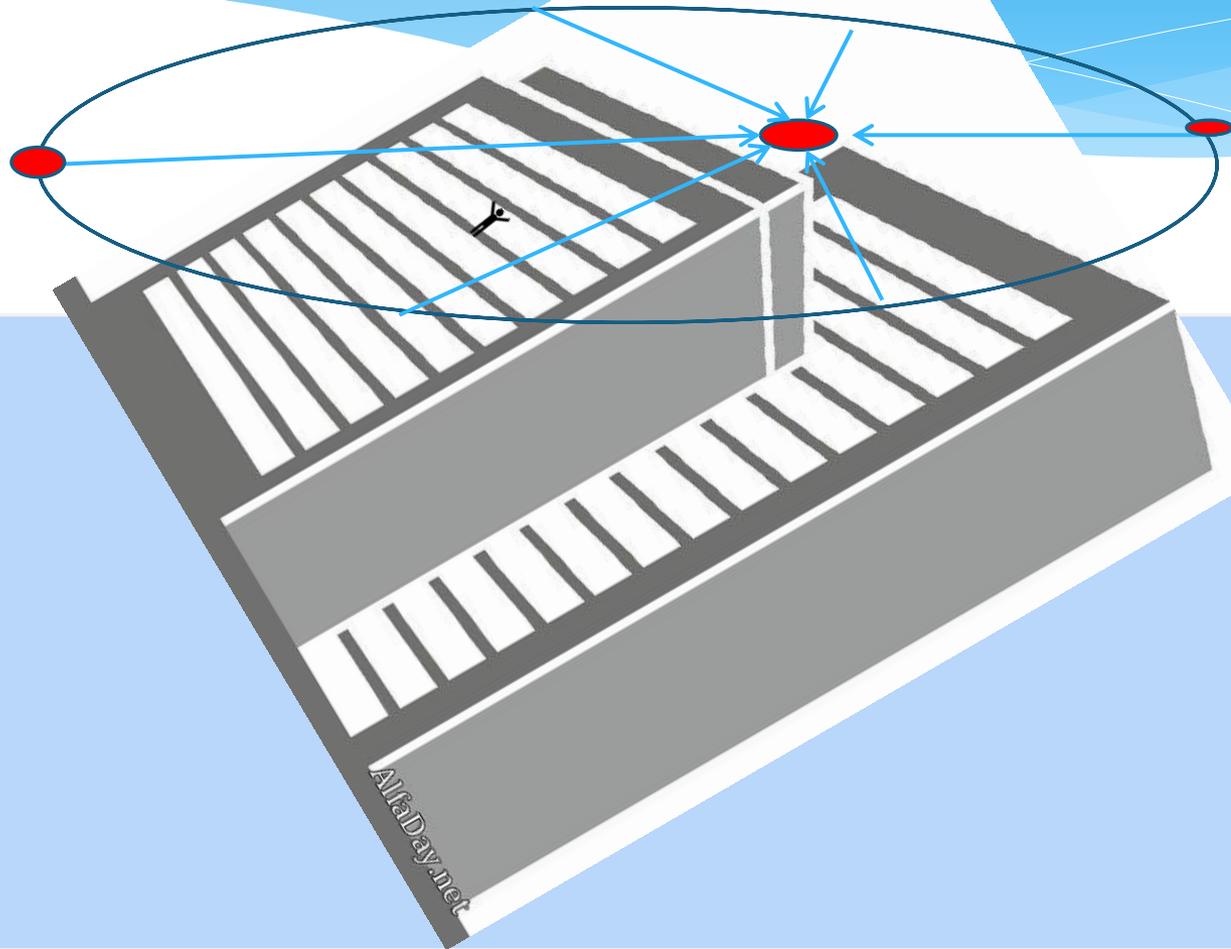
The city is read and space is diverse if any place is the Center of one space, the Boundary of another and the Axis of a third space

The compositional diversity of the architecture begins with a visual measurement of the dimension of the building in Cartesian coordinates .

The point of intersection of the axis of gravity with the surface of the earth is a condition for proper visual perception of the dimension and the entire architectural diversity.

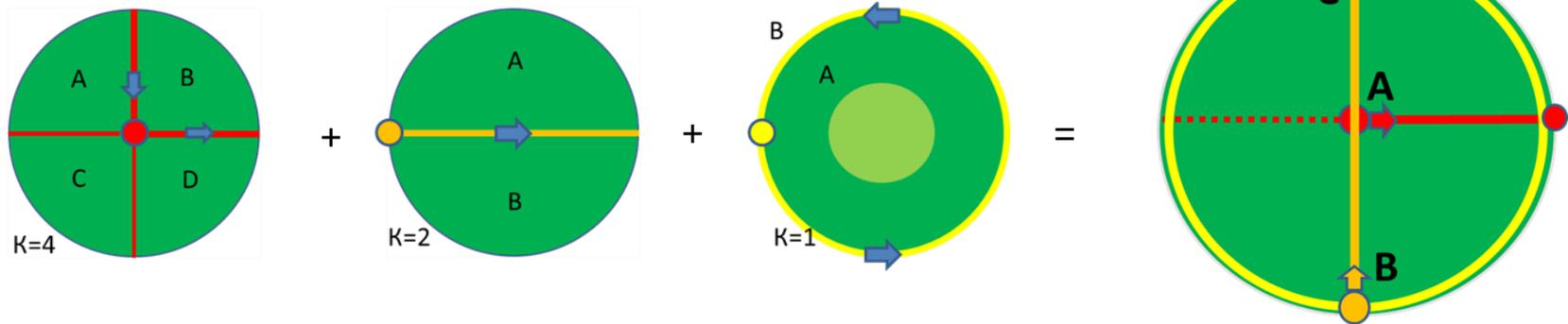


The elimination of gravity and the reduction of the size of a person transforms the perception of a building into a mental perception of the space of a city with topological «coordinate system»



The mental space of the city is a topological set that has only three dimensions associated with the center position and which are recognized verbally in the process of moving along the path through the physical environment.

The dimension of the space defined by the long way from the center to the boundaries.



Space dimension to the center.
"Compact city"

Space dimension along axis.
"Linear city"

Dimension of space along the border. "Ring-shaped city"

The three-dimensionality of the mental space created by three semantic sets. "Diverse city"

Center, axis, and boundary do not exist without each other.
Center - a semantic set, which binds to the other set, marks the boundary, through the third set, indicating the way-axis of movement.

THE METHOD

Forming a diverse urban environment by changing the dimension of the mental space

Variety 1.

The simplest varieties of the urban environment will be correctly perceived if the center of space, the main street-axis and borders are expressed by a certain arrangement of three semantic sets of buildings and links-streets

Analogue of composition dimensions in architecture

"height"



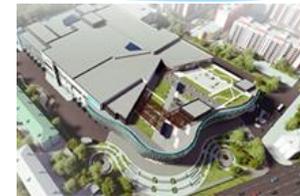
Stuchebyukov, Novosibirsk

"length"

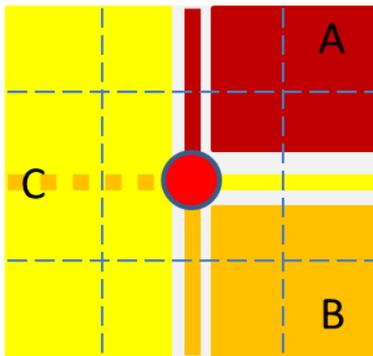


DKV architecten, Roomburg

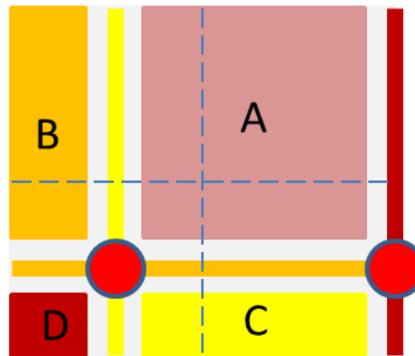
"depth"



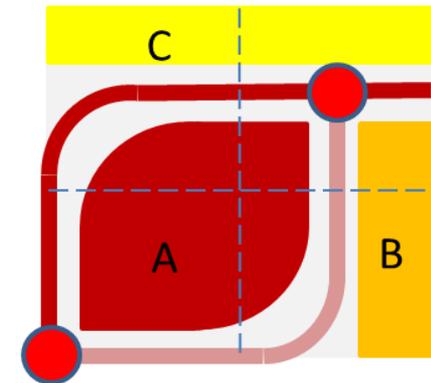
UD Group, Kazan



Composition "center"



Composition "axis"



The composition "border"

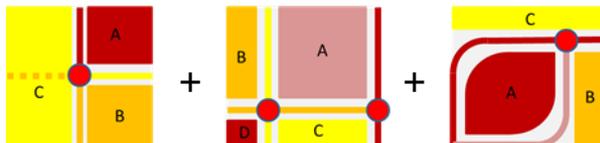
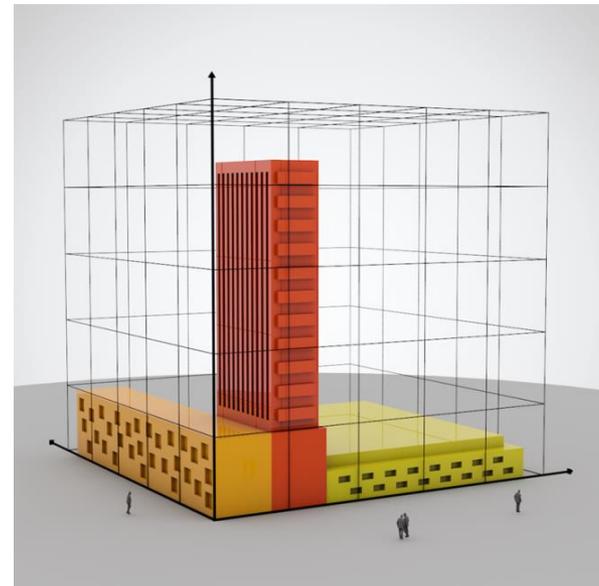
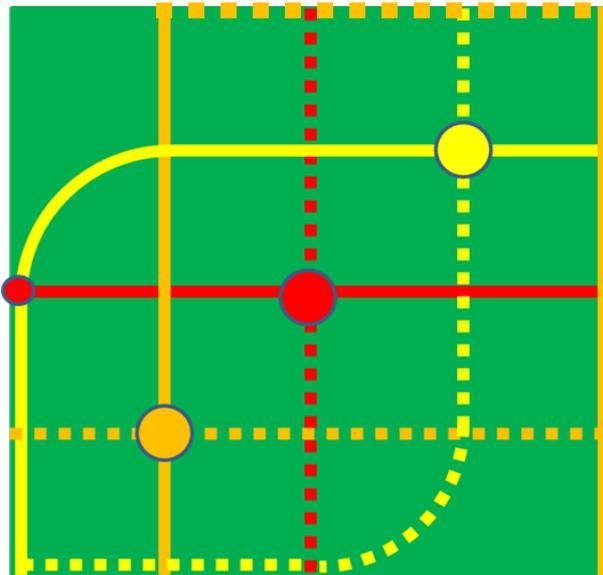
The simplest compositions of dimension in urbanism

Variety 2.

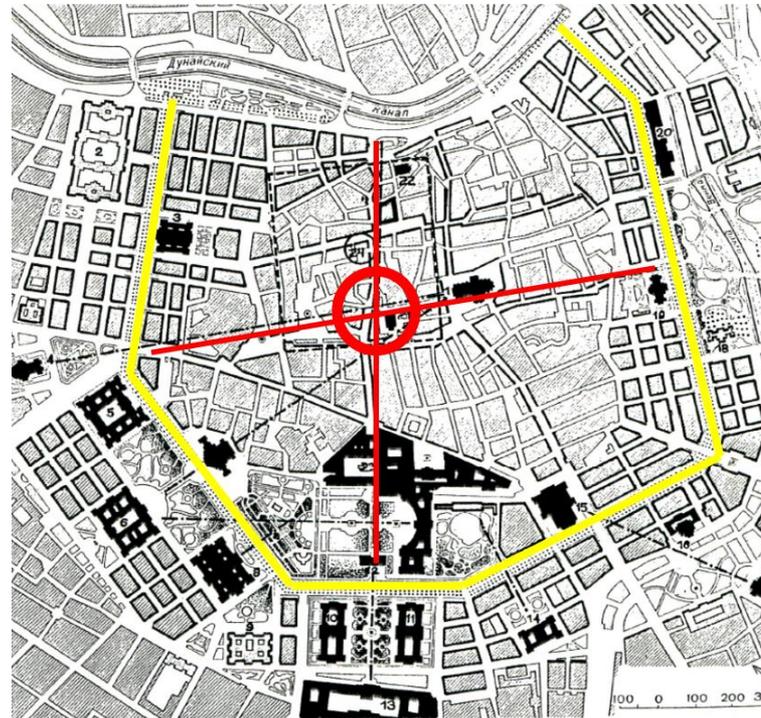
Diversity increases and becomes artistic when one dimension is perceived against the other

Integration of three sets of buildings with different mental dimensions

Integration of three buildings with different visual dimensions

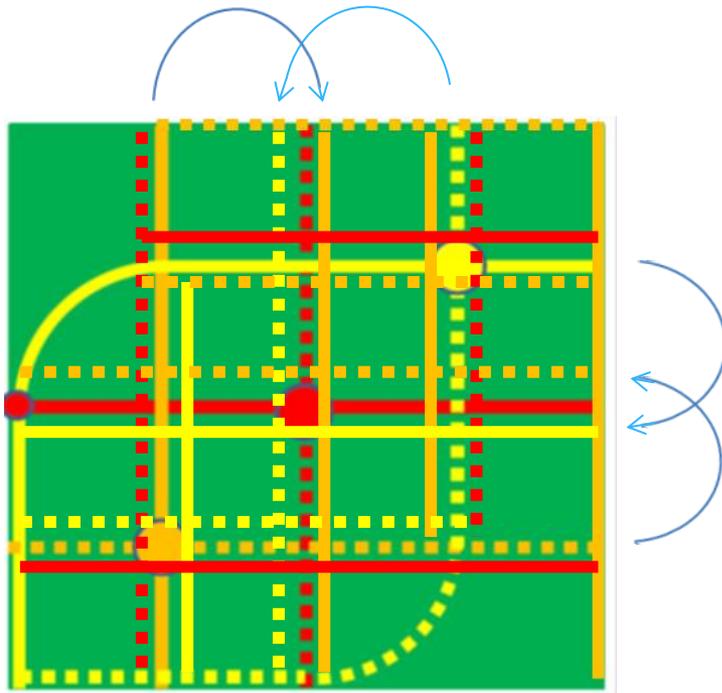


The expressive readable diversity of the city of Vienna due to the “composition” of two structures: the compact space of a medieval city and the ring-shaped space of the Ringstrasse.



Variety 3.

Mutual projection of the properties of a building as an image of the internal on the external space – the compositional “folding” of the space



Frank Owen Gehry, 1997, 2015

In urbanism

In architecture

Variety 4.

The change in the imaginary dimension of space due to the compositional "compression" (stretching) of the structure towards the center of "gravity" according to the rules of ART-space

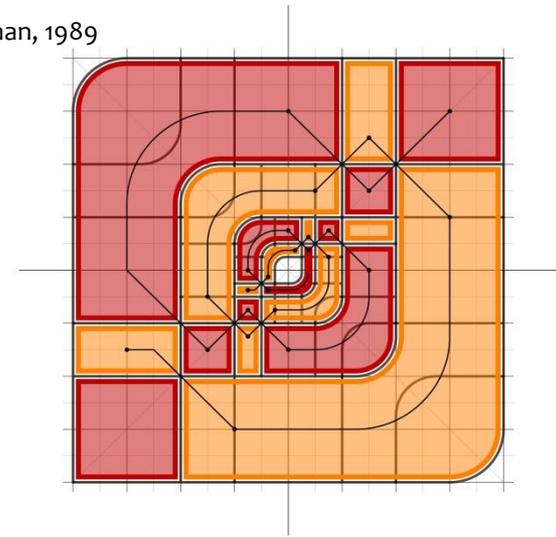
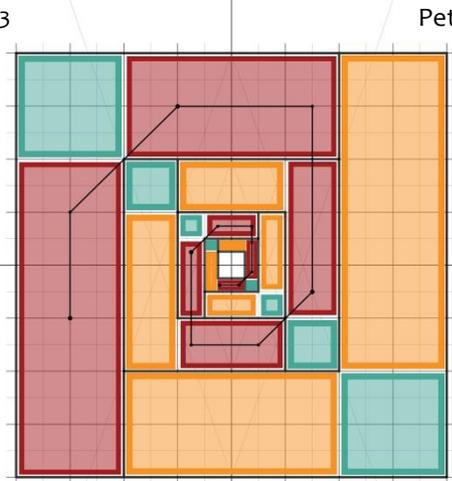
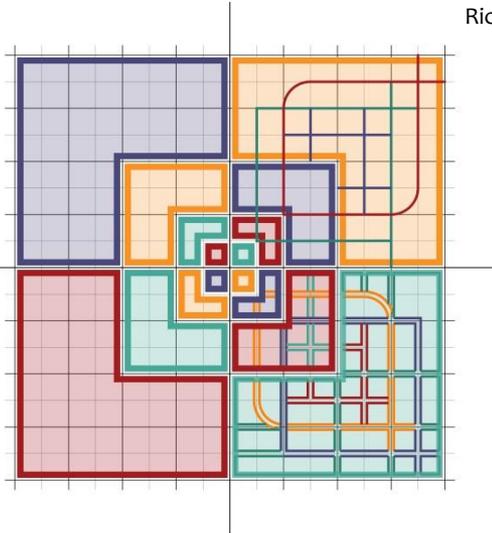


In architecture

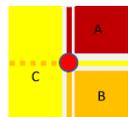


Peter Eisenman, 1989

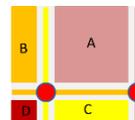
Richard Meier, 1983



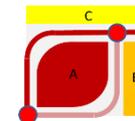
In urbanism



Compression of the centric structure



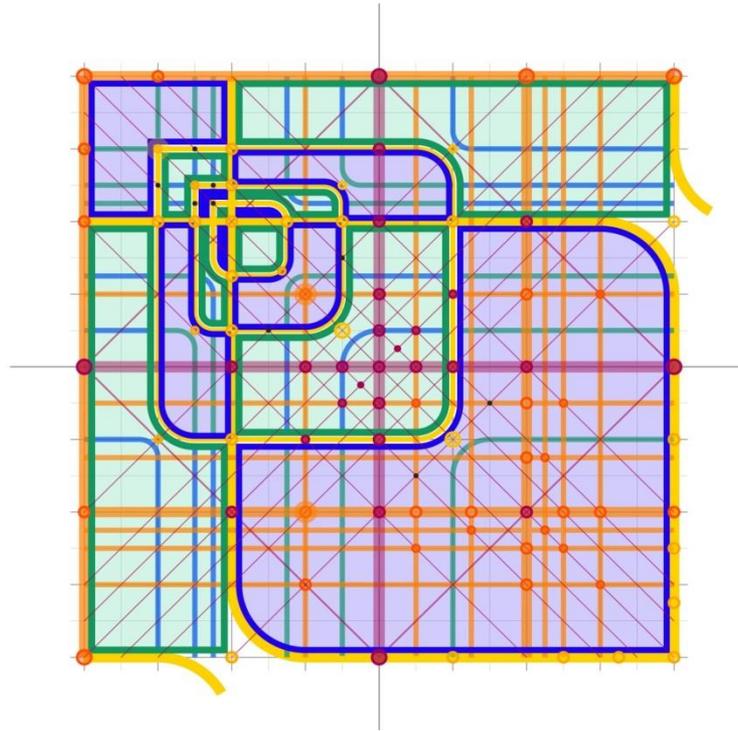
Compression linear structure



Compression ring structure

Variety 5.

"Compression" and "folding" of three structures in three dimensions of urban space from the streets and blocks according to the rules of ART-space



APPLICATION OF THE METHOD

1. Scenario development of art space for an approved urban project
2. The development of urban projects simultaneously with the scenario of artistic space

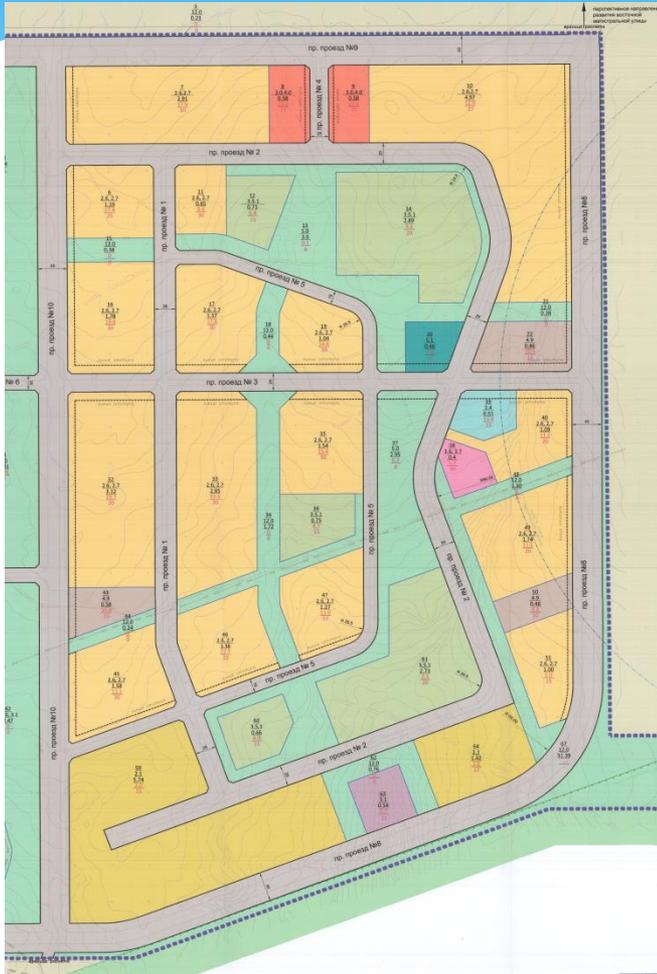
Application 1.

Approved Detailed Development Plan for a Residential Area in the City of Sarov
(116 ha, 12 thousand inhabitants)



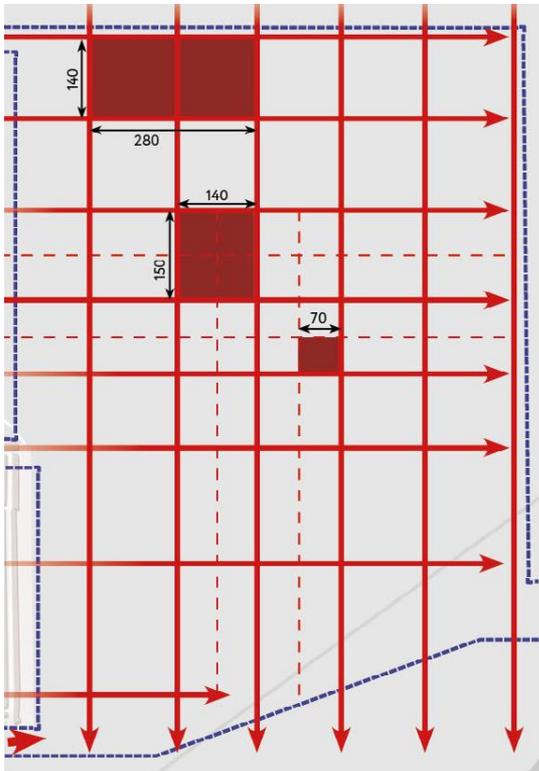
Approved Detailed Plan

3D visualization of possible building on an approved project

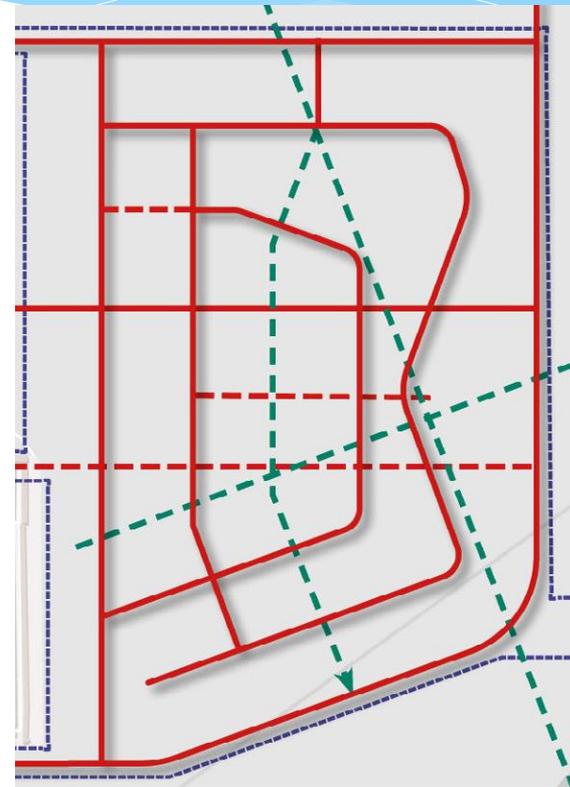


Preliminary actions

1. Determination of the limiting cell sizes of the metric grid of links



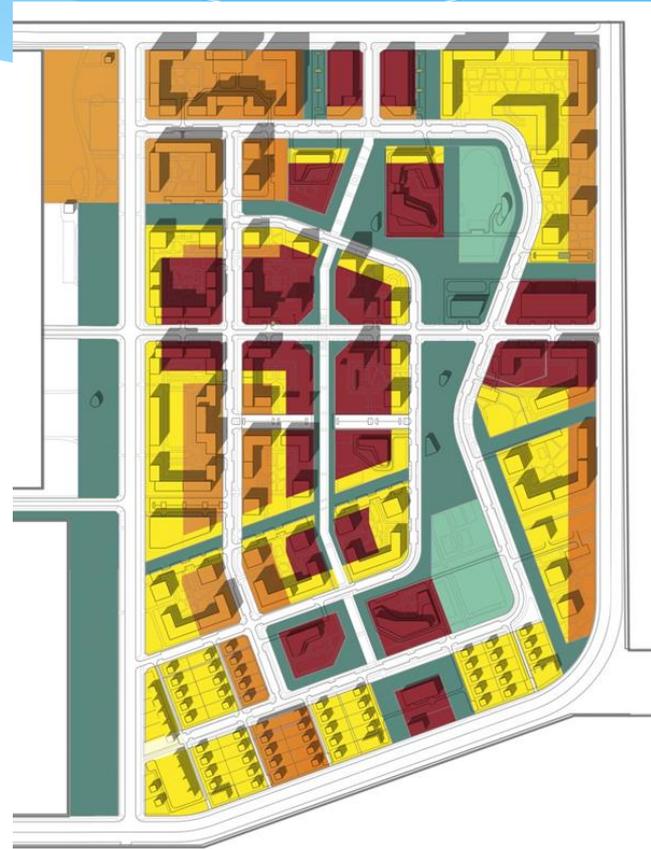
2. Determination of the street-axes of the basic mental space



3. Marking the basic three-dimensional structure of the area - the center, axis and boundaries



4. Marking the three-dimensional structure of the area according to the initial sketch of the building

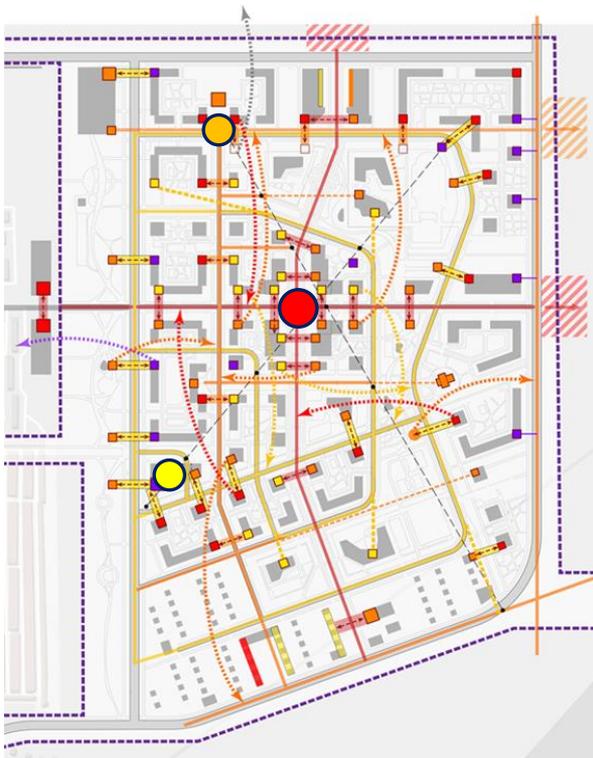


Variety 1

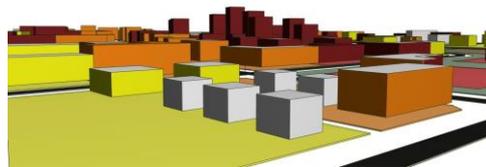
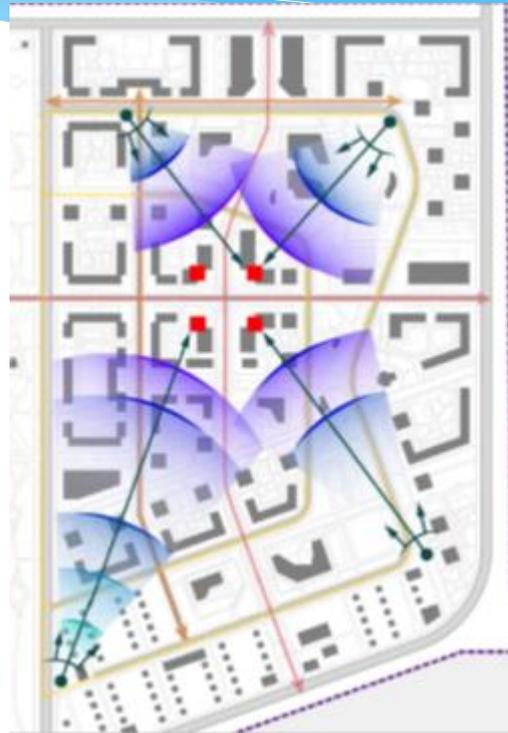
5. Marking of compression and mutual reflection of artistic space

6. Visualization of compression. Increasing the number of floors to the center

7. Differentiation of semantic landmarks along the axes of motion of each dimension



Variety 2

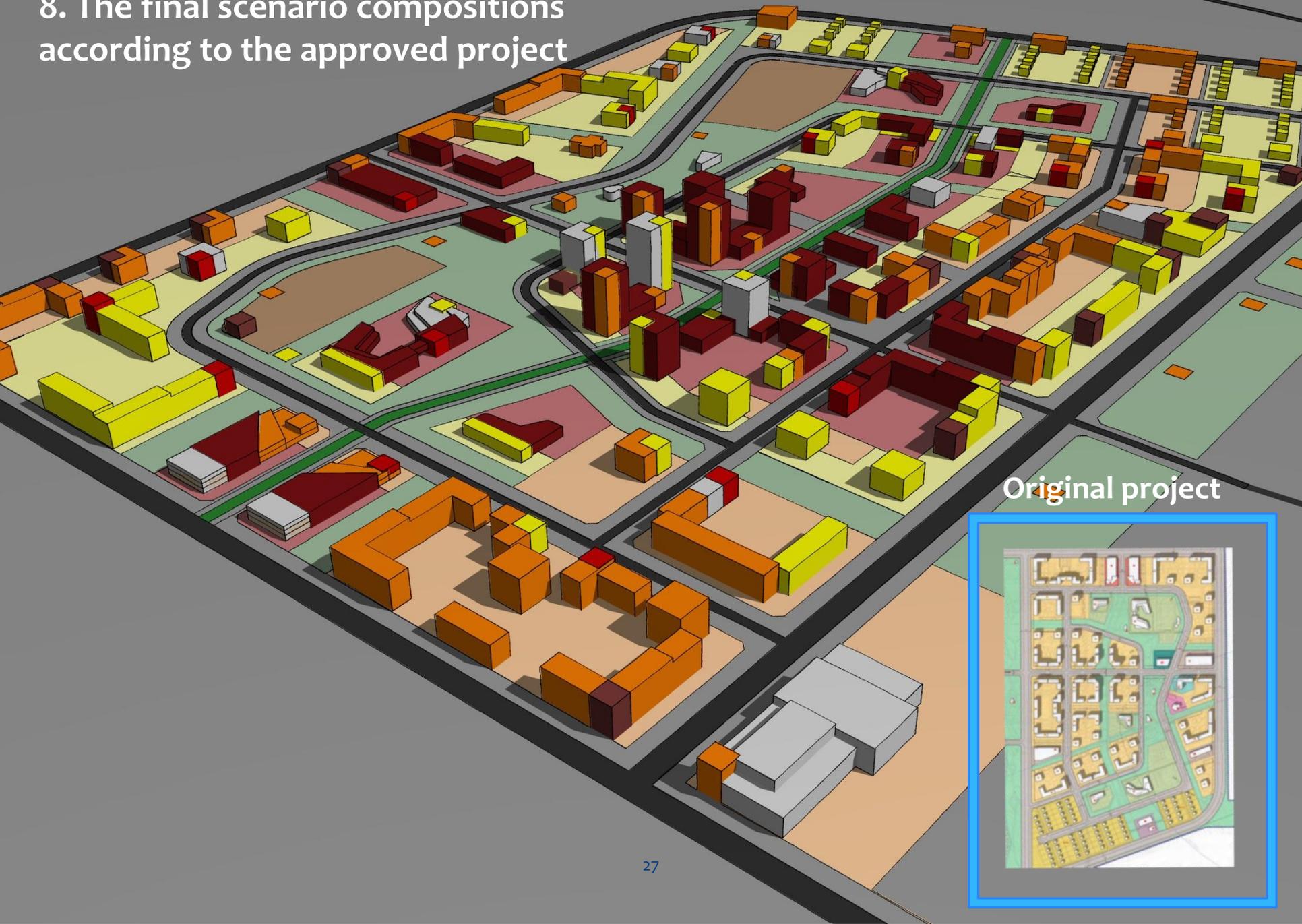


Variety 3



Variety 4

8. The final scenario compositions according to the approved project



Original project

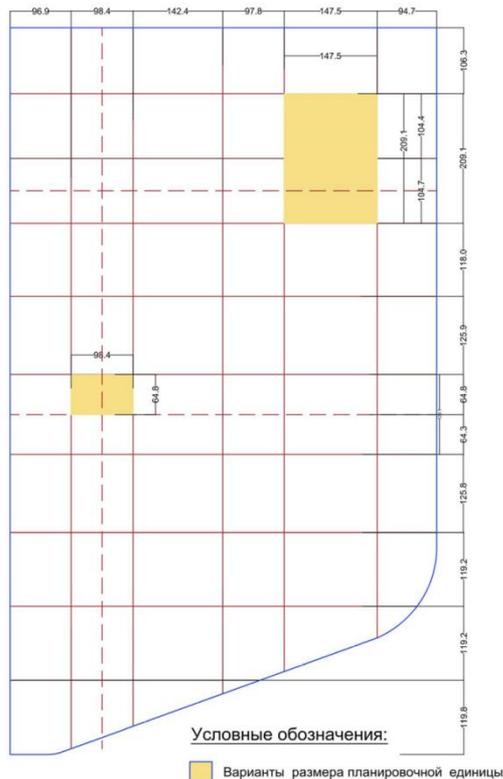


Application 2.

An example of the simultaneous development of the project and the scenario of the artistic space of a residential area of Sarov

Preliminary actions

Planning grid



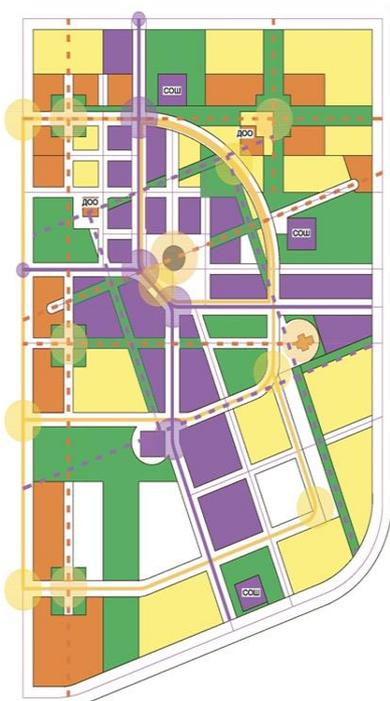
Target balance of functions



Modeling the diversity of the district structure according to typological scenarios of composition and pictorial analogues



**"Compression"
to the center.
Scenario "Raphael"**



**"Compression"
to the border.
Scenario "Tintoretto"**



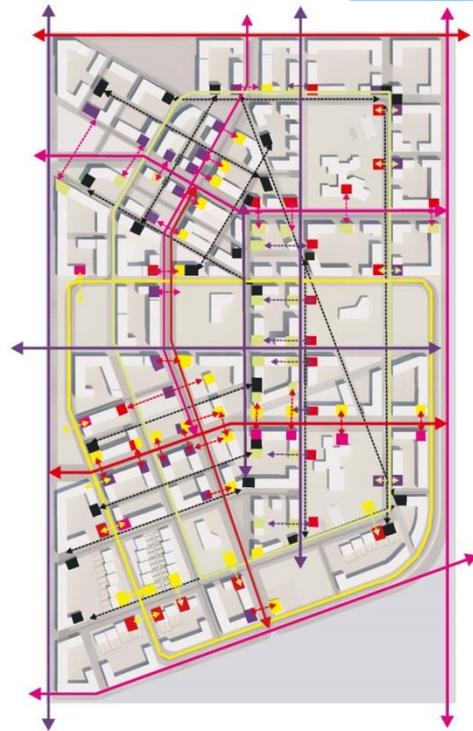
**"Compression"
along the axis.
"Botticelli" scenario**



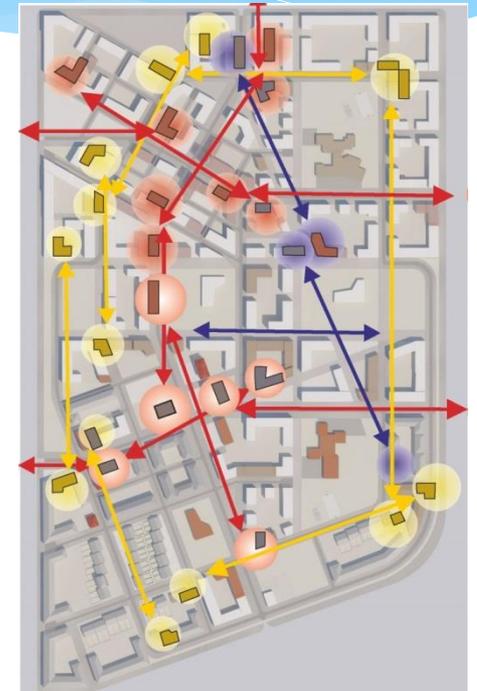
The composition of the scenario linear structure - "Botticelli"



Variety 2

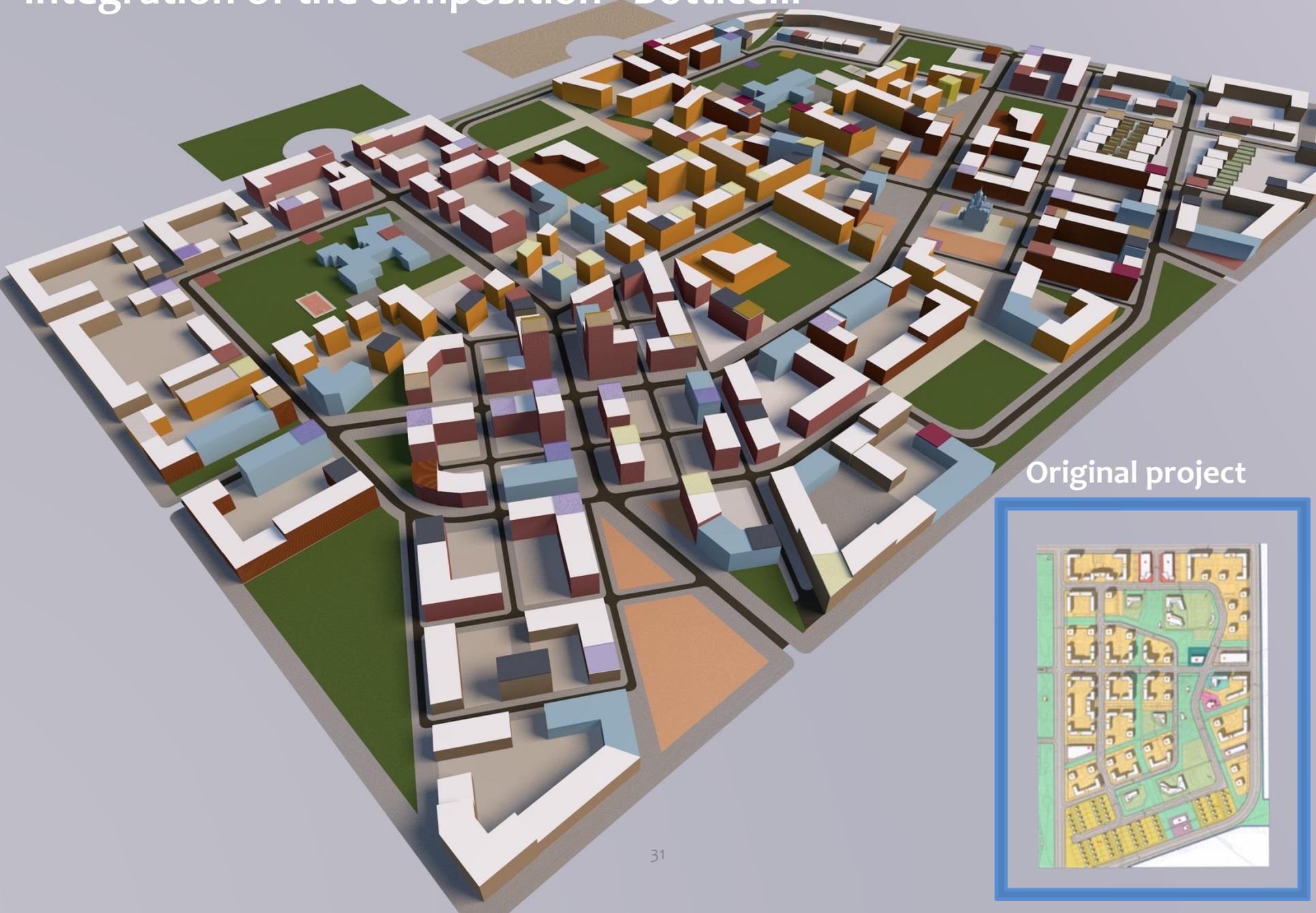


Variety 3

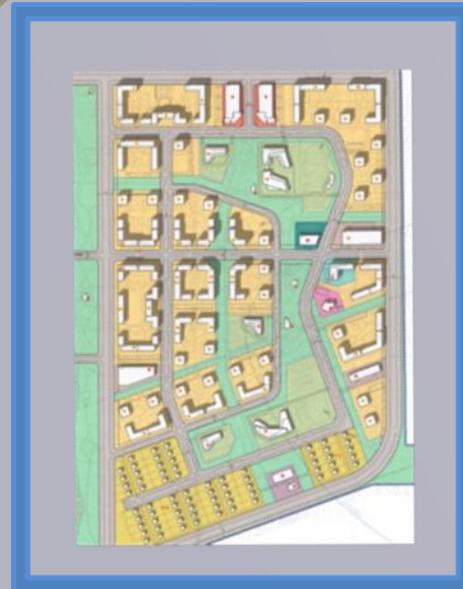


Variety 4

Integration of the composition "Botticelli"

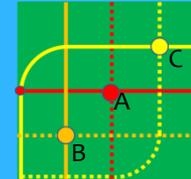
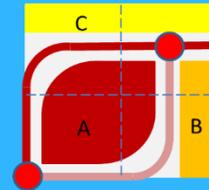
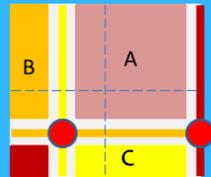
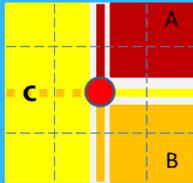


Original project

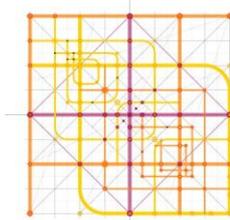
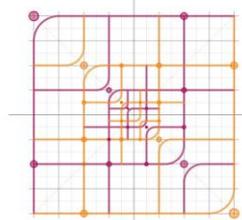
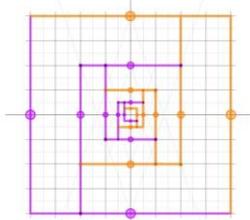
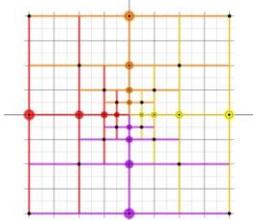


Basics of ART-space methodology

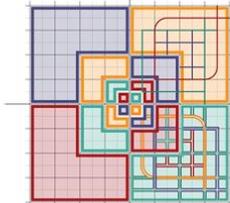
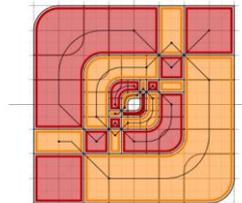
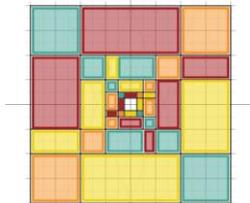
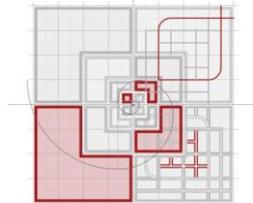
Base dimension composition



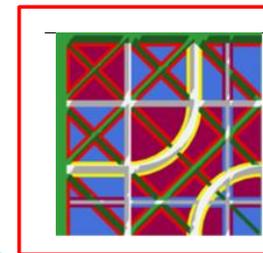
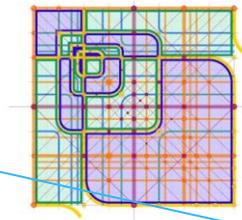
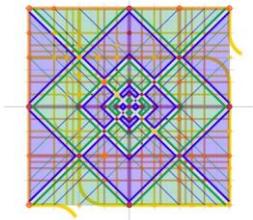
The composition of the "compression" of space by the streets



The composition of the "compression" of space quarters



Composition of addition, compression, mutual display by quarters and streets



CONCLUSION

1. The mental space of a city has three mutually related dimensions - ***to the center, along the axis, around the border***
2. ***The composition*** of a readable spatial diversity is based on the formation of a ***certain mental dimension***
3. Formation of artistic dimension using the method of ART-space is provided by ***addition, compression, mutual projection, deformation*** of different sets of buildings with different mental dimensions.
4. **The art of urban composition is not reduced to the game with the dimension and ART-space method , just as painting is not limited to the technology of drawing a perspective image on a plane**

Thanks for attention!

