

# Display of Zoning Diameter According to the Distance Approach on Separate Organization Zoning Islands

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**Abstract** – In our country, activities are carried out under the title of zoning studies in order to make an area suitable for holistic living standards. There is a hierarchy in the formation of zoning plans from the upper scale of the country development plans to the lower scale, which are the implementation zoning plans. Along with this hierarchy, in the 1/1000 zoning plans, especially the people living in a region, housing, shopping, social activity, etc. zoning islands are determined within the zoning boundaries determined to meet the needs. Zoning islands can have different building regulations, precedent or building heights. There are possible building regulations within the zoning boundaries, where there may be different types of sitting areas, such as split, block and adjacent basis. On the other hand, the form of a separate zoning island is that the garden-looking building session is given in the middle without being attached to a depth or to the façade. The process of granting construction permits to the existing zoning parcels in the zoning islands, whose identities are determined by this building regulation, is the zoning scale. Zoning diameters, planned areas are given within the framework of type zoning regulations and plan notes. The zoning diameter is given according to the precedent, height and building order of the island. Distance method, on the other hand, is the process of creating the right residential area with the drawing rules of convex shapes, such as square or rectangular, according to the geometric condition of the parcel, in order to be able to give construction permits to the clean zoning parcels in the relevant zoning islands. In our study, it has been tried to show how the settlement areas at the base can be given, which building order, which precedent and how to apply the process to the convex parcels with the distance approach.

**Keywords** – Separate Order Reconstruction Island, Distance Approach Method, Zoning Diameter

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## I. INTRODUCTION

The Zoning Law, which is directly related to fundamental rights and freedoms, brings regulations in areas that are closely related to the society such as the right to property, the right to life and the freedom of settlement [1]. The first of these is the Zoning Law No. 3194. In article 2 of the Zoning Law, the scope of the law is mentioned and it is stated that all buildings to be built within or outside the borders of the municipality and the adjacent area are subject to this law. The Municipal Law No. 5393 covers municipalities according to art.1 and art.2, and regulates their working procedures and principles, duties and authorities [2]. Although the main purpose of planning is livable cities and therefore public benefit, the regulations to be made create some obligations and obligations not only for the

institutions authorized to make this regulation, but also for the individuals [4]. Planning, as a concept, is a way of thinking that is thought ahead from a certain moment; It is the sum of the studies aimed at examining the possibilities, possibilities, comparison activities, and establishing regular relations between individuals and their communities and their environment [5]. It is aimed to implement the zoning and urban planning activities in line with the principles of honesty and compliance in the light of laws and regulations by transforming them into implementation plans of 1000 by local governments [6]. Rapid urbanization has brought about unplanned development. This process has revealed an urban texture where social and technical equipment areas are insufficient, transportation planning cannot be done, and industrial facilities are intertwined with living and resting areas [7].

**II. MATERIALS AND METHOD**

In the material and method section, vector space, affine space, Euclidean space, Euclidean frame, Euclidean coordinate system, line and plane equations, two lines relative to each other, two planes relative to each other, lines and planes relative to each other, basic principles about line and plane. concepts are given [8].

Description 2.1. (Vector Space): Let  $V$  be a non-empty set, on which we will call the vector addition, and the product of the scalar (real numbers) is defined.

Symbolically, vector addition and scalar multiplication operations [8].

Let  $x, y \in V$  be defined as  $x + y \in V$  for  $x, y \in V$  and  $rx \in V$  for  $r \in \mathbb{R}, x \in V$ ; that is, let the set  $V$  be closed for vector addition and scalar multiplication. If the following conditions are met, the set  $V$  is called a vector space on  $\mathbb{R}$  (set of real numbers) [9]. That is, by adding end-to-end from the length vector, it can be closed, parallel, perpendicular, etc. truth will be obtained.

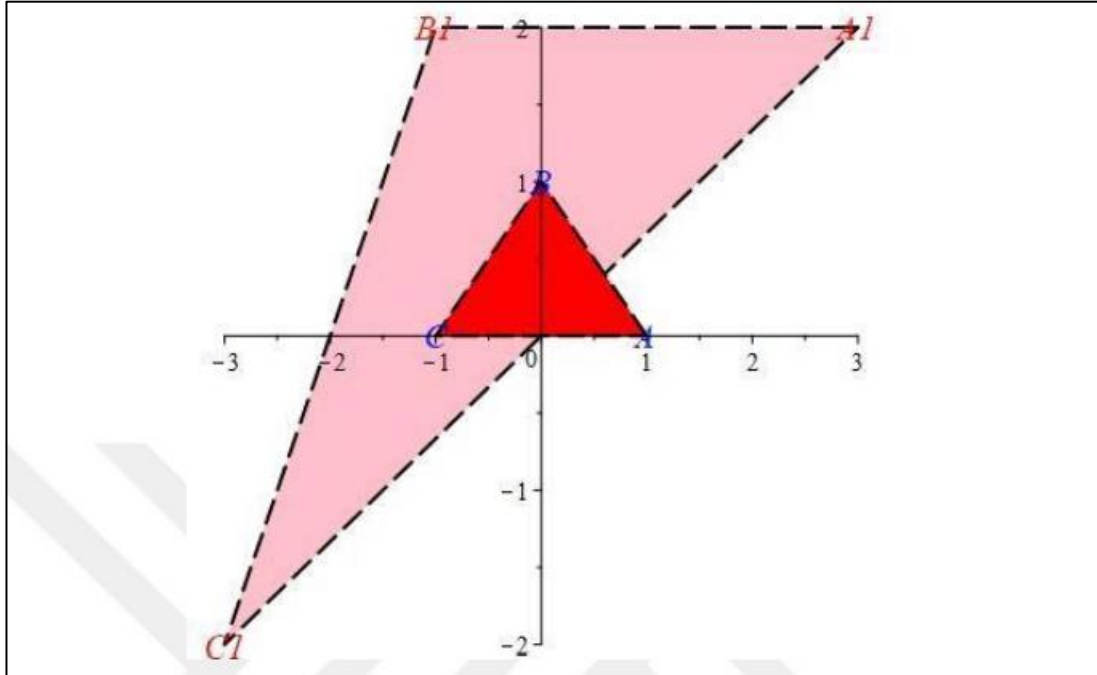


Figure 1. Area Scaling [8].

In Figure 1, when shown graphically, triangle, square, rectangle etc. The method that occurs with the formation

of convex fields is the length method in the form of a length vector.

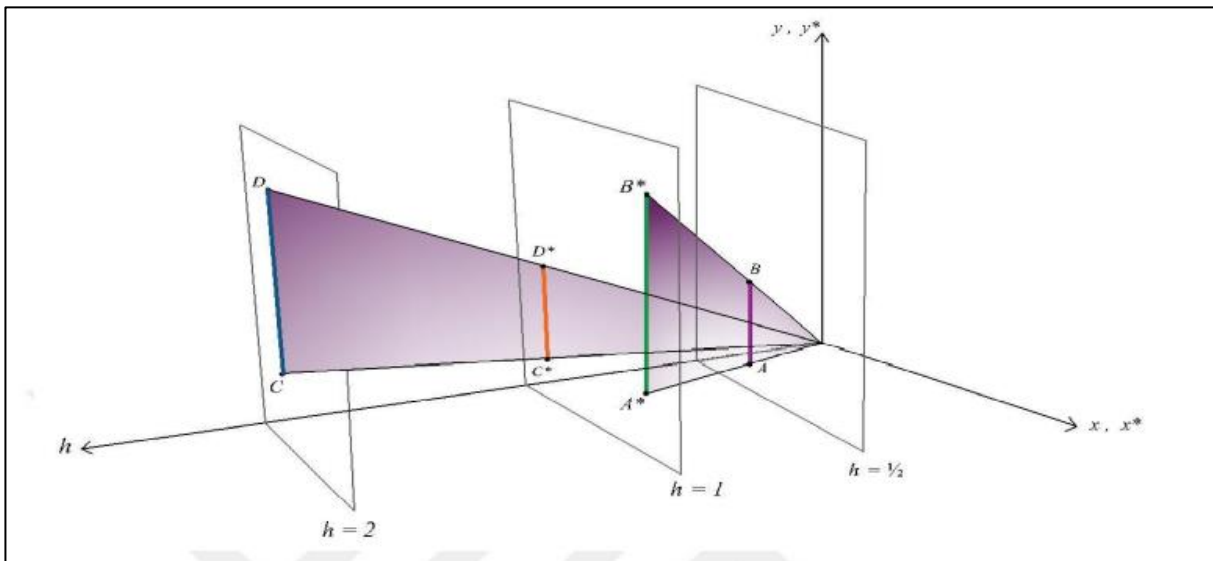


Figure 2. A geometric interpretation of general scaling [8].

Homogeneous coordinates provide a convenient and efficient technique for mapping a set of points from one coordinate system to a corresponding set in an alternate coordinate system. Frequently, an infinite range in one coordinate system matches a finite range in an alternative

coordinate system [8]. Parallel lines may not match parallel lines unless pairings are carefully chosen. However, intersection points can be mapped to intersection points. This property is used to specify the homogeneous coordinate representation of a point at

infinity[3],[15],[10].

### III. FINDINGS AND DISCUSSION

While making a planning, the most important parameters are the creation of zoning islands with a building order suitable for the regions where the population is dense [12]. In general, the legends that we call island identities are adjacent at the points where the center is located, discrete in the areas to be opened for new settlement and based on a block structure [13]. In addition to these

islands that will meet the need for shopping, the building is added to the islands such as religious facilities, social cultural and green areas, and a plan design is made [14]. The arrangement of the parcels that will coincide with these zoning islands is done in line with the provisions of Articles 15, 16 and 18 in the current law, and in line with the plan notes that local governments will receive from their councils [11]. The first action of the residential areas of the buildings is as a result of the display of the zoning status.

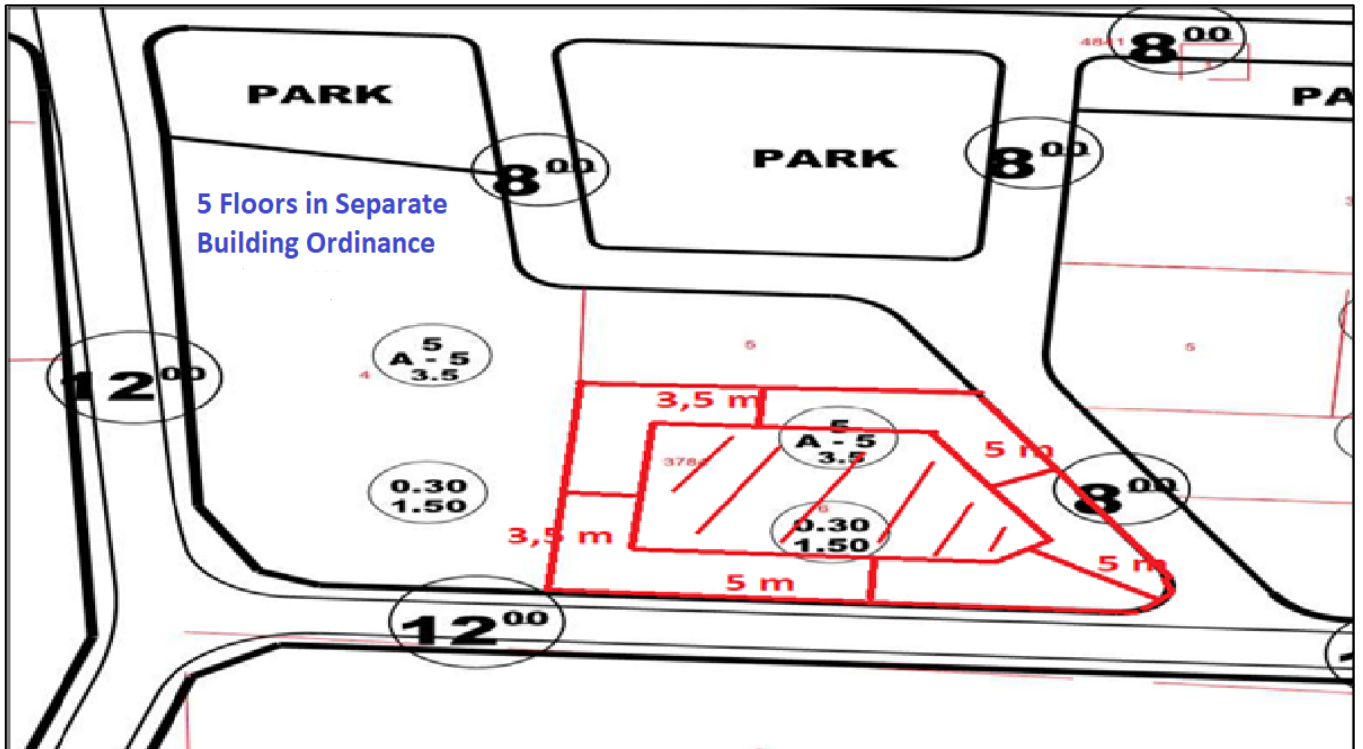


Figure 3. Split Ordinance 5 Floor Zoning Diameter View

In Figure 3., while the zoning diameter is given to the zoning parcel, which is in the form of a separate zoning island, the planned areas will be increased by 5 meters in front drawing distance, 3 meters in places where the distance to the side garden is up to 4 floors, and 0.5 meters per floor after 4 floors. will be given. Since it is a 5-storey zoning, the building stock is given in the middle by taking 3.5 meters from the neighboring parcels facing the road. Since the floor area utilization coefficient is 0.30, the building floor area calculation will be found by multiplying the parcel with this ratio, and the total

equivalent will be calculated as 5 floors. Let  $x y V$  be defined as  $x y V \partial \in$  for  $\in$  and  $r x V \in$  for  $r R x V \in \in$ ; that is, let the set  $V$  be closed for vector addition and scalar multiplication [9]. When the parcel is considered as a universal cluster, such as nested clustering in a parcel with 5 floors, the building's sitting on a parcel with a discrete structure is considered as a subset. After the tensile measurements, it coincides with the same logic, as a mathematical plane, with its narrowing from the origin.

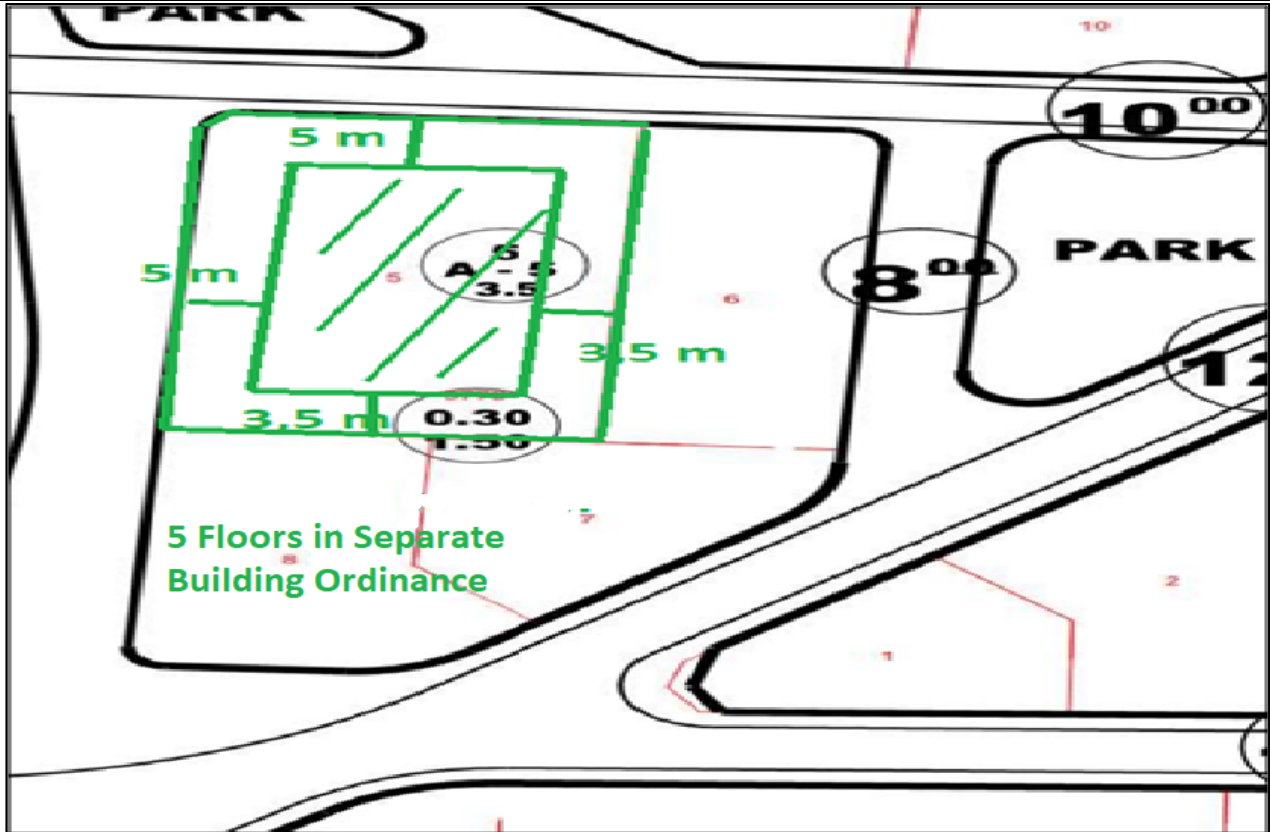


Figure 4. Split Ordinance 5 Floor Zoning Diameter View

In Figure 4., while the zoning diameter is given in a zoning parcel with a separate layout up to 5 floors, the front drawing distance will be 5 meters and the adjacent parcel sides facing the road will be side gardens, so the building residence area will be given by drawing 3.5. Let  $x y V$  be defined as  $x y V \partial \in$  for  $\in$  and  $r x V \in$  for  $r R x V \in \in$ ; that is, let the set  $V$  be closed for vector addition

and scalar multiplication [9]. When the parcel is considered as a universal cluster, such as nested clustering in a parcel with 5 floors, the building's sitting on a parcel with a discrete structure is considered as a subset. After the tensile measurements, it coincides with the same logic, as a mathematical plane, with its narrowing from the origin.

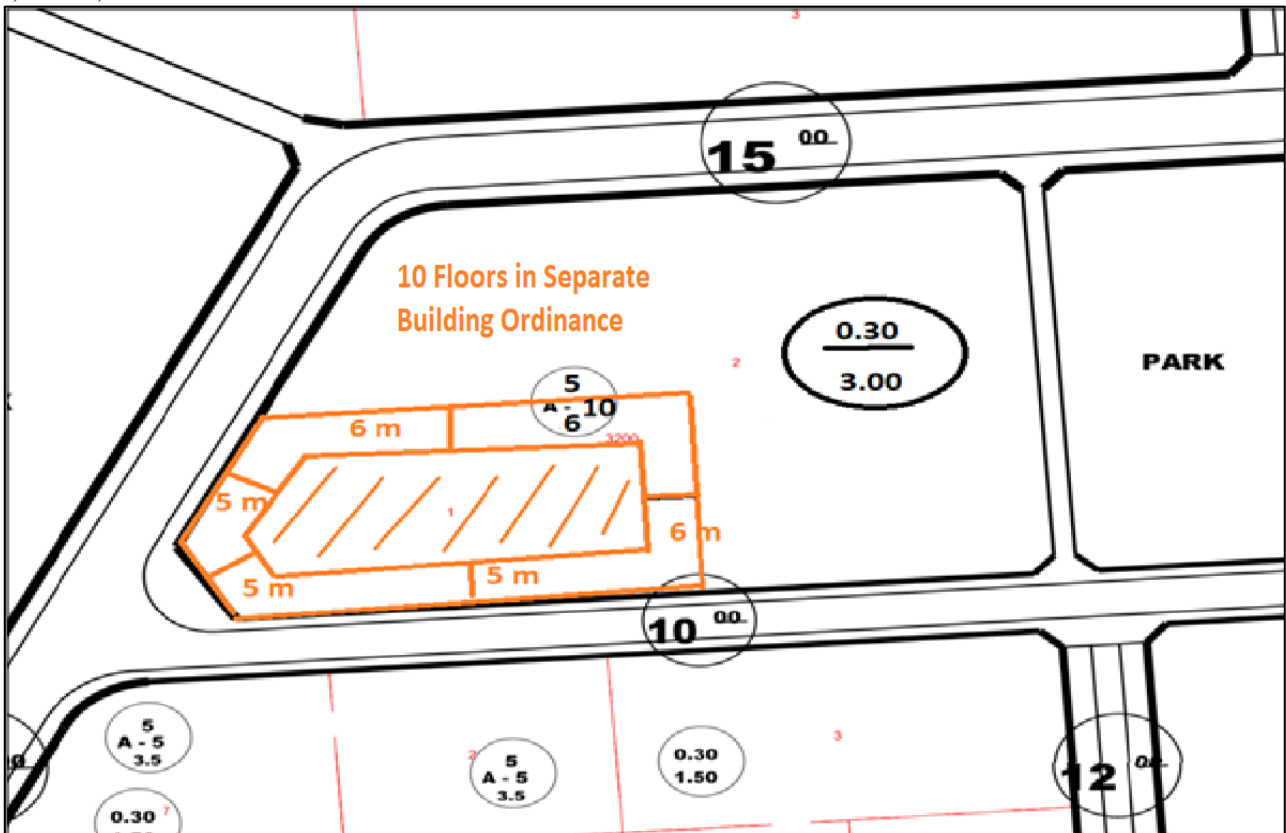


Figure 5. Split Ordinance 10 Floor Zoning Diameter View

In Figure 5, the zoning diameter, front drawing distances of 5 meters and side garden distances of 6 meters are given in the development parcel located on a zoning island in a separate building order. The amount of TKS is shown as 0.30, and the amount of KAKS is shown as 3.00 by multiplying TAKS by 10 times as a total precedent. Let  $x y V$  be defined as  $x y V \partial \in$  for  $\in$  and  $r x V \in$  for  $r R x V \in \in$ ; that is, let the set  $V$  be closed for vector

addition and scalar multiplication [9]. When the parcel is considered as a universal cluster, such as nested clustering in a parcel with 5 floors, the building's sitting on a parcel with a discrete structure is considered as a subset. After the tensile measurements, it coincides with the same logic, as a mathematical plane, with its narrowing from the origin.

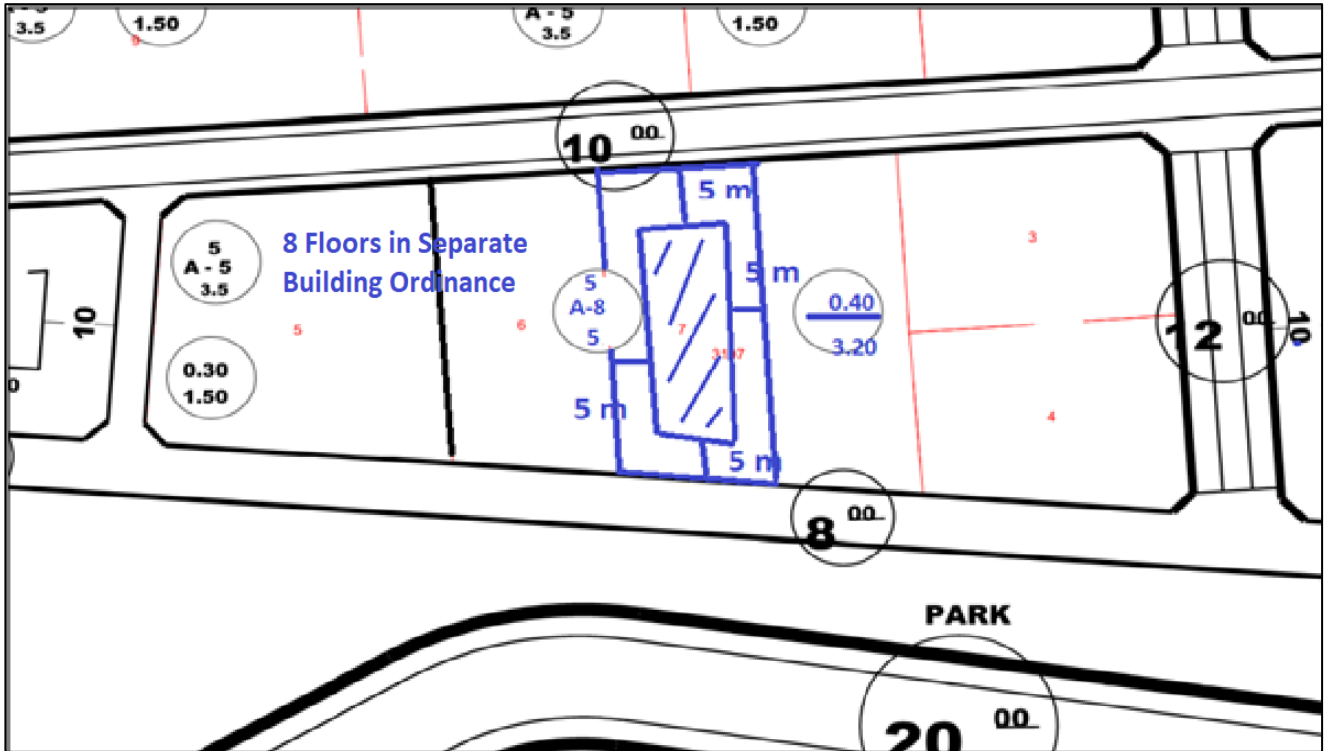


Figure 6. Split Ordinance 8 Floor Zoning Diameter View

In Figure 6., the zoning diameter is given in the middle, since it can be built 5 meters each in the north and south directions, and 8 floors from the side gardens, in a zoning parcel with permission up to 8 floors, in a separate building order, since the parcel can be built in the direction of the maximum precedent. Let  $x y V$  be defined as  $x y V \partial \in$  for  $\in$  and  $r x V \in$  for  $r R x V \in \in$ ; that is, let

the set  $V$  be closed for vector addition and scalar multiplication [9]. When the parcel is considered as a universal cluster, such as nested clustering in a parcel with 5 floors, the building's sitting on a parcel with a discrete structure is considered as a subset. After the tensile measurements, it coincides with the same logic, as a mathematical plane, with its narrowing from the origin.

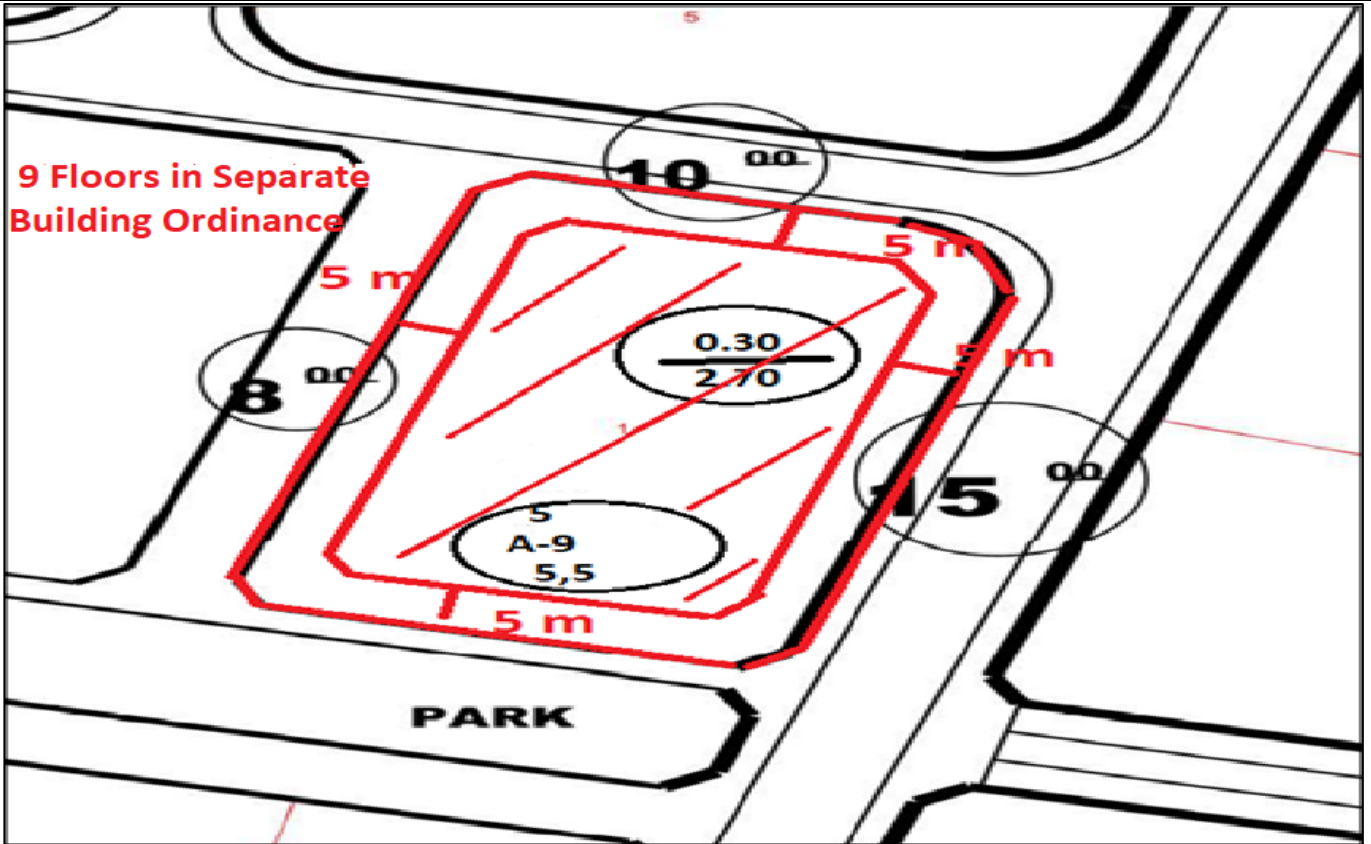


Figure 7. Split Ordinance 9 Floor Zoning Diameter View

In Figure 7., since one side of the parcel will face the road, only the front drawing garden distance will be given and the zoning diameter will be drawn, especially in the zoning islands that have been recorded in the legend as a single zoning. In this zoning plot, 5 meters were drawn each. We see that the floor area of the parcel with permission up to 9 floors is 0.30 and the total equivalent is 2.70 in the separate order. Let  $x y V$  be defined as  $x y V \partial$

$\in$  for  $\in$  and  $r x V \in$  for  $r R x V \in \in$ ; that is, let the set  $V$  be closed for vector addition and scalar multiplication [9]. When the parcel is considered as a universal cluster, such as nested clustering in a parcel with 9 floors, the building's sitting on a parcel with a discrete structure is considered as a subset. After the tensile measurements, it coincides with the same logic, as a mathematical plane, with its narrowing from the origin.

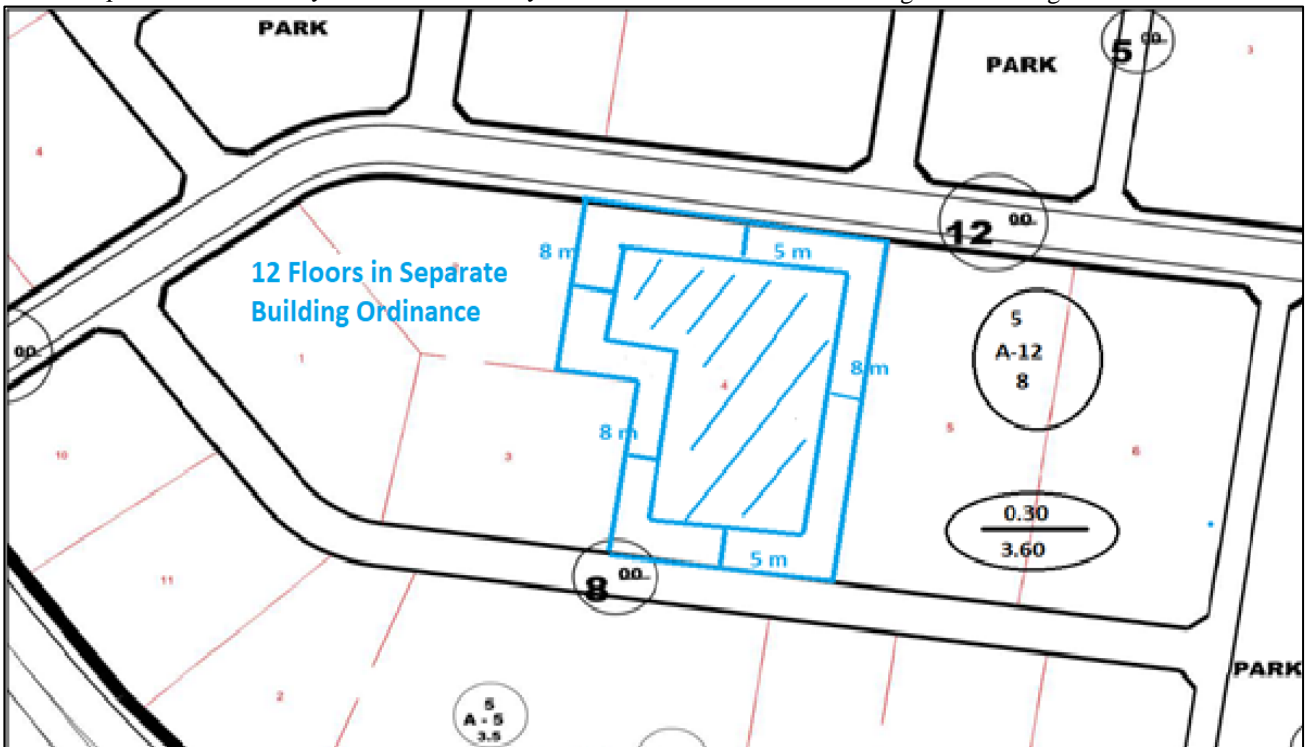


Figure 8. Split Ordinance 12 Floor Zoning Diameter View

In Figure 8., since the parcel on the zoning island, which is in the order of a allowable discrete building up to 12 floors, is a parcel with north and south facades, the front drawing distances are 5 meters, and the side garden distances are 12 floors, and the building residence area is determined by giving 8 meters. It is given that there is a total precedent for 12 floors as  $E=3.60$ , that is, it will be understood that title deed area x precedent = total building stock. Let  $x y V$  be defined as  $x y V \partial \in$  for  $\in$  and  $rx V \in$

for  $r R x V \in \in$ ; that is, let the set  $V$  be closed for vector addition and scalar multiplication [9].When the parcel is considered as a universal cluster, such as nested clustering in a parcel with 12 floors, the building's sitting on a parcel with a discrete structure is considered as a subset. After the tensile measurements, it coincides with the same logic, as a mathematical plane, with its narrowing from the origin.

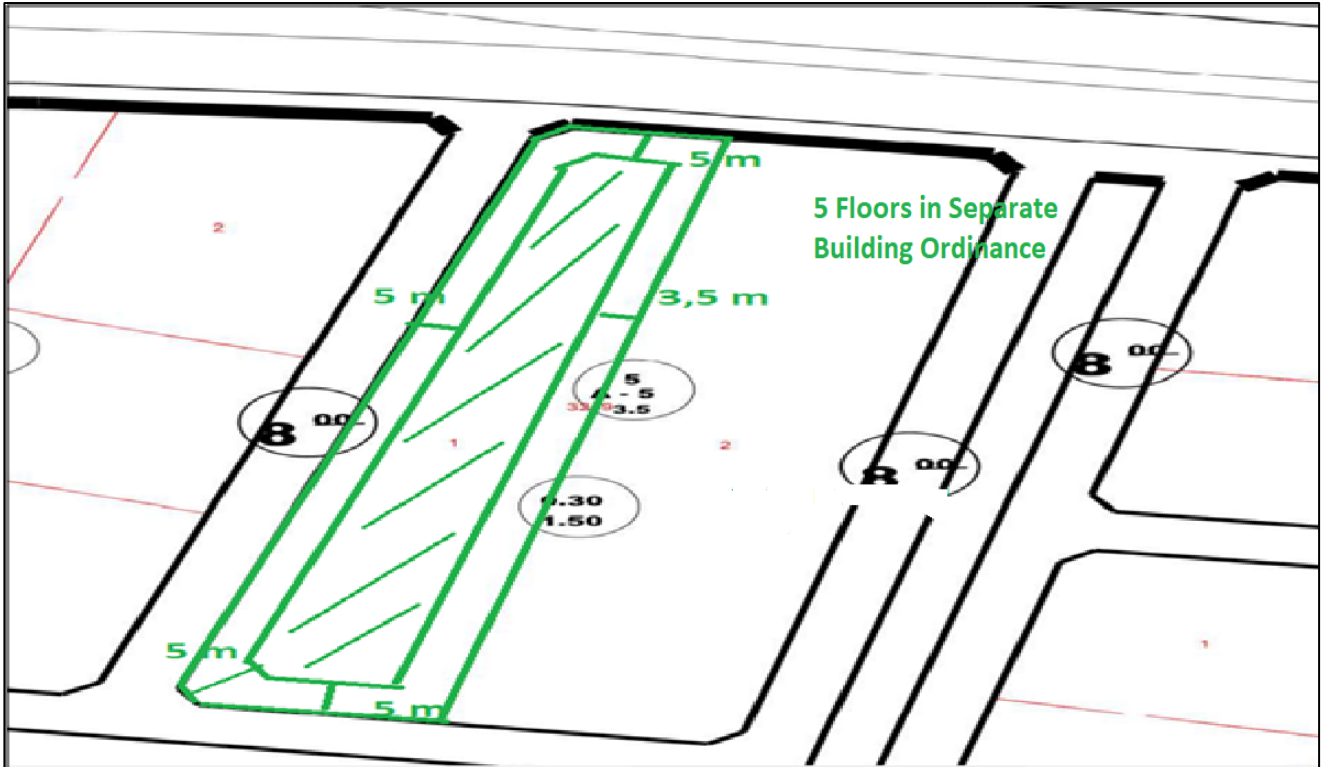


Figure 9. Split Ordinance 5 Floor Zoning Diameter View

In Figure 9., there are 2 zoning parcels on a zoning island with a separate order up to 5 floors. Since 3 sides of the parcel in the west direction face the road, front drawings were made for 5 meters each, and the side garden distance was drawn by 3.5 meters to determine the building's residence area. Let  $x y V$  be defined as  $x y V \partial \in$  for  $\in$  and  $rx V \in$  for  $r R x V \in \in$ ; that is, let the set  $V$  be closed

for vector addition and scalar multiplication [9].When the parcel is considered as a universal cluster, such as nested clustering in a parcel with 5 floors, the building's sitting on a parcel with a discrete structure is considered as a subset. After the tensile measurements, it coincides with the same logic, as a mathematical plane, with its narrowing from the origin.

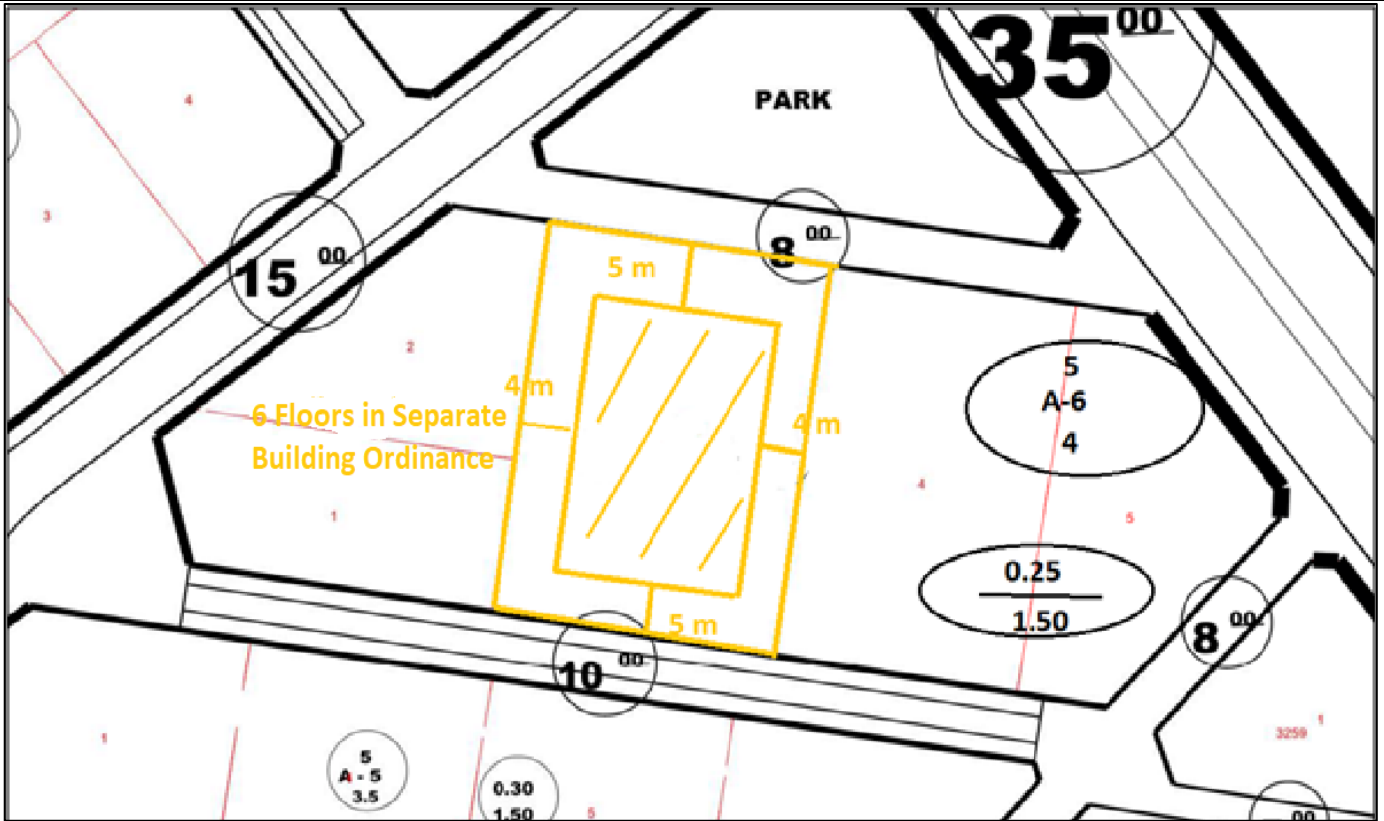


Figure 10. Split Ordinance 6 Floor Zoning Diameter View

In Figure 10., since the relevant parcel is oriented to the north and south, the front draws are given by 5 meters, and the side garden distances are given by drawing 4 meters, since it is 6 floors. Let  $x \in V$  be defined as  $x \in V \cap \partial \in$  for  $\epsilon$  and  $r \in V$  for  $r \in R \times V \in \epsilon$ ; that is, let the set  $V$  be closed for vector addition and scalar multiplication [9].

When the parcel is considered as a universal cluster, such as nested clustering in a parcel with 6 floors, the building's sitting on a parcel with a discrete structure is considered as a subset. After the tensile measurements, it coincides with the same logic, as a mathematical plane, with its narrowing from the origin.

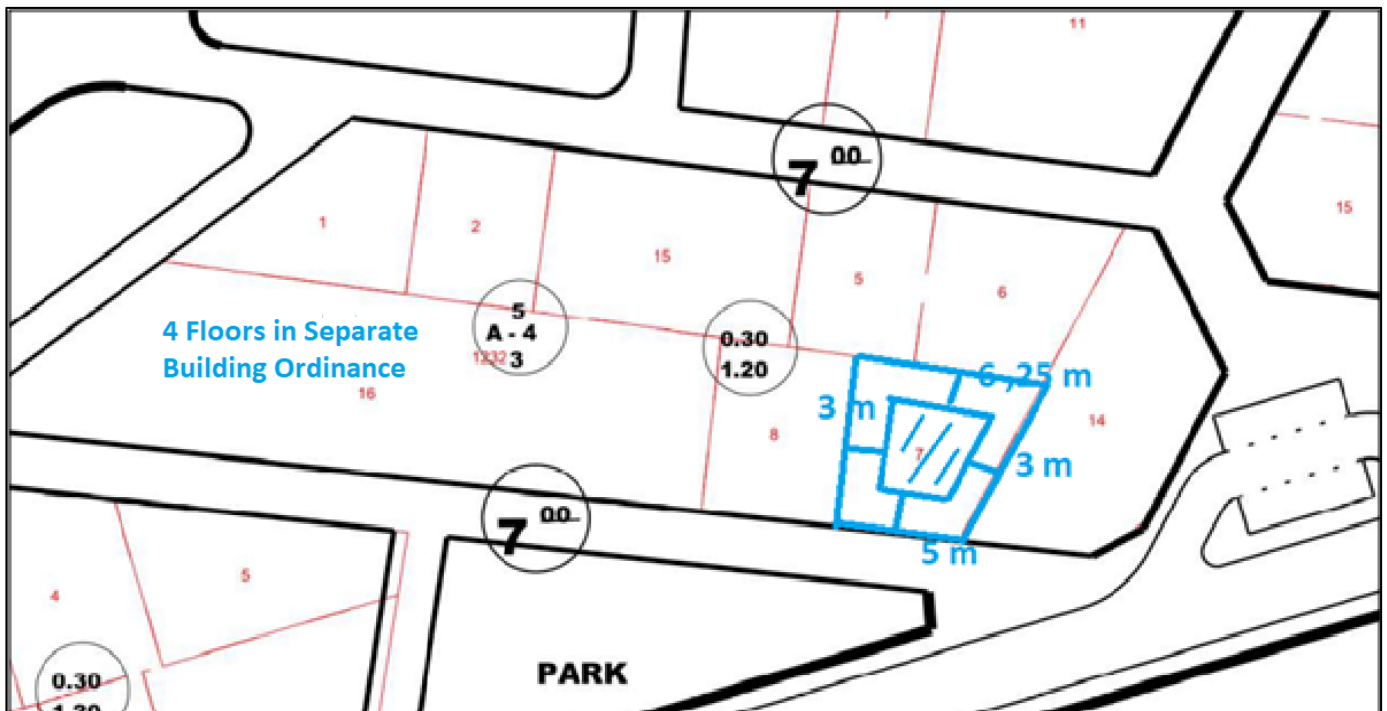


Figure 11. Split Ordinance 4 Floor Zoning Diameter View



In Figure 11, it is shown how zoning distances should be drawn about the front and side gardens in the examples that always face the road with double or triple facades in the other examples. Since only one side of this zoning plot faces the road, the front towing distance is 5 meters and the side is 3 meters, since it is allowed up to 4 floors, and it will be seen that the back garden distance appears. According to the planned type, the rear pulling distance must be in the form of  $H/2=(3*\text{Number of floors} + \text{eave share})/2$ . If the minimum parcel depth will fall below 10 meters due to the rear pulling to be given, it should be drawn by 3 meters. If this is not the case, the drawing

distance will be applied by giving  $H/2$ . Therefore, the rear drawing distance of the parcel is given as 6.25 m. Let  $x y V \partial \in$  for  $\in$  and  $r x V \in$  for  $r R x V \in \in$ ; that is, let the set  $V$  be closed for vector addition and scalar multiplication [9]. When the parcel is considered as a universal cluster, such as nested clustering in a parcel with 4 floors, the building's sitting on a parcel with a discrete structure is considered as a subset. After the tensile measurements, it coincides with the same logic, as a mathematical plane, with its narrowing from the origin.

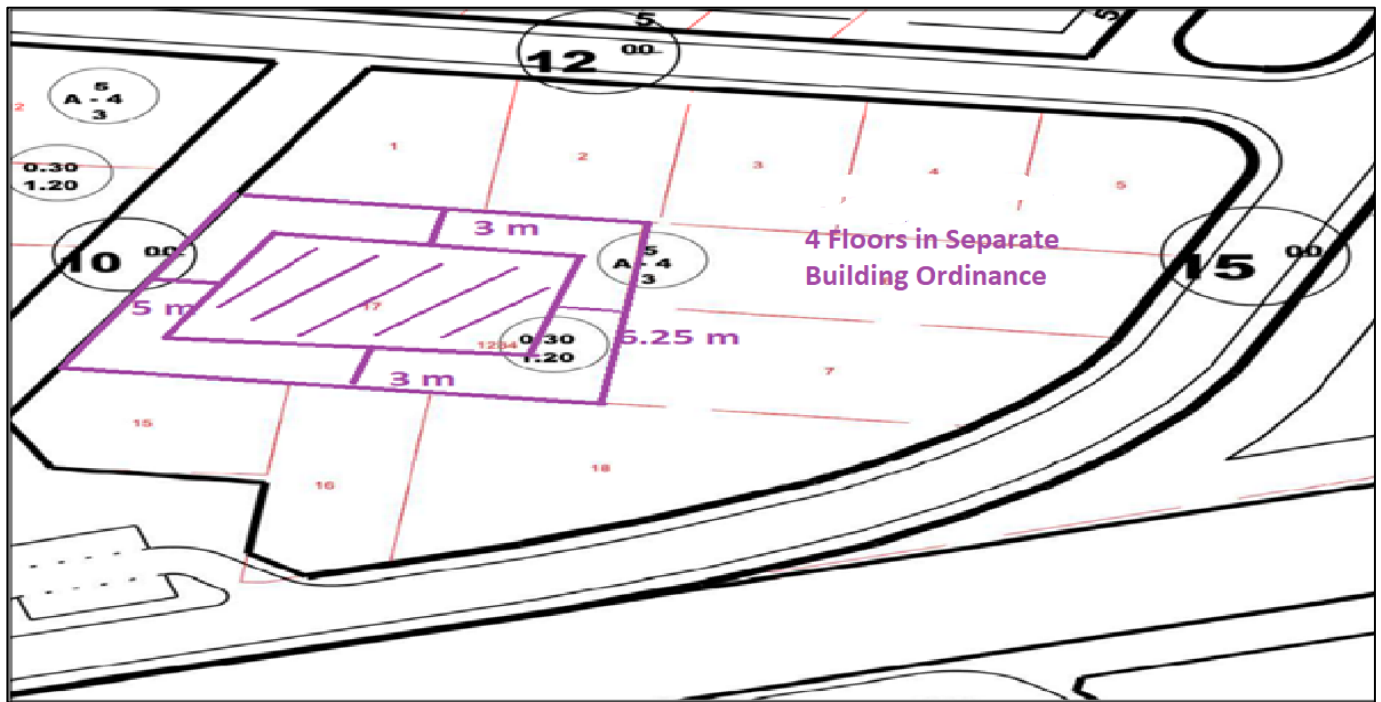


Figure 12. Split Ordinance 4 Floor Zoning Diameter View

In Figure 12., since the immovable property is a zoning parcel with permission up to 4 floors, the front drawing distance is 5 meters, the side garden is 3 meters, and the back garden distance is half of the 6.25 m height, and the zoning diameter is given. Let  $x \in V$  be defined as  $x \in V \cap \partial \in$  for  $\in \in$  and  $r \in V$  for  $r \in R \times V \in \in$ ; that is, let the set  $V$  be closed for vector addition and scalar multiplication [9]. When the parcel is considered as a universal cluster, such as nested clustering in a parcel with 4 floors, the building's sitting on a parcel with a discrete structure is considered as a subset. After the tensile measurements, it coincides with the same logic, as a mathematical plane, with its narrowing from the origin.

#### IV. CONCLUSION

The development plans are put into effect in places where there are municipalities such as provinces, districts, towns, according to their scales in the form of master and implementation, and the right understanding of urbanism is tried to be revealed. In these zoning plan legends, zoning islands such as housing, residential trade, trade, socio-cultural, sports facility, DOP areas are created so that cadastral parcels can be converted into zoning parcels by properly dumping them into these islands, and they can get a license for construction. On the islands in the residential areas, the area should be opened from the inside out and the building sessions should be appropriate by giving the distance approximations of these parcels with nested clustering. For this reason, zoning islands are created in adjacent areas in regional centers, and in clear building regulations such as blocks and separate layouts in places to be opened for new settlements. In these islands, it is explained how the zoning diameters should be given according to the planned type zoning regulation and the plan notes approved by the councils of the municipalities. In the examples in the study, the appropriate zoning diameter is shown by showing how the zoning parcels should be given in general in different separate building regulations. TAKS and KAKS calculations and the total equivalent calculations to be used in architectural projects are also tried to be shown and the correct structure formation is examined. Our suggestion is that the zoning diameters should be given in accordance with the convex geometries of the zoning distances and distance approaches specified in the law and regulation, by considering all the parcels in the zoning island, paying attention to the existing structures on the other parcels, without victimizing the neighboring parcels.

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#### Authors' Contributions

The authors' contributions to the paper are equal.

#### Statement of Conflicts of Interest

There is no conflict of interest between the authors.

#### Statement of Research and Publication Ethics

The authors declare that this study complies with Research and Publication Ethics

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