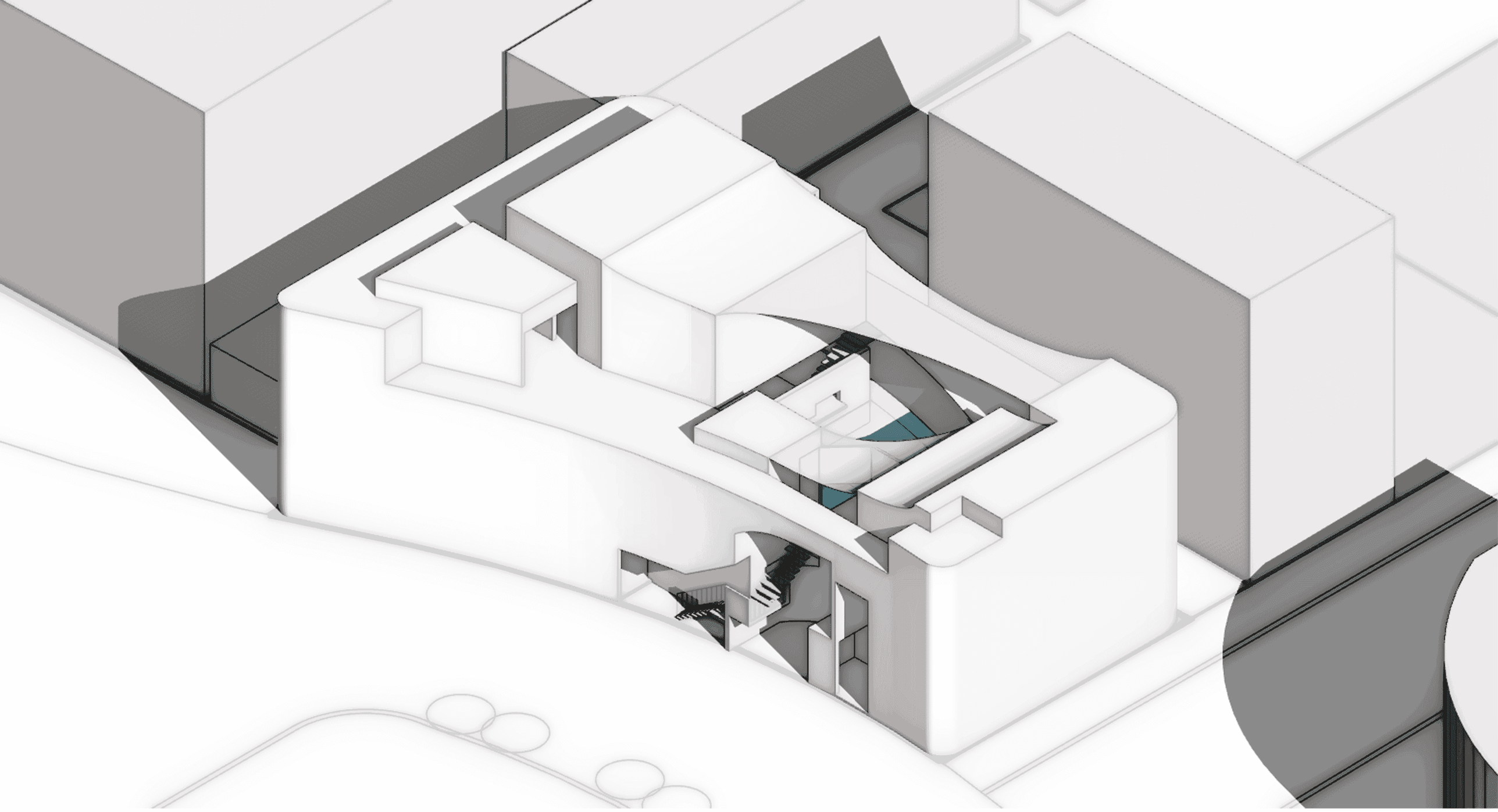


## Vertical Design:

# Zootopia- Community Center

# Vertical Design:

# Zootopia- Community Center

**Intro**

Responses to architectural problems: Vertical Design
Real Base: Shanghai Jiulong Road 1933 area, west of Shajing Road.
Spatial function choice: Community center/Transportation hub/complex TOD...
Key issues to solve in a script situation: < Sharing by users of different sizes >.
Initial ideas that generate design impulse:

- High exit: elephant taxi and its management room
- Flying buttresses that mimic animal forms
- Tracks where small animals travel freely
- ...

Tools: Sketchup

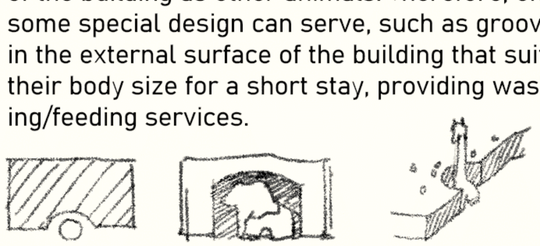
Support structure beautifully stretching such as flying buttresses.

***Intention Collage***

Large animals stay on the outside of the building. Thus small and medium-sized animals could climb on it from the (movable) bridges that extend out of the building, as well as help with feeding and cleaning.


## Preliminary thoughts:

The size of the site is suitable for human scale. So space for big animals (elephants/giraffes, etc.) may not be easy to arrange-- their users are doomed to be unable to use full functions of the building as other animals. Therefore, only some special design can serve, such as grooves in the external surface of the building that suit their body size for a short stay, providing washing/feeding services.

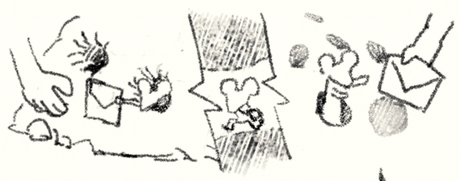


Each animal's locomotion ability and locomotion methods are also different. But according to zootopia's worldview, we assume that they all have upright behaviors close to humans.

## Study of animal habits:

Preference for narrow space


Burrowing



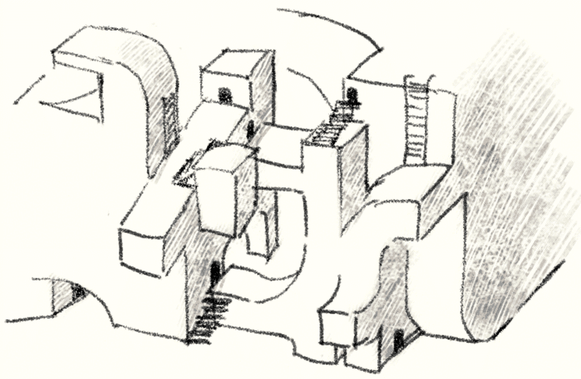
Water needs

## Design basis:

Animals in each body type range are divided into 2-3 categories to form a reference table, and several design methodologies are considered separately.

## Core concept:

**Three-dimensional street**
**& Changing scene when moving in it.**



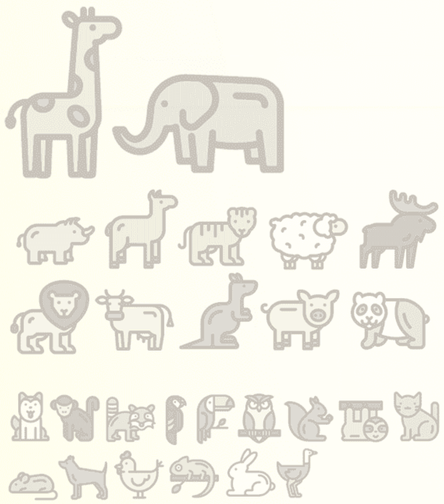
## Detailed design assignment:

This architecture is a comprehensive community center designed for the common use of three types of animals, each with a single design methodology:

Big: 3.5-4m, eg. elephant, giraffe. Try not to go inside and use the building from the outside. So you want the functional areas to be arranged around the perimeter.

Medium: 1.5-2m, eg. horse, leopard. Standard body type, the benchmark for design. Uses a design similar to human scale.

Small: Within 0.5m, eg. cat, dog. With multiple modes of transportation, they are agile messengers of information and spectators in all areas.

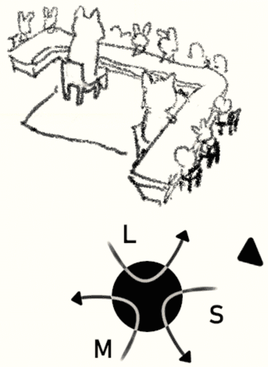


## Main functions:

Community activities.
Potluck, dance studio, concert, lecture hall, etc

Community services.
Community hospitals, bathing help for big animals, and various physical labor exchanges.
--Since animals have their own strengths and weaknesses, what they need to help each other to accomplish can be negotiated and traded here.

Management occupancy




ps. You can't design at three scales for every function.
For convenience, the basic service providers of this community center are mostly 1.5m~2m animals. Animals of other sizes are mostly served.

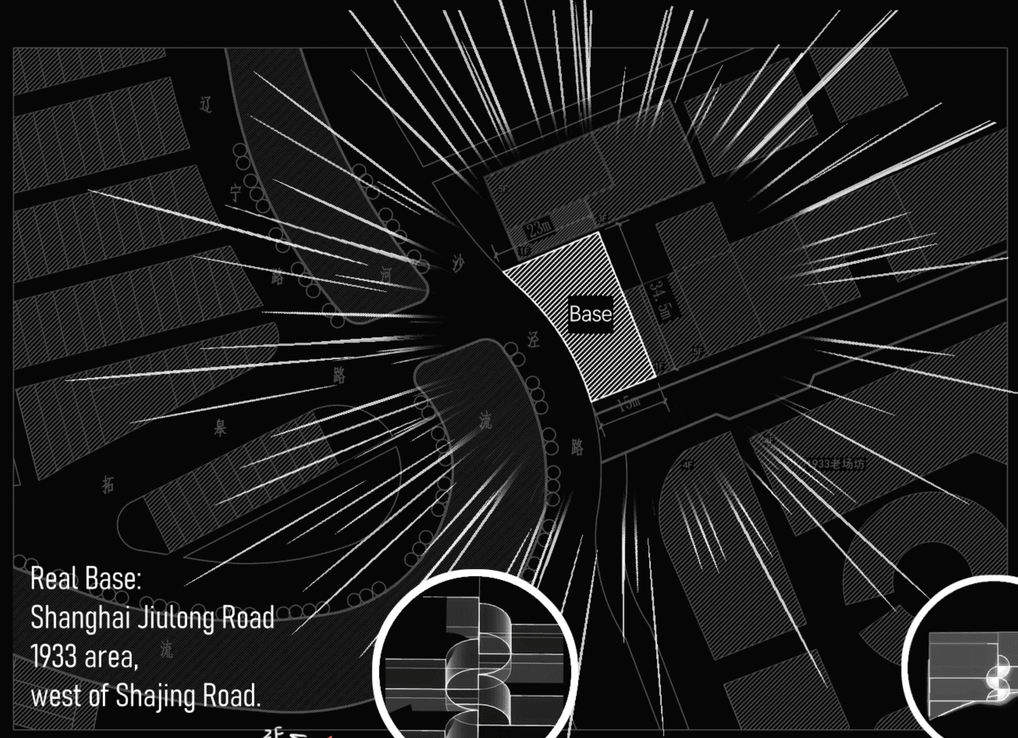
# Solution (1):

# Spirally Connected Four Blocks

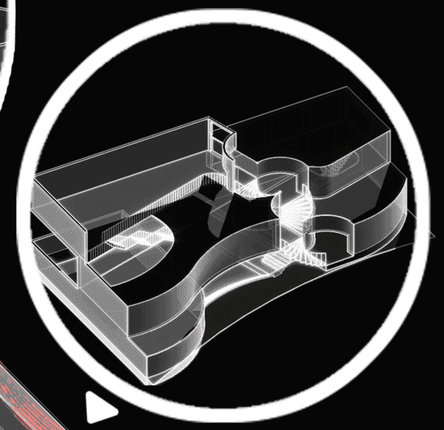
Core concept:

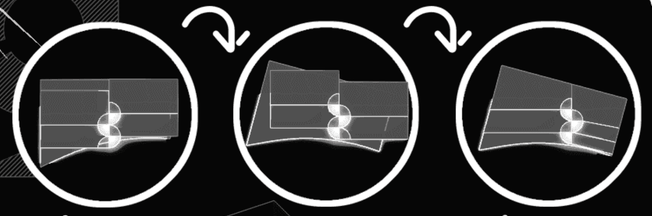
**Three-dimensional Street**

A winding entrance road connects various spaces, providing tour experience which runs left and right rhythmically.




Real Base:
Shanghai Jiulong Road
1933 area,
west of Shajing Road.



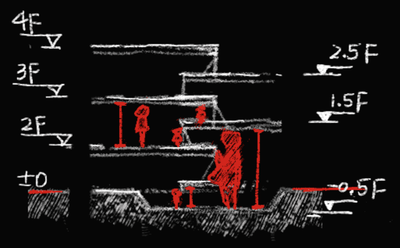





- Divide the site area into several parts in order to arrange different functions: 4 blocks of 18*9*3.6 m.

  Arrange them as staggered half-layer, forming a plurality of solid space and open space, and also a double-height space at the stack of two blocks.

  Each block is directly connected to the other three blocks.




- To accommodate animals of different heights, it may be necessary to use extra half floors.




Cast-in-place stairs: Emphasize the sculptural feel of the entire building.

Pedal stairs: the sight line will be more transparent, and the side walls can also be opened to outside climate, like a breathable forest.

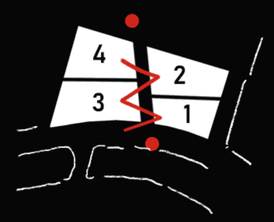
An entrance sequence is arranged in the middle, connecting the 4 blocks with a winding upward spiral route.

Cut their corners to create entrance space.

Add a staircase with entrances for each half floor height.



Keeping the central channel part unchanged, adjust the whole block according to the site boundary to form 4 areas with different sizes.




Select the location of the center path in the site. The entrance is in the most concave part of the arc road and develops diagonally towards the opposite center.



Refine the building and cut holes in the correlative wall to the staircase to enrich the main flow line.

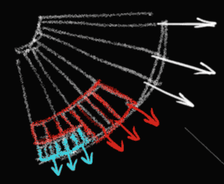


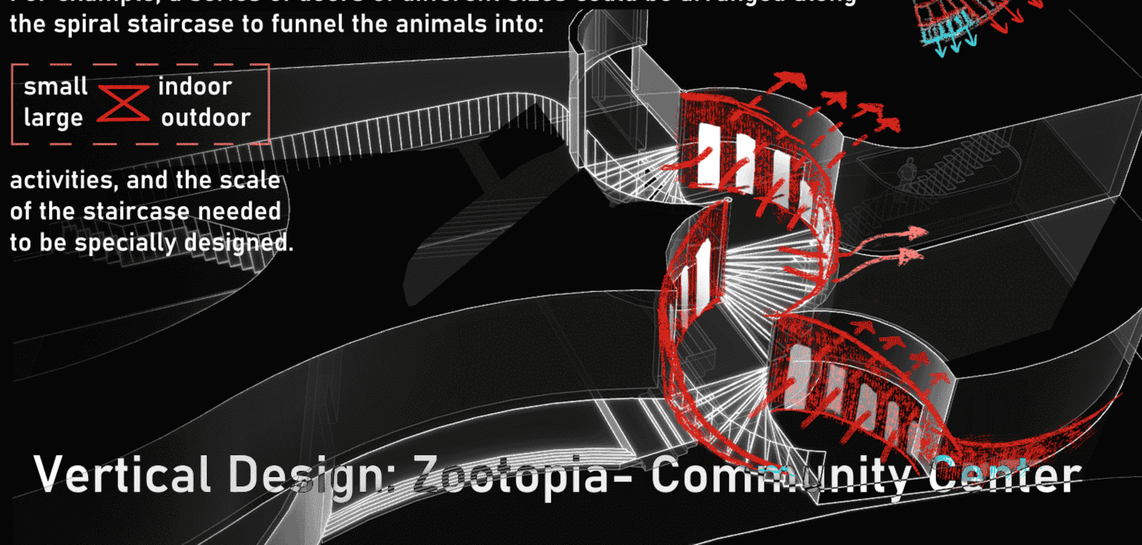
Adjust the appearance to streamline. Add a sunken plaza and put in traffic between each zone.

Because of the abundant roof terraces available, I hope for more flexible access to each area.
For example, a series of doors of different sizes could be arranged along the spiral staircase to funnel the animals into:

small ⇄ large
indoor ⇄ outdoor

activities, and the scale of the staircase needed to be specially designed.





Vertical Design: Zootopia- Community Center

# Solution (2):
# Subtraction from A Whole

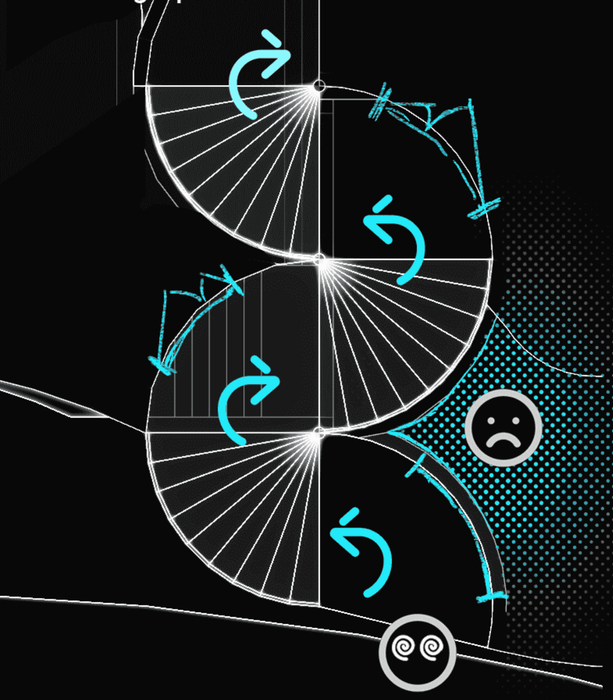
## Disadvantages of the first solution:

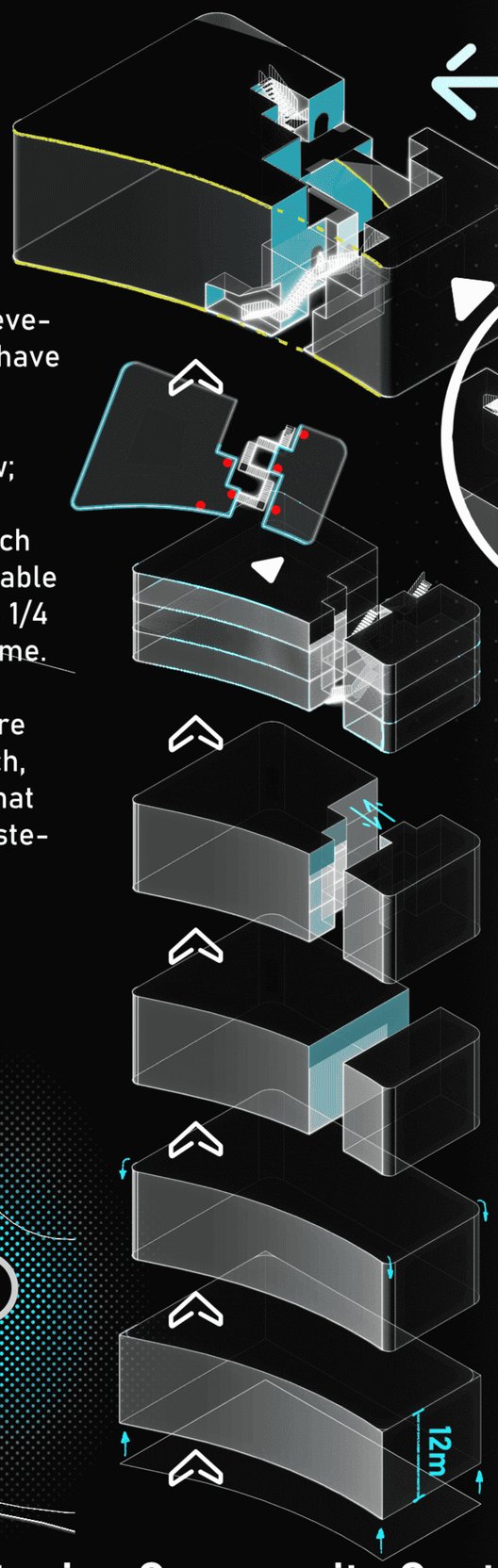
Not concise enough, and the development of each part does not have unity;

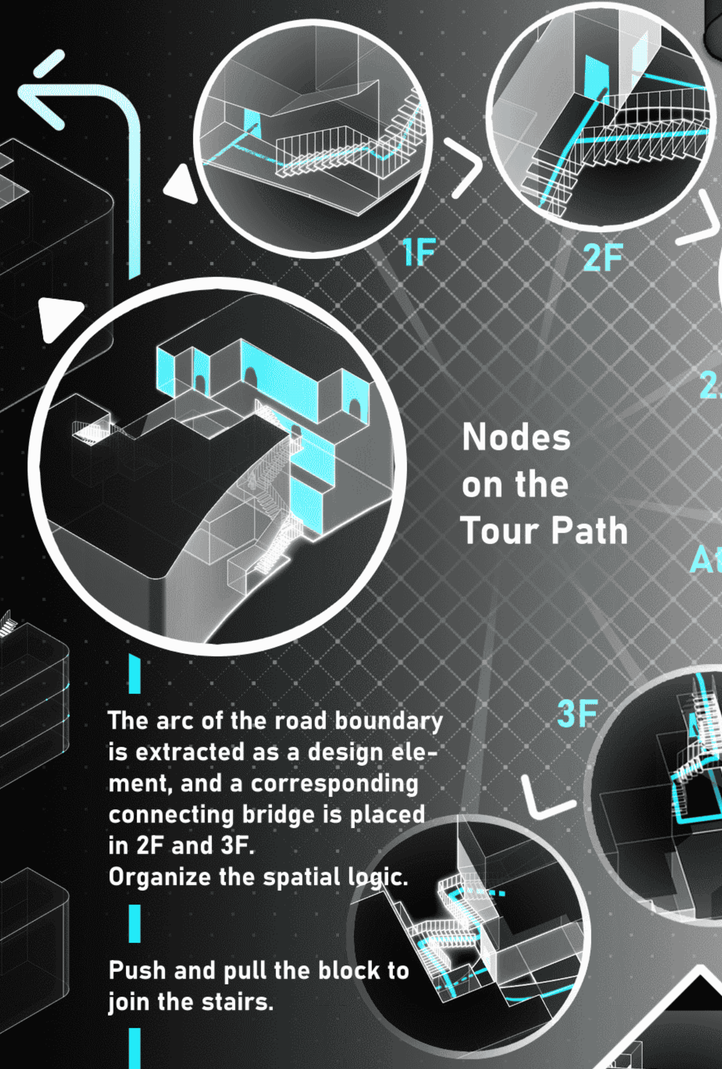
Space utilization rate is too low;

It produces lots of 1/4 arcs which are difficult to control. Unavoidable acute Angles look ugly. But the 1/4 circle is the basis for this scheme.

It needs to be changed to a more relaxed and functional approach, rather than a simple channel that is compact and has excessive steering speed.






**Nodes on the Tour Path**

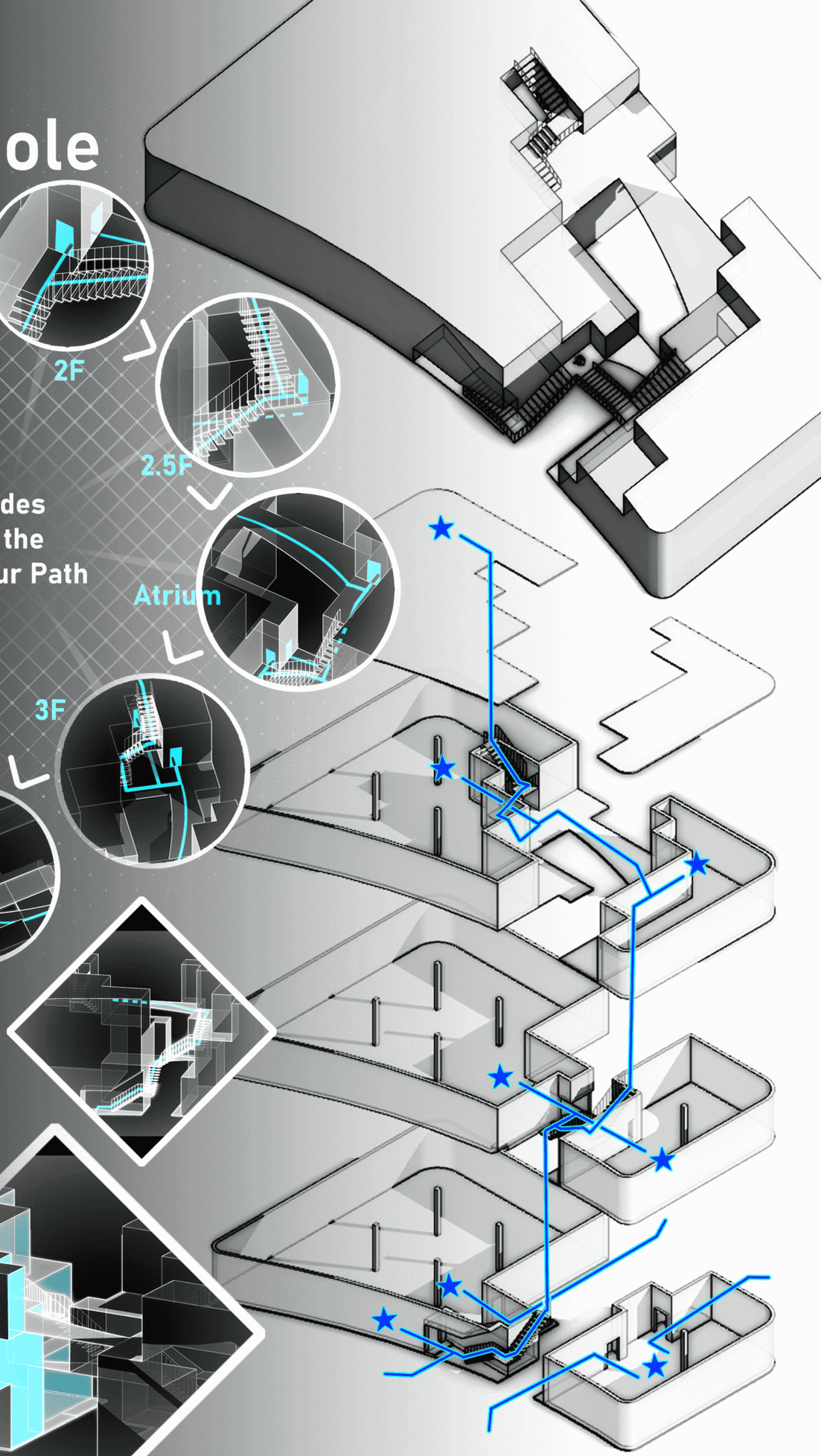
**The arc of the road boundary is extracted as a design element, and a corresponding connecting bridge is placed in 2F and 3F.**
**Organize the spatial logic.**

**Push and pull the block to join the stairs.**

**The main entrance passage is created by subtraction on it, dividing the whole into two parts, namely, providing space for two types of animals.**

**Cut fillet.**

**The concept of three-dimensional street was followed for the second design. This time, the plot is directly raised as the main body of the building.**



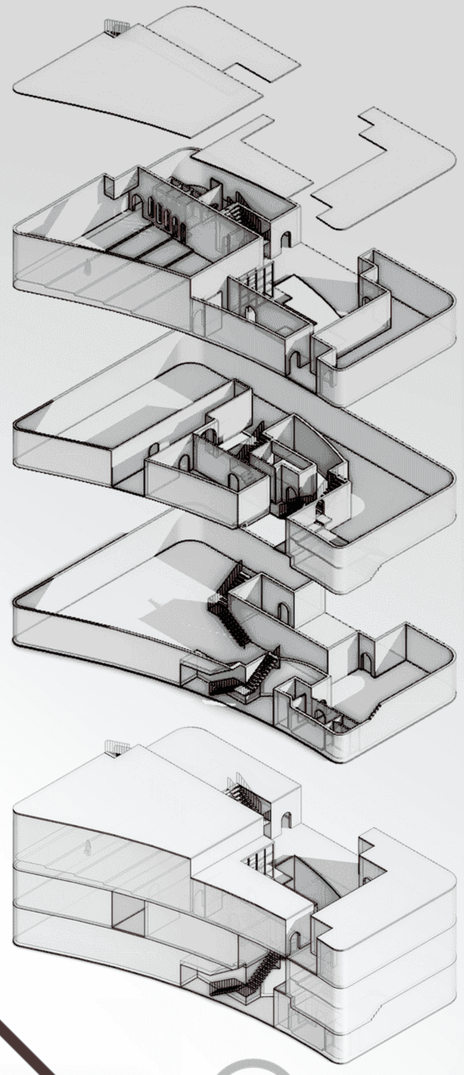
Vertical Design: Zootopia- Community Center

## Shortcomings of the second solution:

The connection between the two separate blocks is weak and both bridges are outdoor, which is difficult to embody the spirit of "animal race republic". It needs to be strengthened.

Following the overall logic of solution 2, the bridges are changed into blocks. Emphasize the tension between the two parts of the building.

Arrange more half-floor space and add openings.

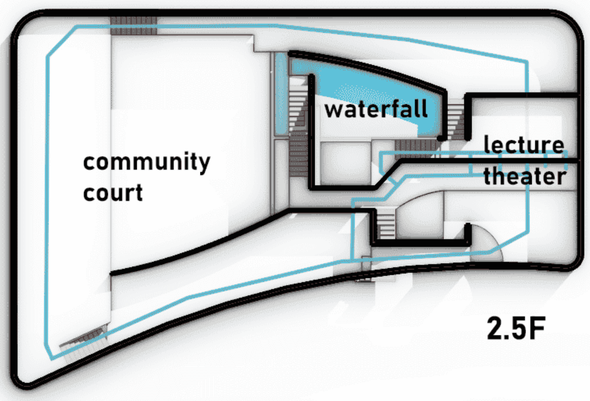


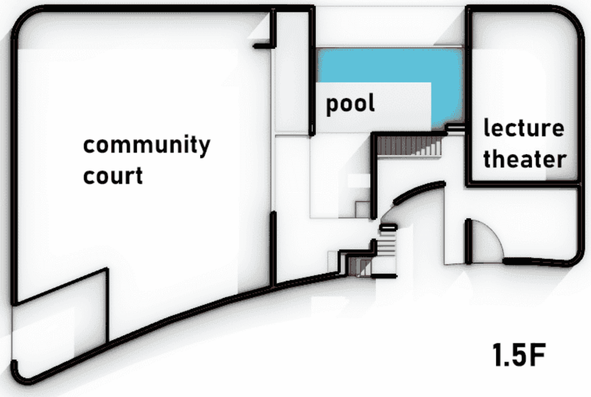
A case of dismissal

## Detailed thinking

### Overall strategy

Paths traverse and permeate the whole volume, and their intersection is a core patio that runs through the all three stories which serves as a transfer station.




Each half layer segmented from a whole layer is also gathered here.

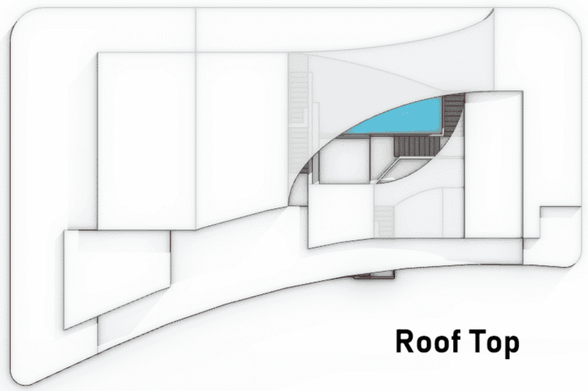
For example, at 1F, the smaller half layer is chosen close to the ceiling, namely the suspended ceiling;

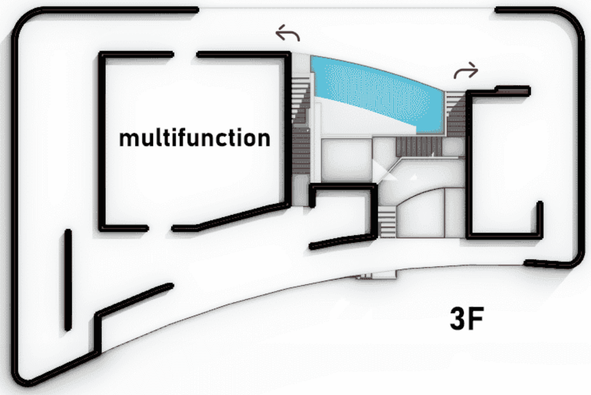
2F is divided into two half layers on average;

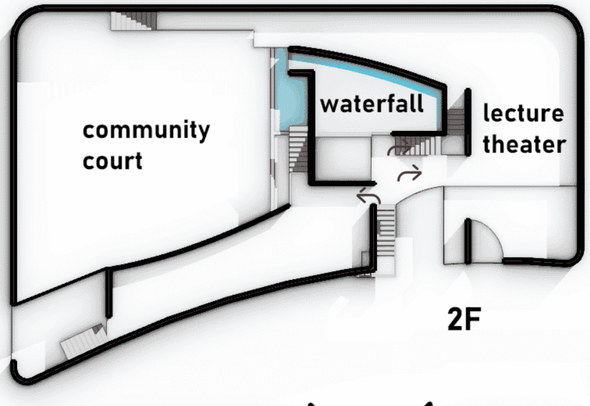
The 3F is composed of several small bodies, which adopt the strategy of growing upward from the horizon.

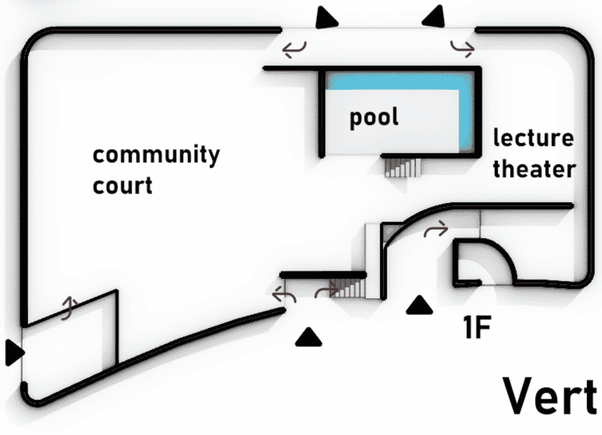
# Solution (3) to Final

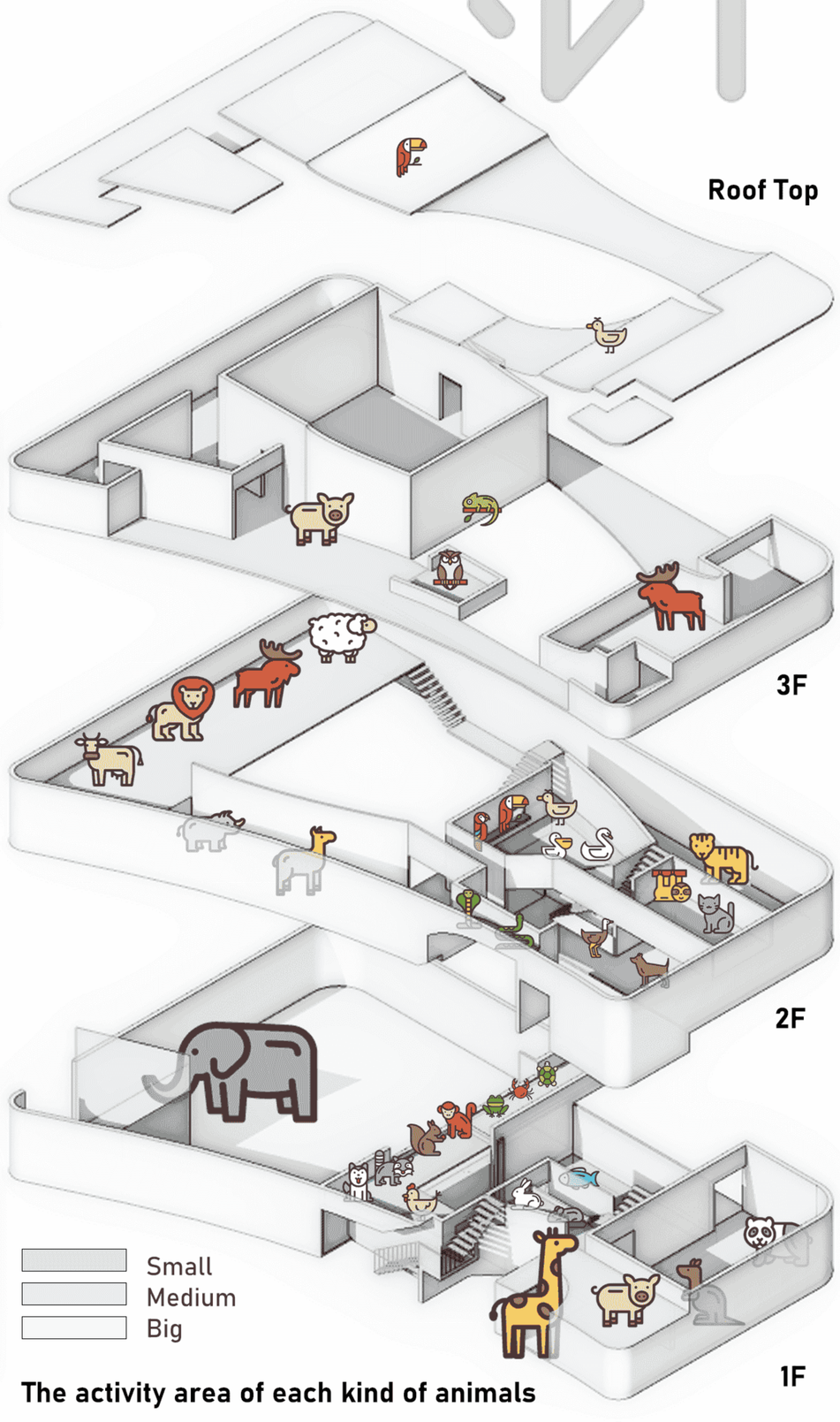
# Adapted from (2) and Promoted



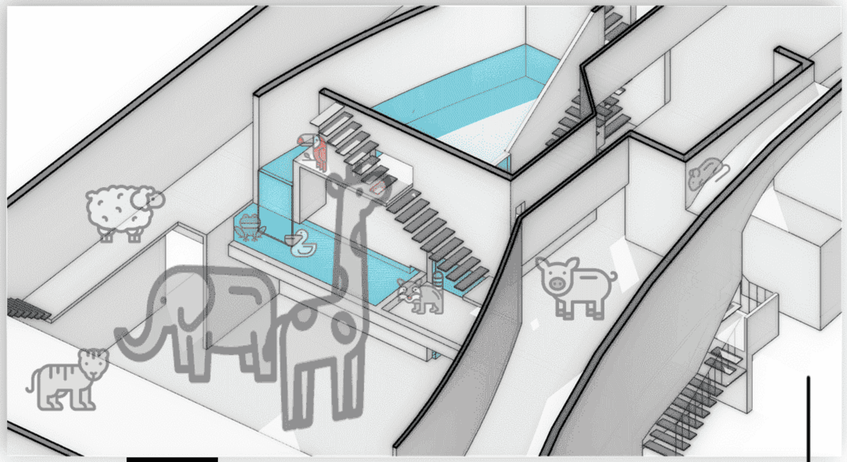




The activity area of each kind of animals

## Vertical Design: Zootopia- Community Center

# Functional area design

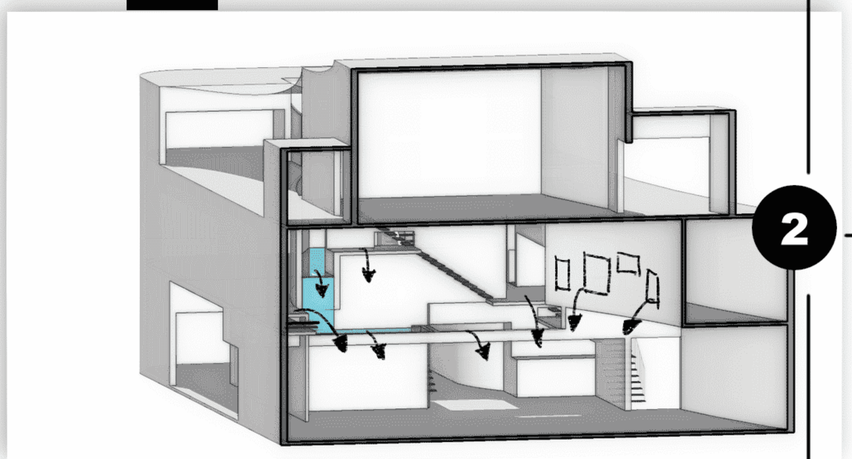


## Main entrance staircase — 1

Because the staircase has a turn around the exterior wall of the building, the inside of the turn diverts to several small mezzanines of different heights, which further wraps around the lighting patio.

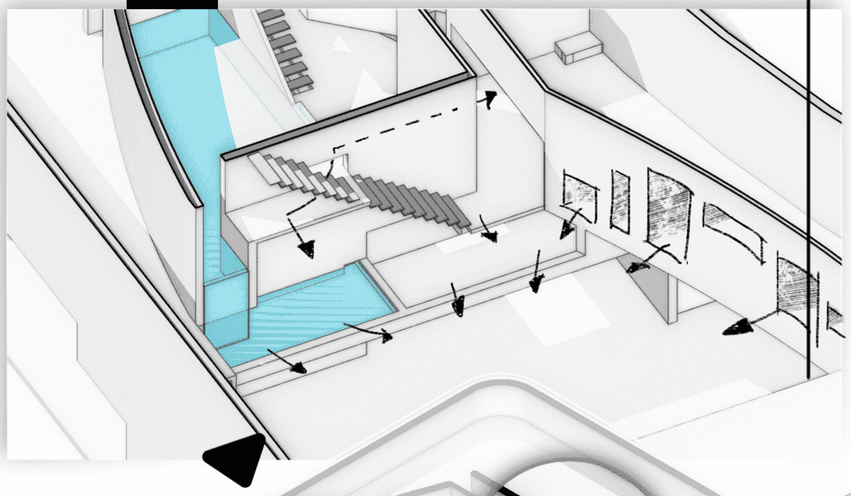
After diverted from the entrance to the 1F suspended ceiling, small animals can also rejoin the main line: the exit connects to an internal staircase that can also be used by medium-sized animals.

Thus it forms a narrative scene: Small animals on one side of the low activity space can see medium-sized animals (only part of their body) passing by from time to time, who can only use one flight of stairs and cannot enter the low space.



## "Community Court" — 2

This is a space where animals of all three sizes can enter and have their respective seats. The heads position of large animals are at least 2F and above, so 1F and 2F are opened up to form a space where the large animal can enter. It is designed to discuss and solve community problems, as well as trading and other activities.



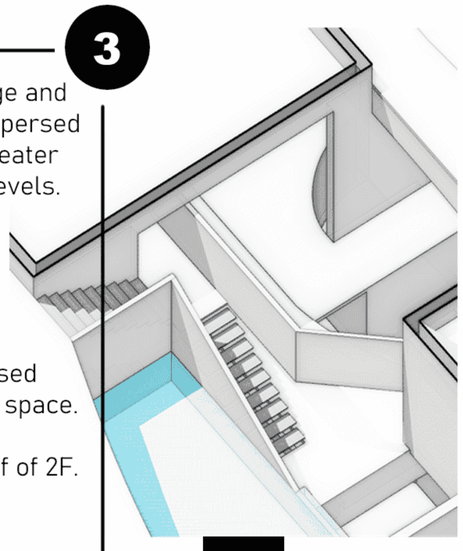
## Lecture hall — 3

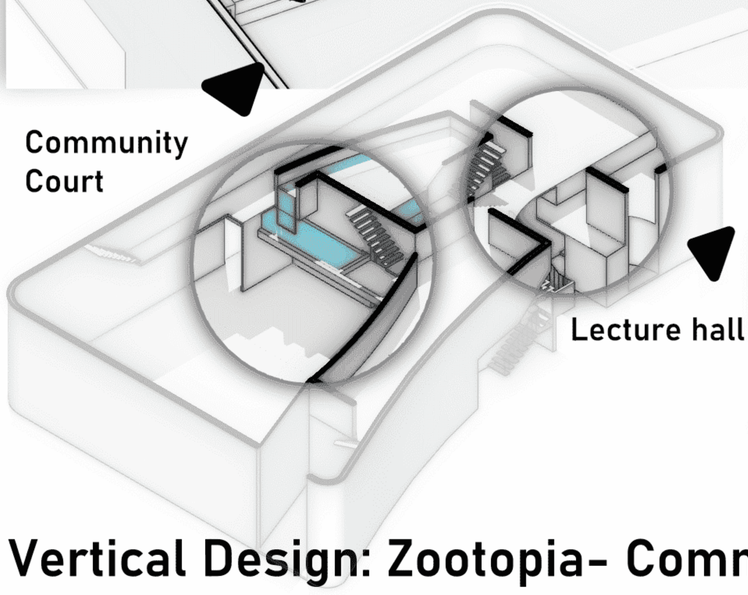
Complex entrances of large and small and the paths interspersed together form a lecture theater space and facade of rich levels.

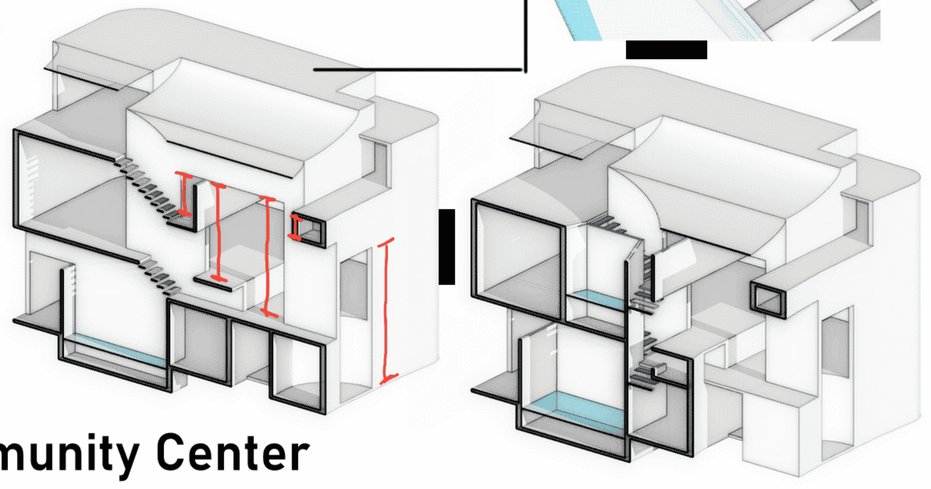
Large animals can attend at a semicircular opening along the road.

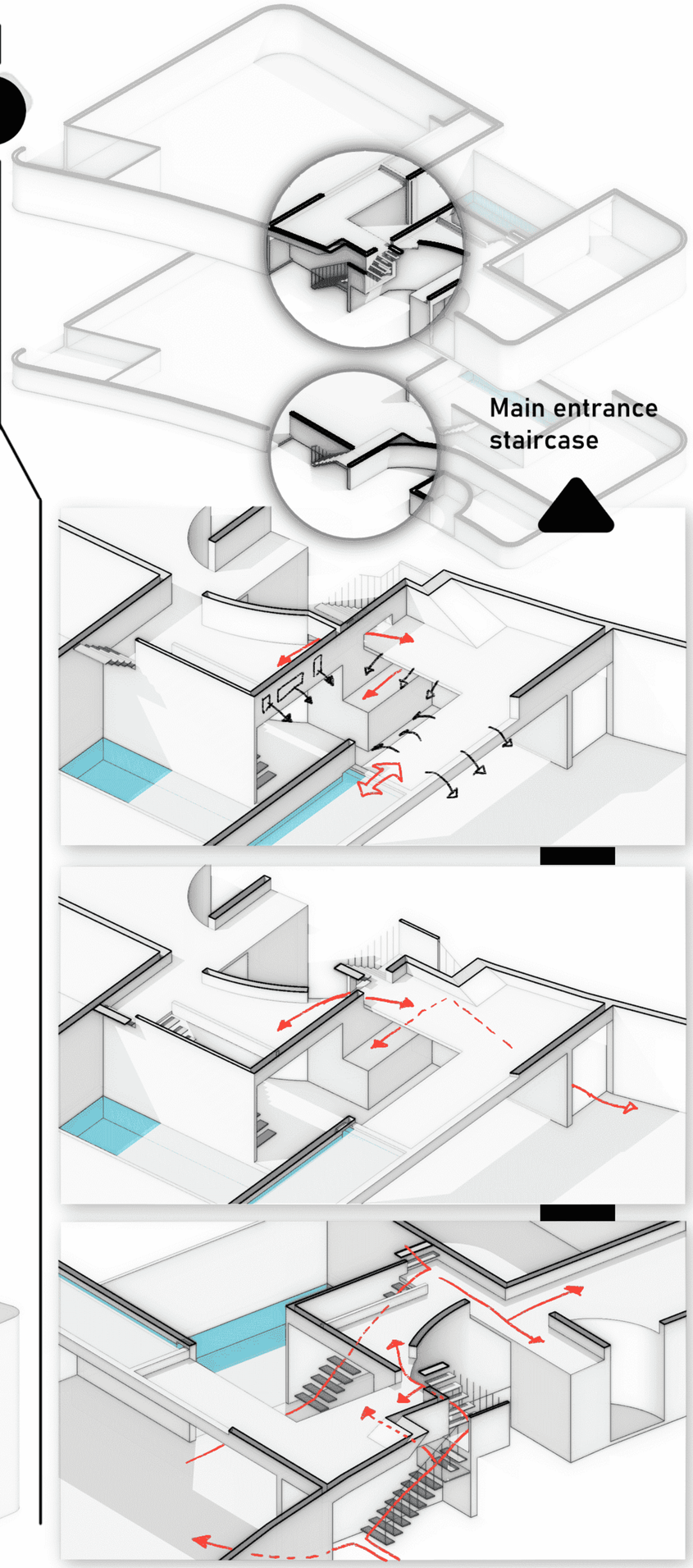
Each floor can also be closed as an independent activity space.

Landing into the upper half of 2F.





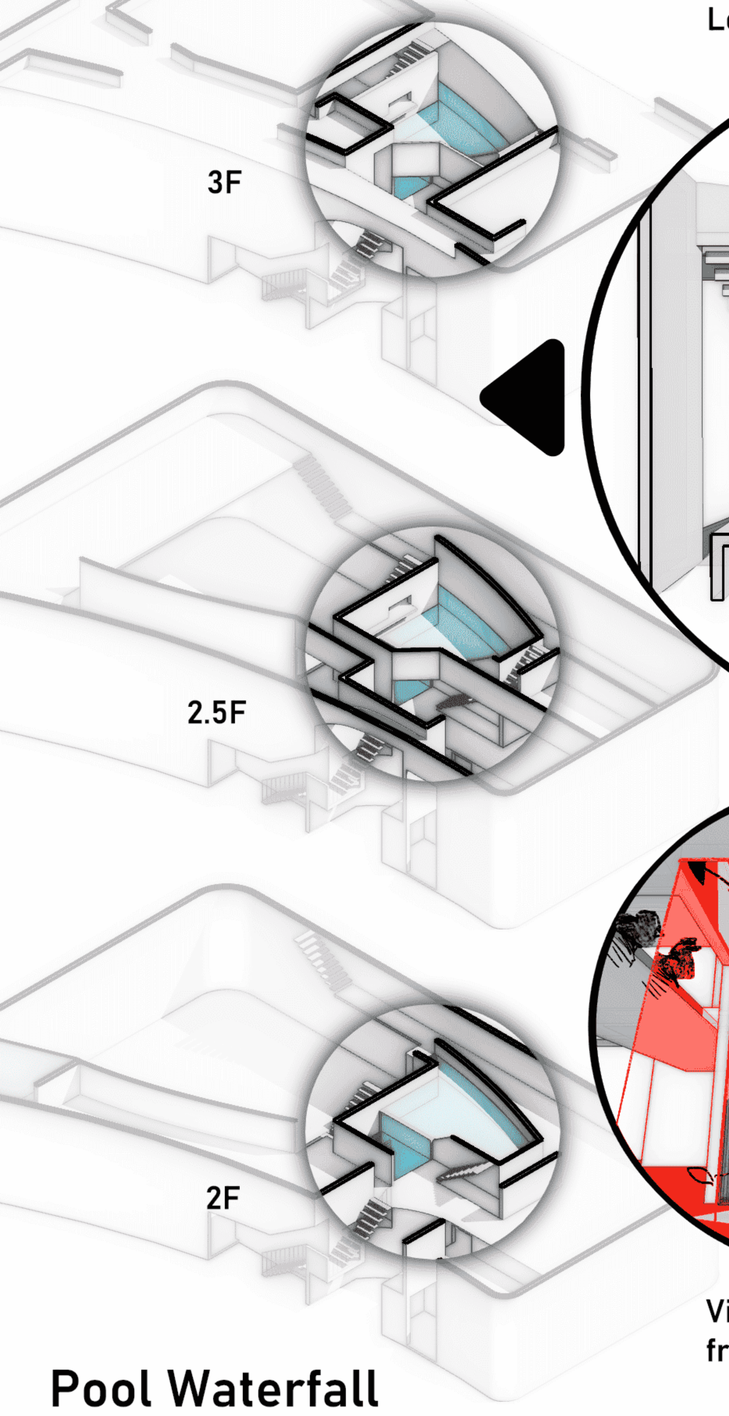



## Vertical Design: Zootopia- Community Center

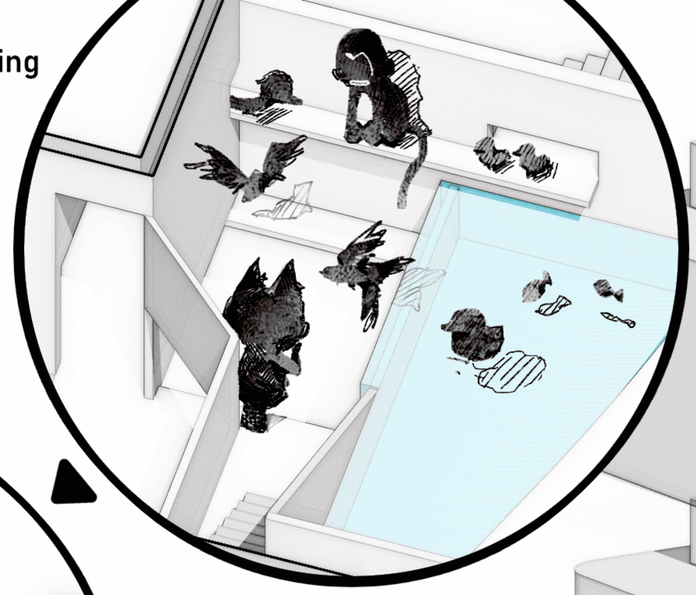
# Functional area design

## Lighting patio

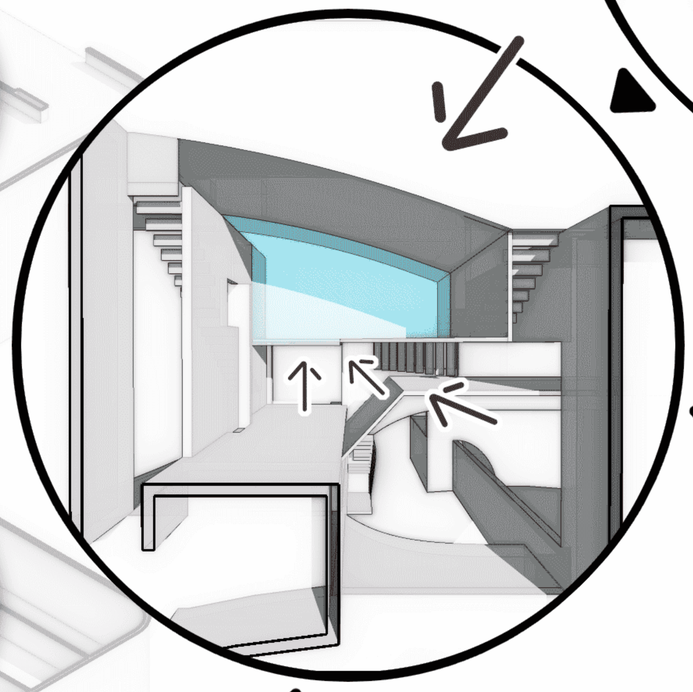
The core serves as a lighting patio. The flat spaces sandwiched between the stairs and the floor slab serves as places for small animals, and they all have a small facade facing the atrium with entrances and exits.

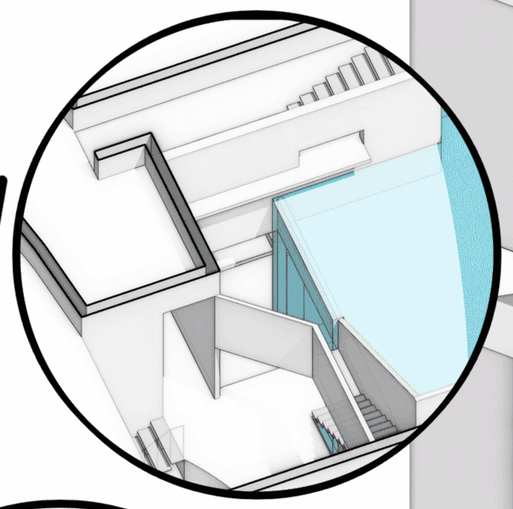


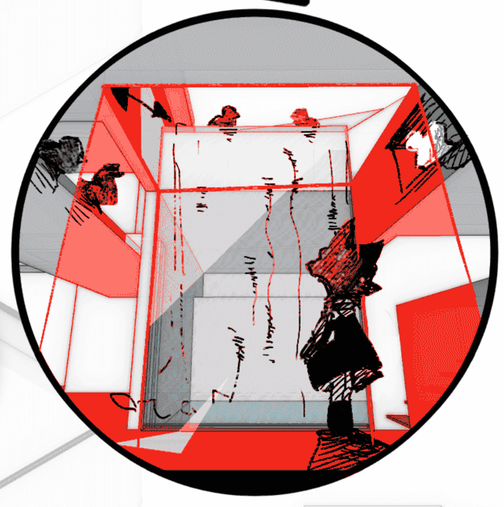

Oblique overlooking the patio

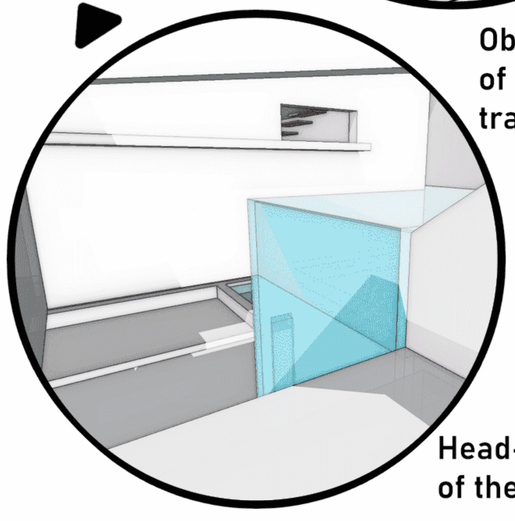


Looking down from the patio

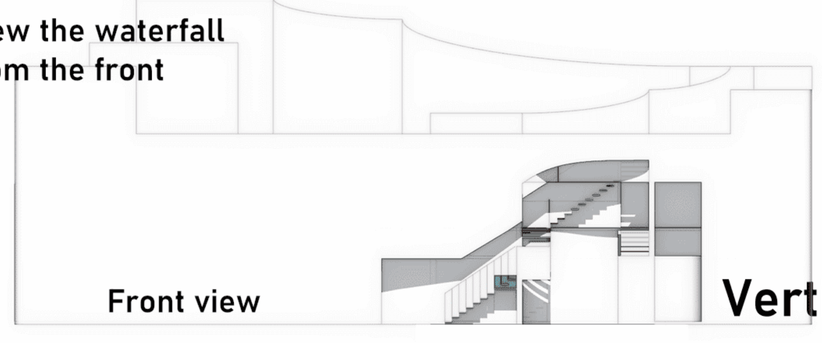








View the waterfall from the front

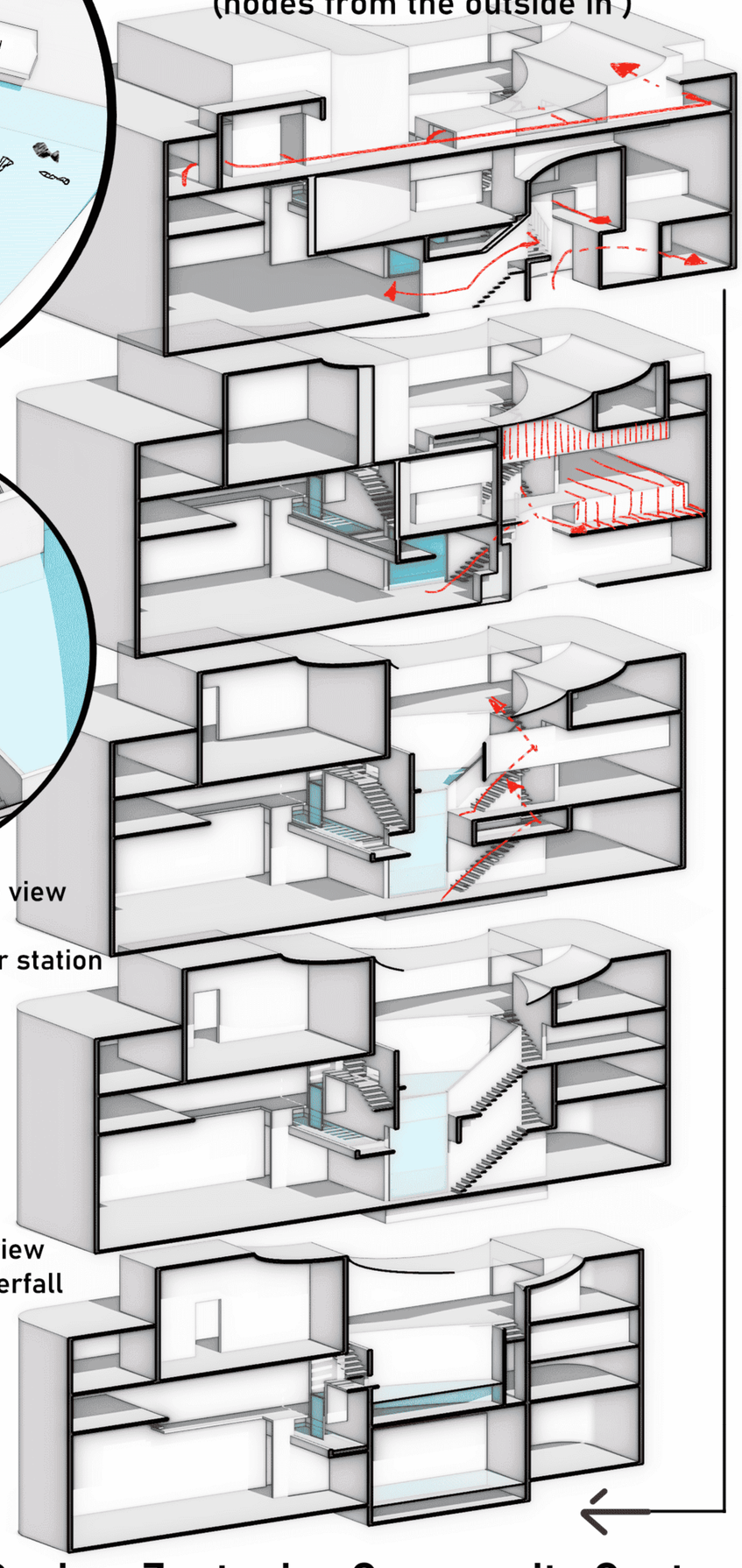



## Pool Waterfall

One of the small facades with openings facing the atrium, designed for small aquatic animals. A small landscape waterfall is formed on one side of the atrium and flows to the 1F pool; Another small waterfall is formed at the opening facing the inside of 2F, which provides water for the aquatic animal benches of the "Community Court".

## Forward section elevation

(nodes from the outside in )



Oblique view of the transfer station

Head-up view of the waterfall

Vertical Design: Zootopia- Community Center

## Social Reflection

In the actual design, it is impossible to design every function at all scales. So the existing facilities will inevitably lead to employment injustice and size discrimination among animals.

Small animals need less space and can easily use the "space scraps" that large animals cannot use. Therefore, small and medium-sized animals have a higher utilization rate and good accessibility in the design of buildings.

This is difficult to change by design because redundancy is often present.

This may lead to inequality for larger animals in true zootopia urban societies. Of course, each size has its advantages and disadvantages. But the meaning of the city lies in the high concentration of resources. It is a place where the value of mental labor is more prominent, and pays attention to efficiency in every sense.

Even smaller than small animals are insects. The chain of contempt has no end. And the large number of rodents will not allow their group to lose power.

Other: Polymer Clay Works 2017

## Vertical Design:

# Zootopia- Community Center

Perhaps in the zootopia urban society, some policies will be introduced, such as maintaining【the ratio of space designed for each type of animal in a unit plot to their own volume】within a certain range, to ensure that unscrupulous developers will not blindly add buildings and facilities that can only serve small animals in pursuit of profits.

If so, then the task book of this design should also include corresponding requirements.