



# LE-DANCE

Modular Dancing Station

Yaokun Wu

Pratt Institute BID  
Spring 2021  
Capstone Studio-05

Ignacio Urbina Polo

## Sedentary Lifestyles in Elderly

Physical activity levels **decrease** with age.

**28%** of adults 50+ are physically inactive, leading sedentary lifestyles and health diseases.

Physical exercises play a significant role in healthy aging, strengthening physical and mental conditions.



## Elderly Exercising in China (Square Dancing)



■ **Square Dance**

■ Taiji (Kong fu)

■ Pingpong

■ Strolling



**45% of elderly** do square dancing in china

**100 million** square dancers

**(\$15 billion) market.**





Mrs. Juan

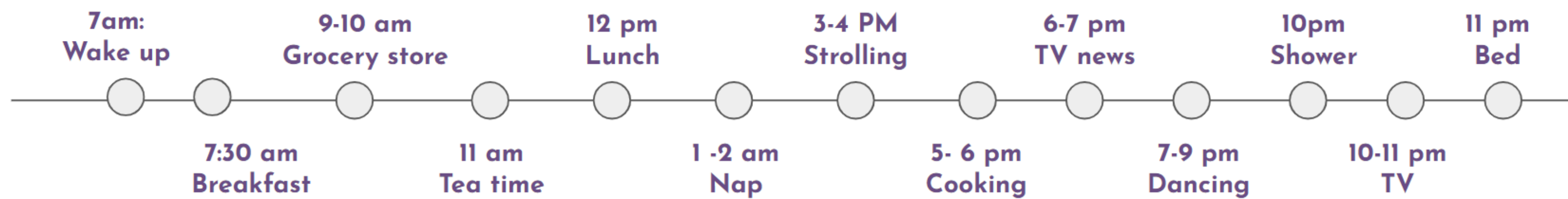
## Interviewing/ Square dancing

“

We dance at **night time** everyday.

”

To prevent disturbing neighbours, we dance at **large open space** which is sometimes **far away** from the residential areas





# The lack of places for dancing

Due to the massive urbanization and high population density, there is **a huge lack of places for elderly to exercise** in China.



Space Conflicts



# Unbalanced Urban planning

**“Xiaoqu”** is a residential complex with a relatively independent living environment in a certain area of the city, equipped with public facilities. There are **300,000** “xiaoqu” in China;



In Beijing, the ratio of the number of Residential areas to squares: 30:1







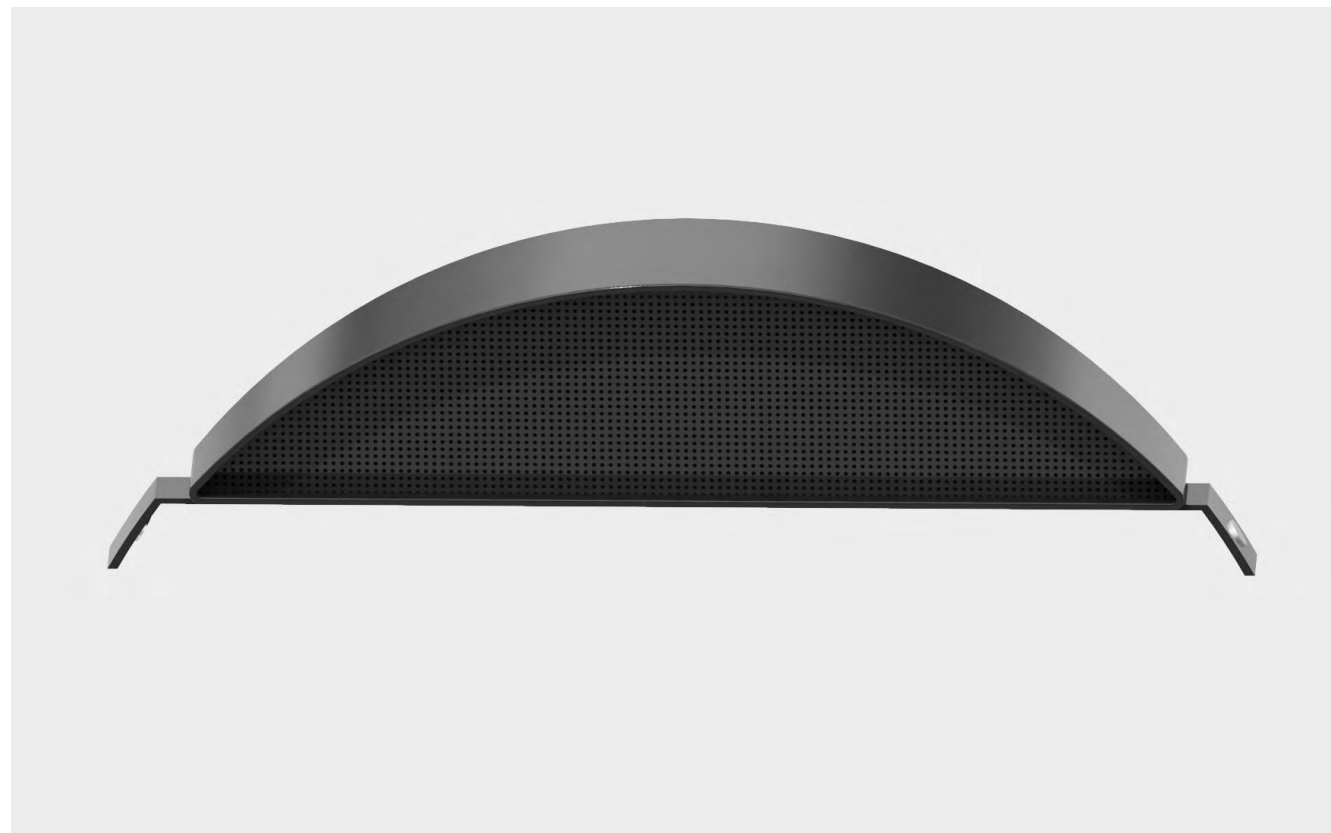


## LE-DANCE

Modular Dancing Station

A modular dancing station that offer a clear directional sound environment for elderly to dance in public without disturbing neighbours.

## Directional Speaker



Provide a clear sounding without disturbing others.

## Modular System



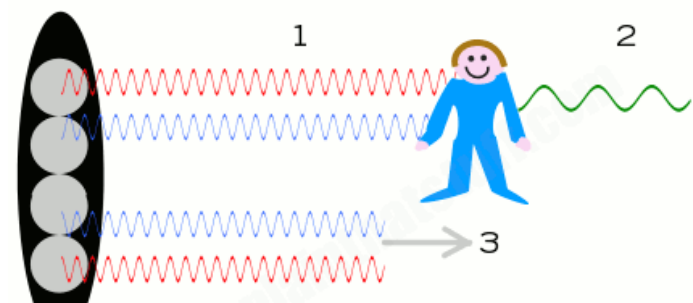
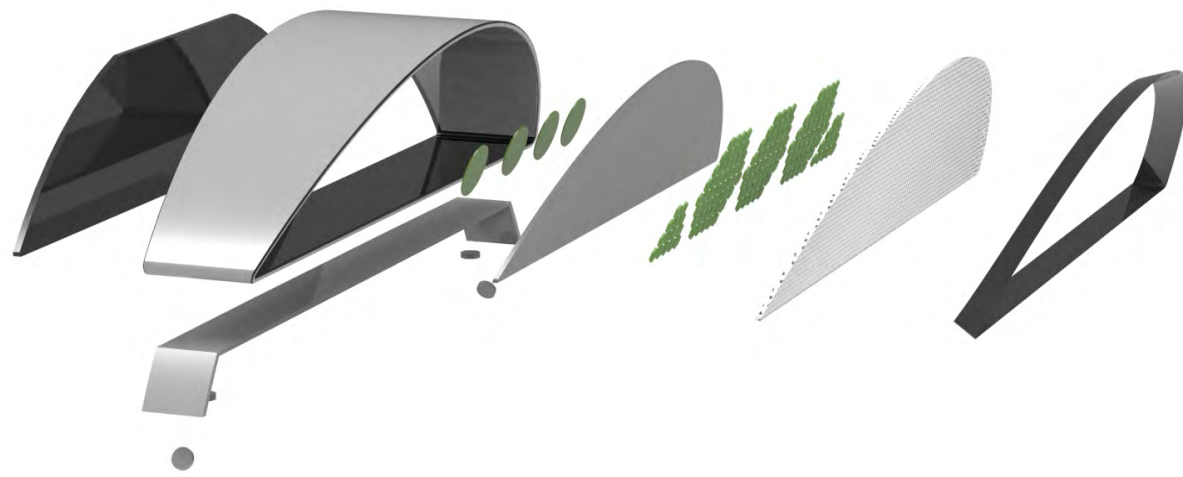
Make dancing places acesible in residential areas.

## Kiosk



Provide user friendly experience and emergency protection.





## Directional Speaker

Ultrasonic technology

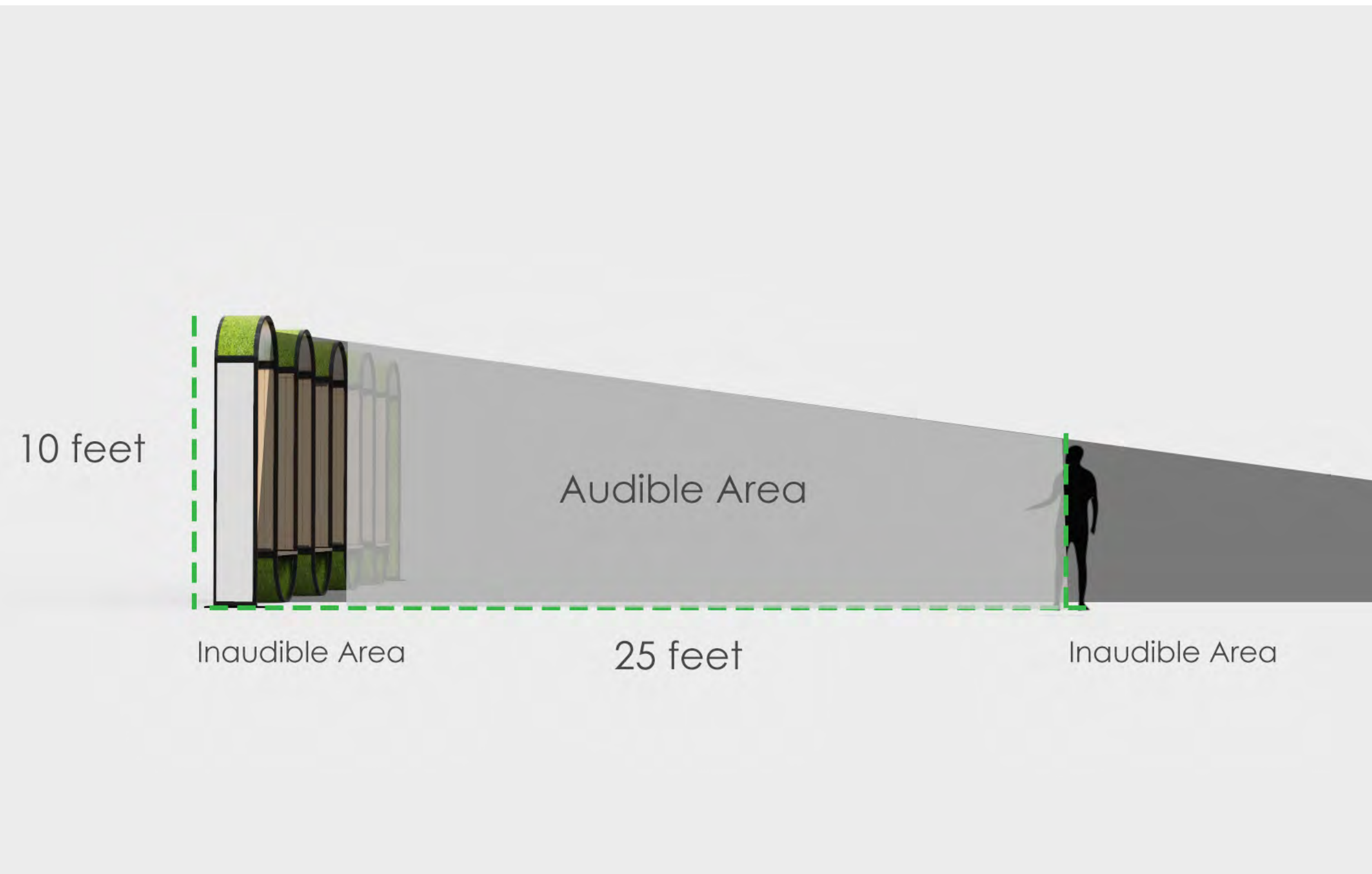
By using an array of electrical devices called piezo-electric transducers, to generate two ultrasound waves that are too high pitched to ear.

Directional speakers produces ultrasonic waves, allowing **only people standing in front of the speakers hear the sound**, while traditional speaker sound waves transmit into every directions..





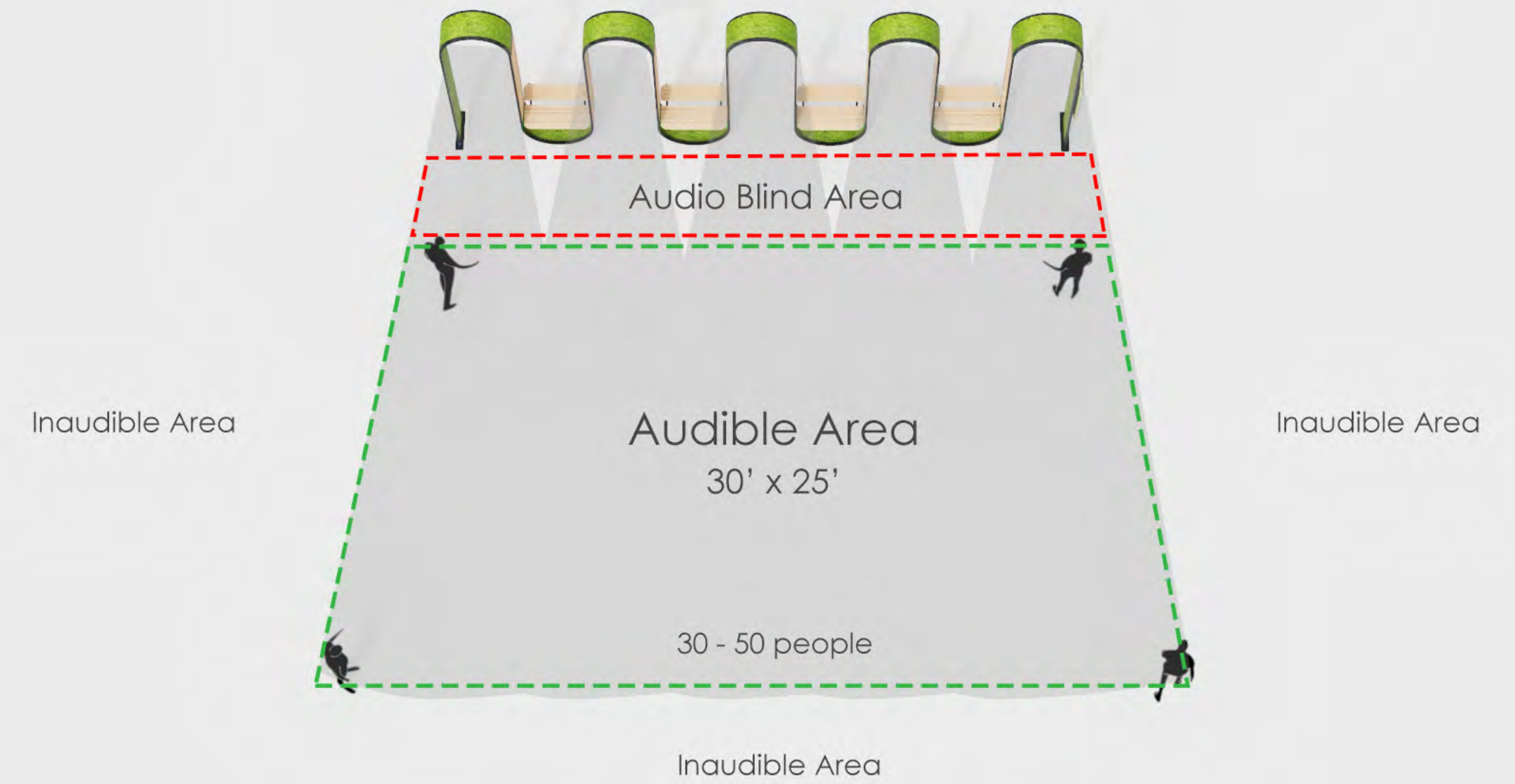
## Sound travels 25 feet



The speaker is installed on 10 feet high.

The furthest distance from the speaker to the inside of audible area is 25 feet.

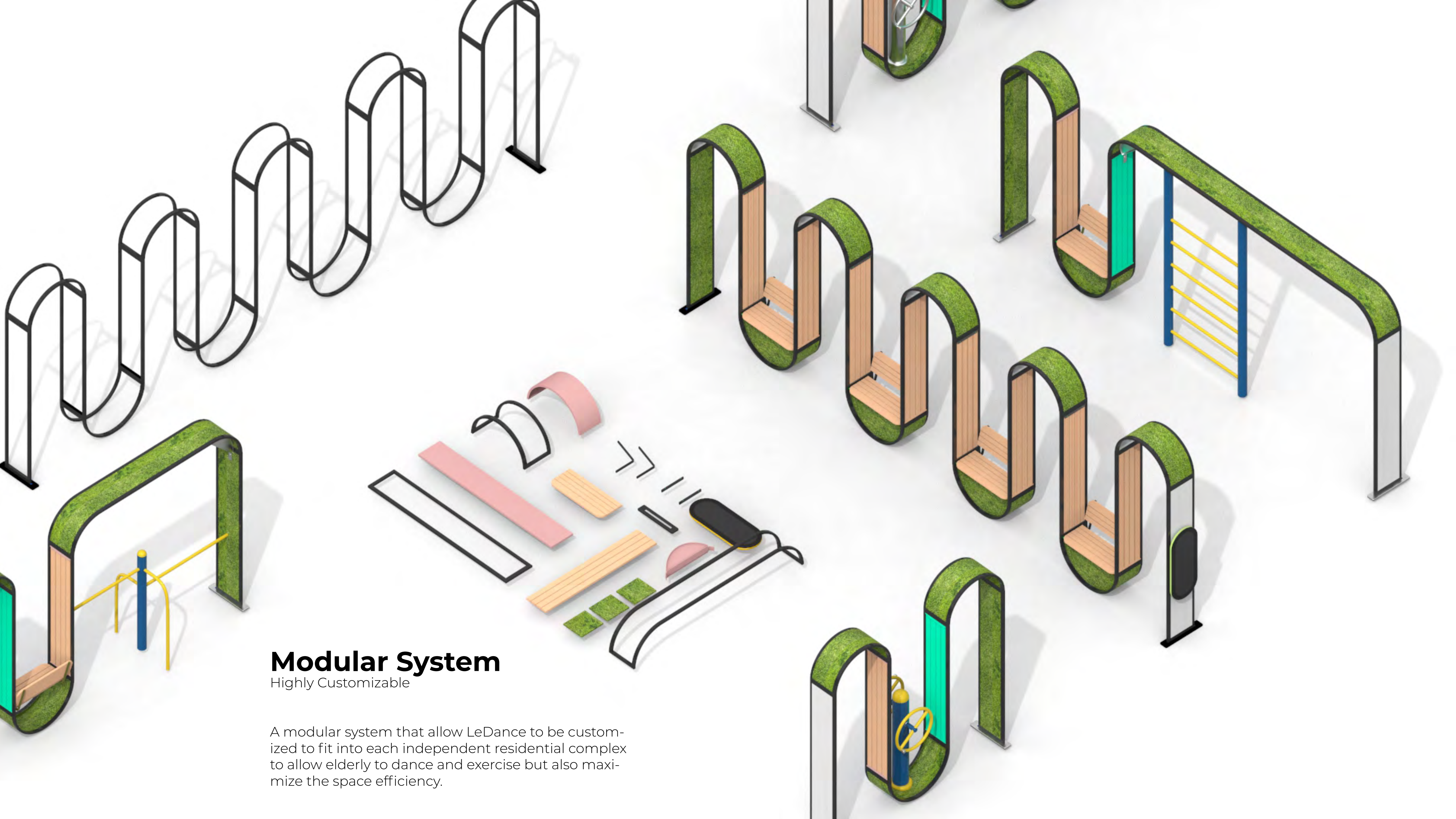
## 30-50 People



Every five speakers cover areas around 25 x 30 feet square.

Allow 30 - 50 people to dance.



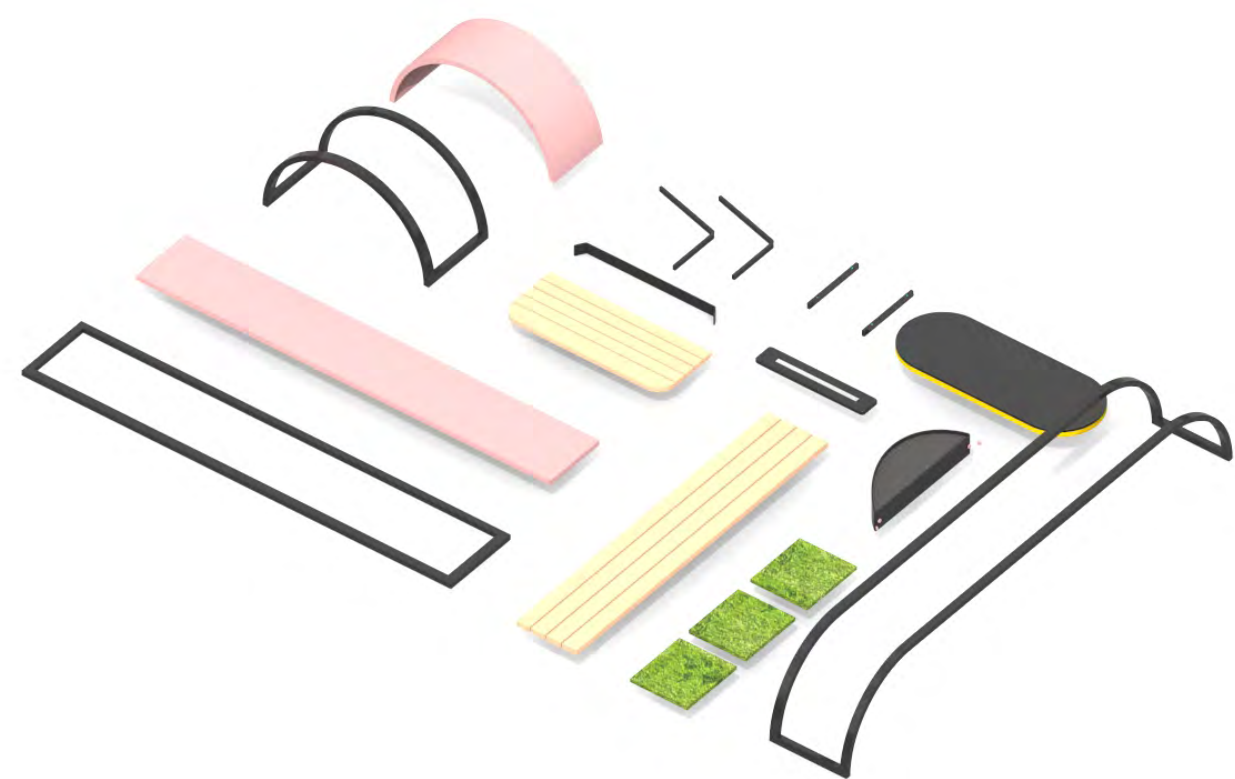


# Modular System

Highly Customizable

A modular system that allow LeDance to be customized to fit into each independent residential complex to allow elderly to dance and exercise but also maximize the space efficiency.

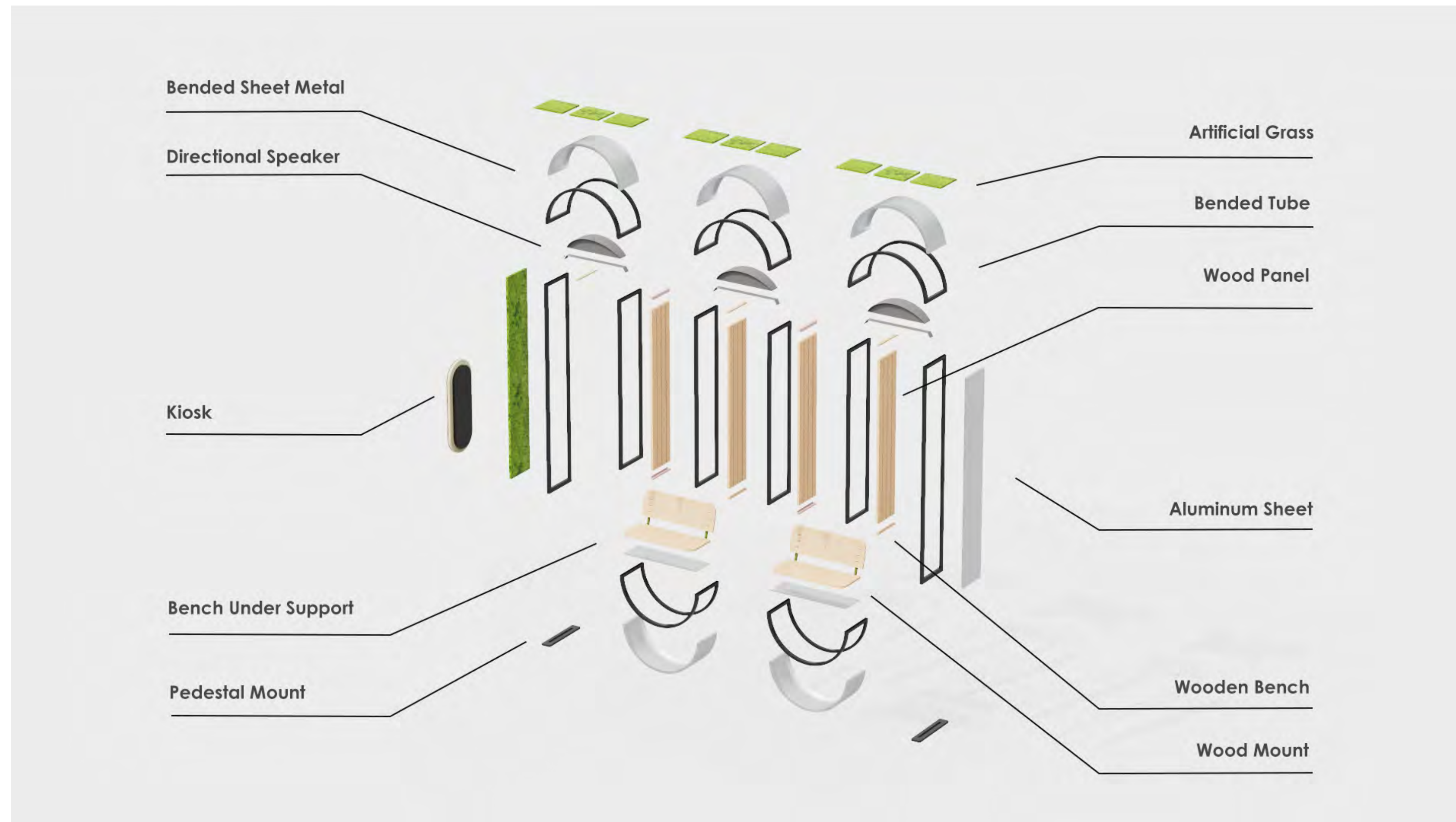




## Components

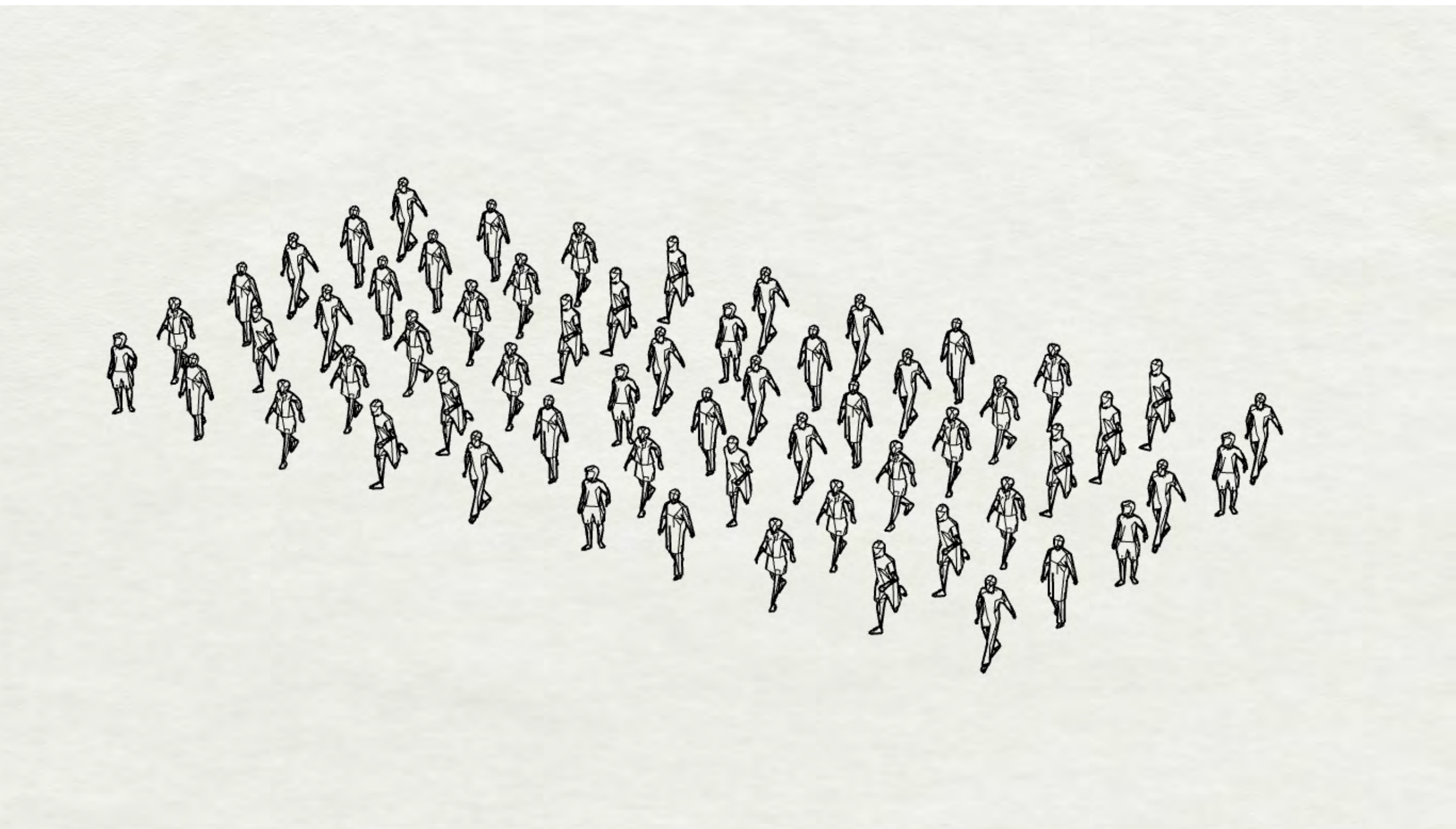
Structure/ Assembly

LeDance uses metal tube to construct the frameworks for the modular system. Directional speakers, artificial grass, aluminium panels, wooden panels, kiosk, exercising facilities, etc.





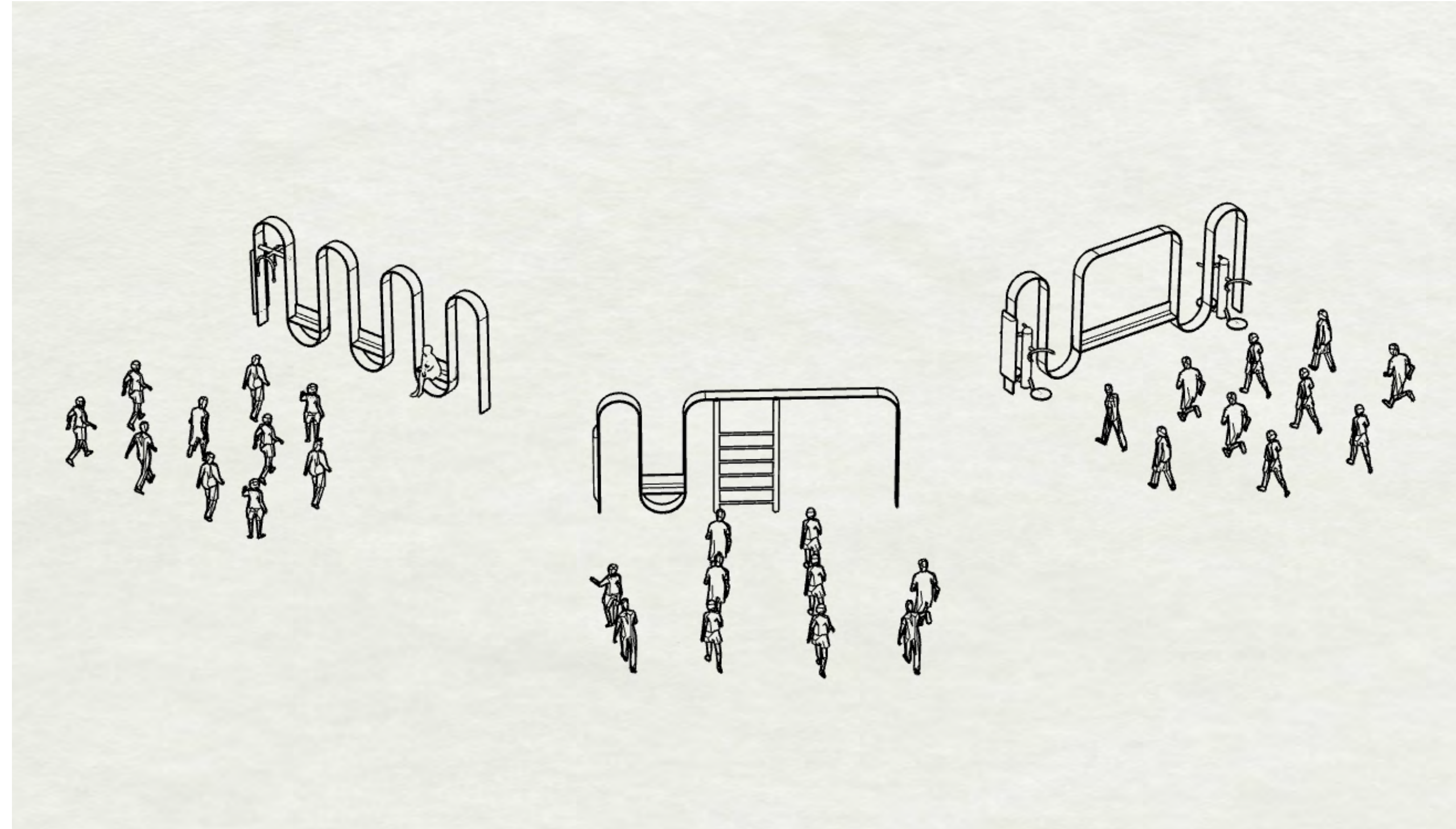
## Traditional Square Dance



Big crowds: 100 people

Large open space: (Square, Plaza, etc)

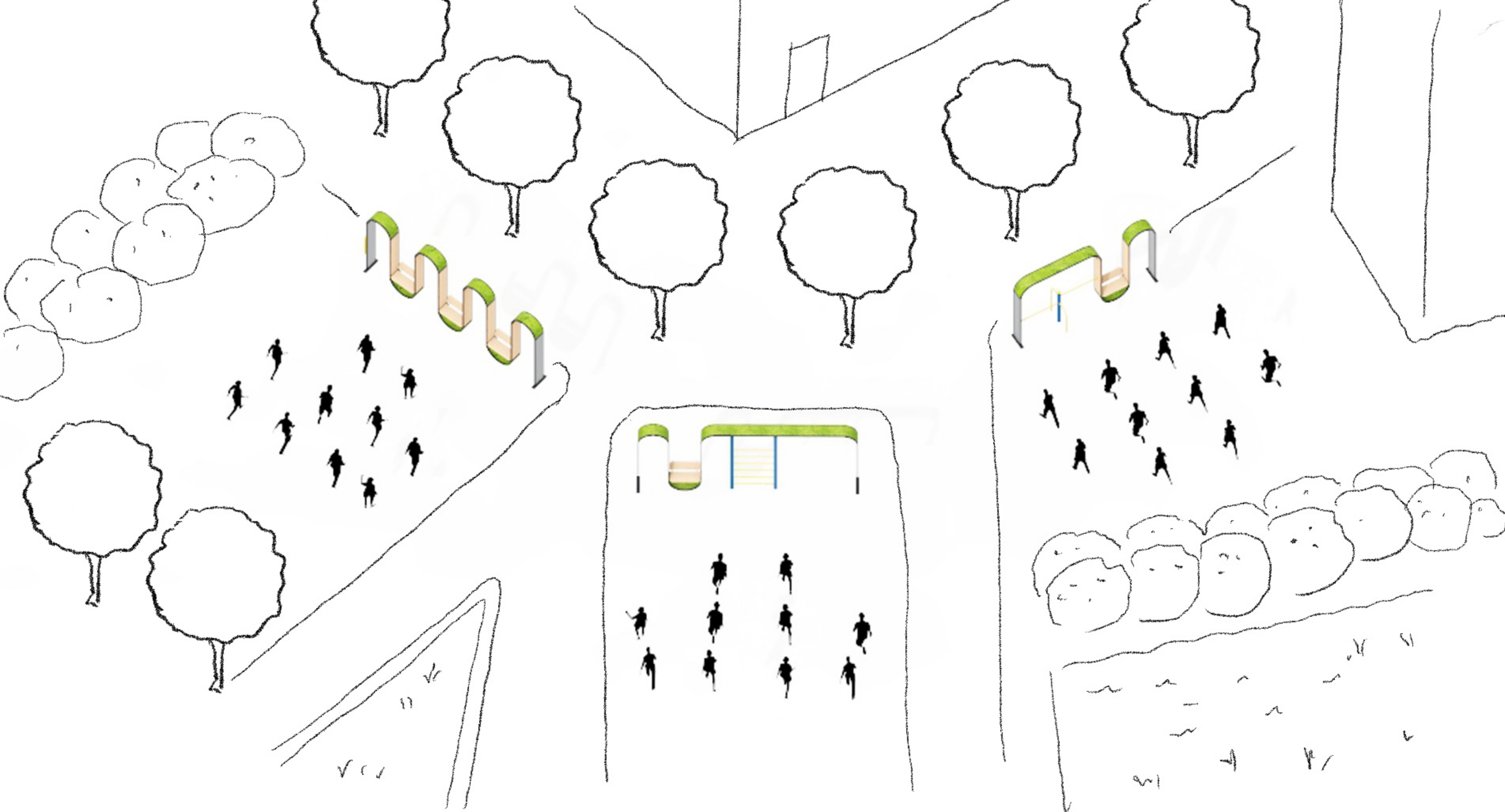
## LeDance



Small crowds: 30 people x 3

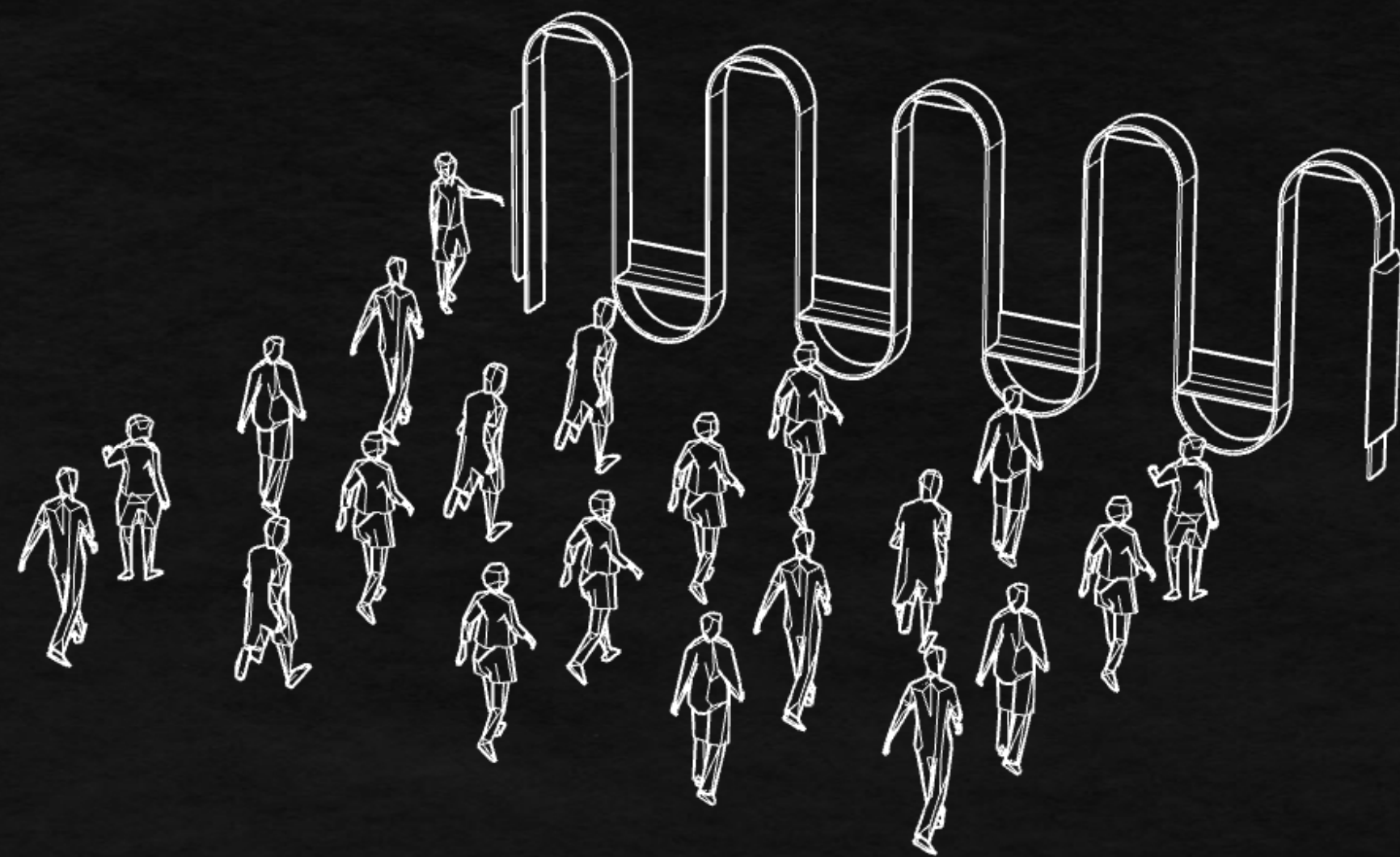
Small spaces: (residential areas)





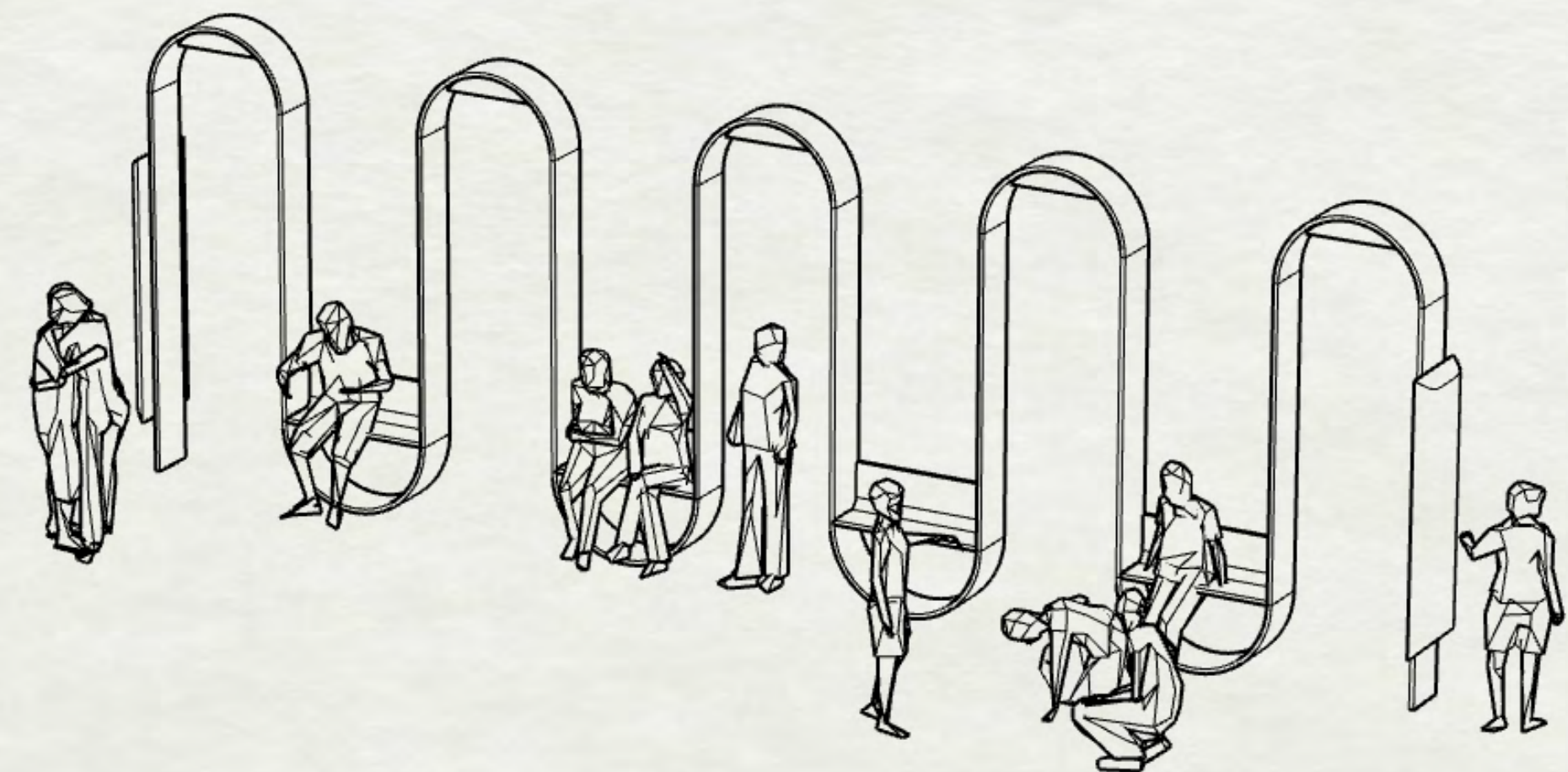


## Night Time



Square dancing

## Day Time

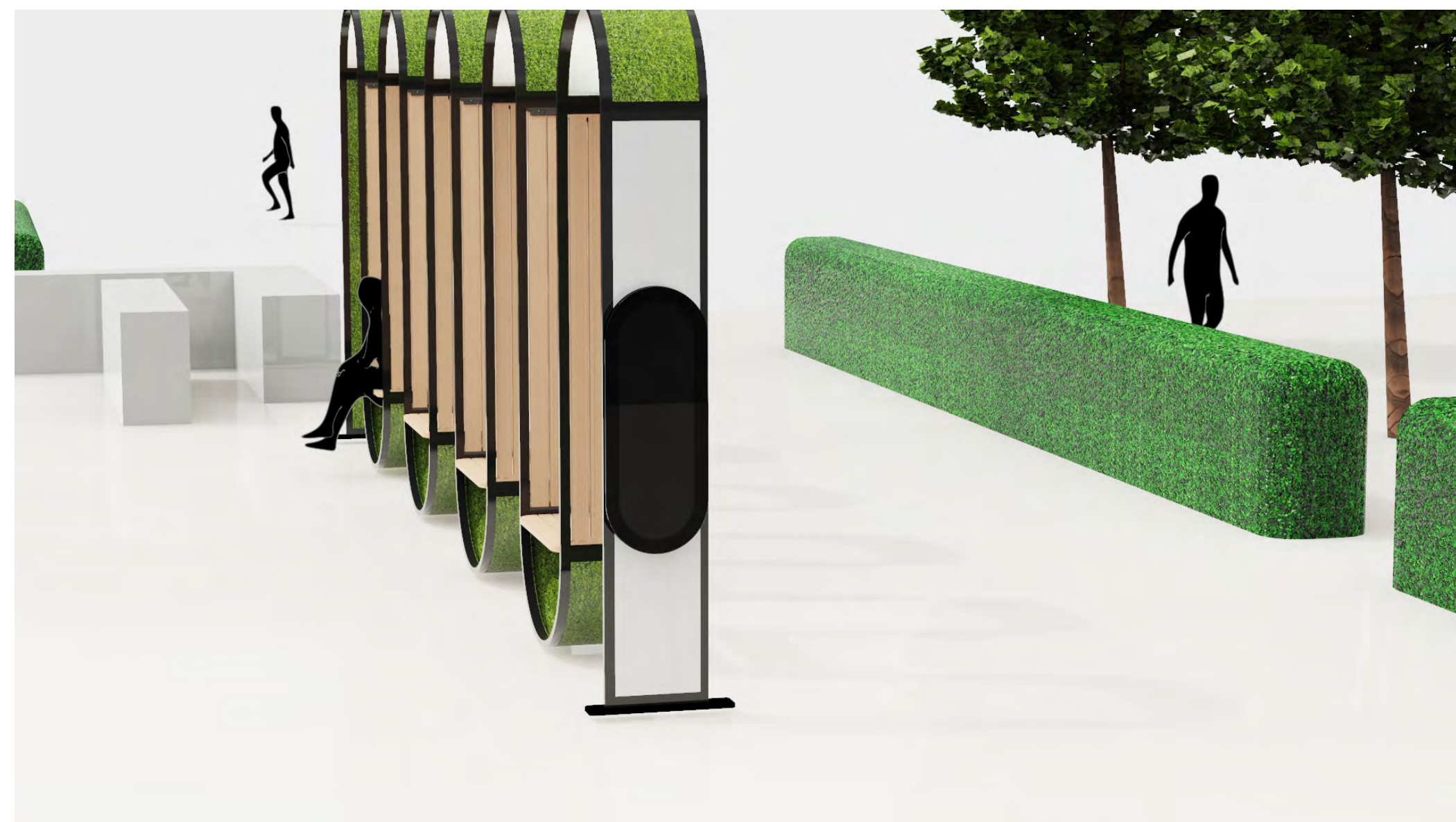


Resting and Exercising Areas



# Public Exercising Facilities

Day time



During day time when elderly are not actively square dancing. LeDance station can be served as resting areas for the community.



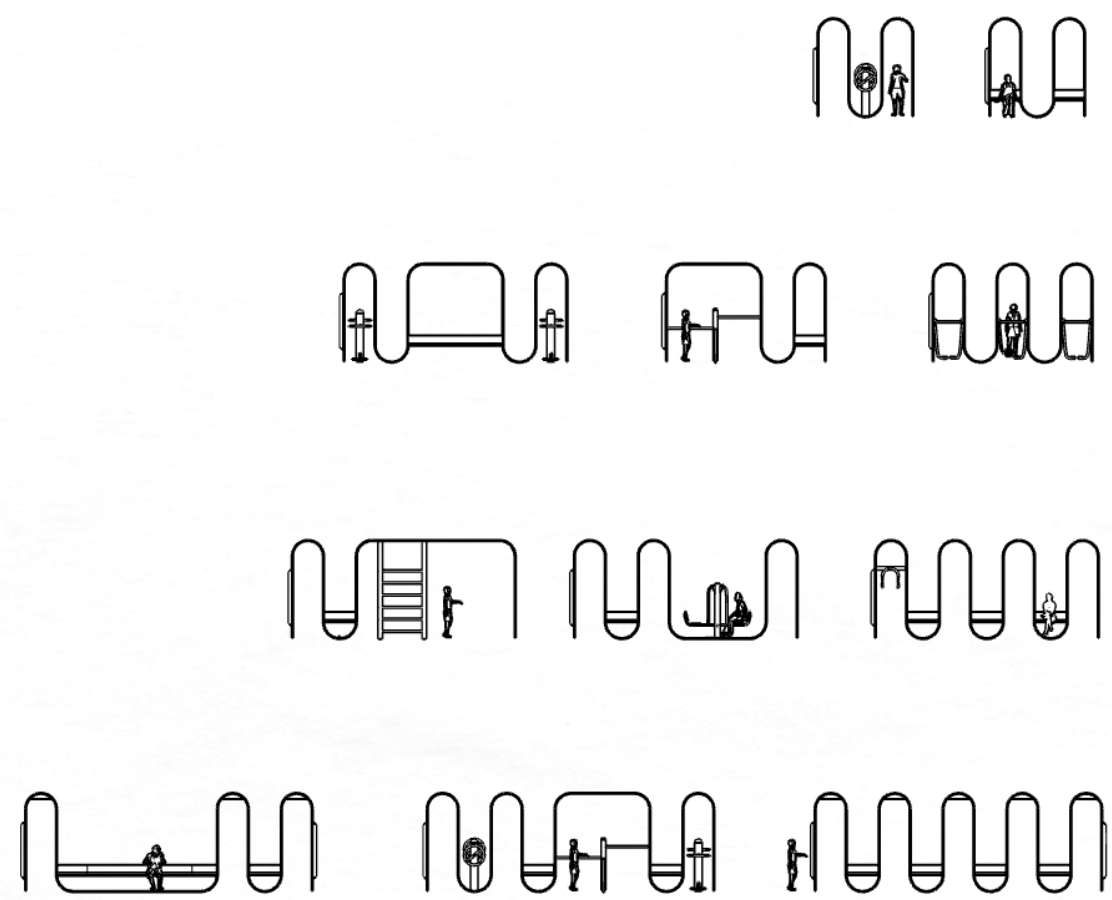


## Public Exercising Facilities

LeDance combines the dancing station to existing exercising facilities to maximize the space usage efficiency in the residential areas. Less space consuming.

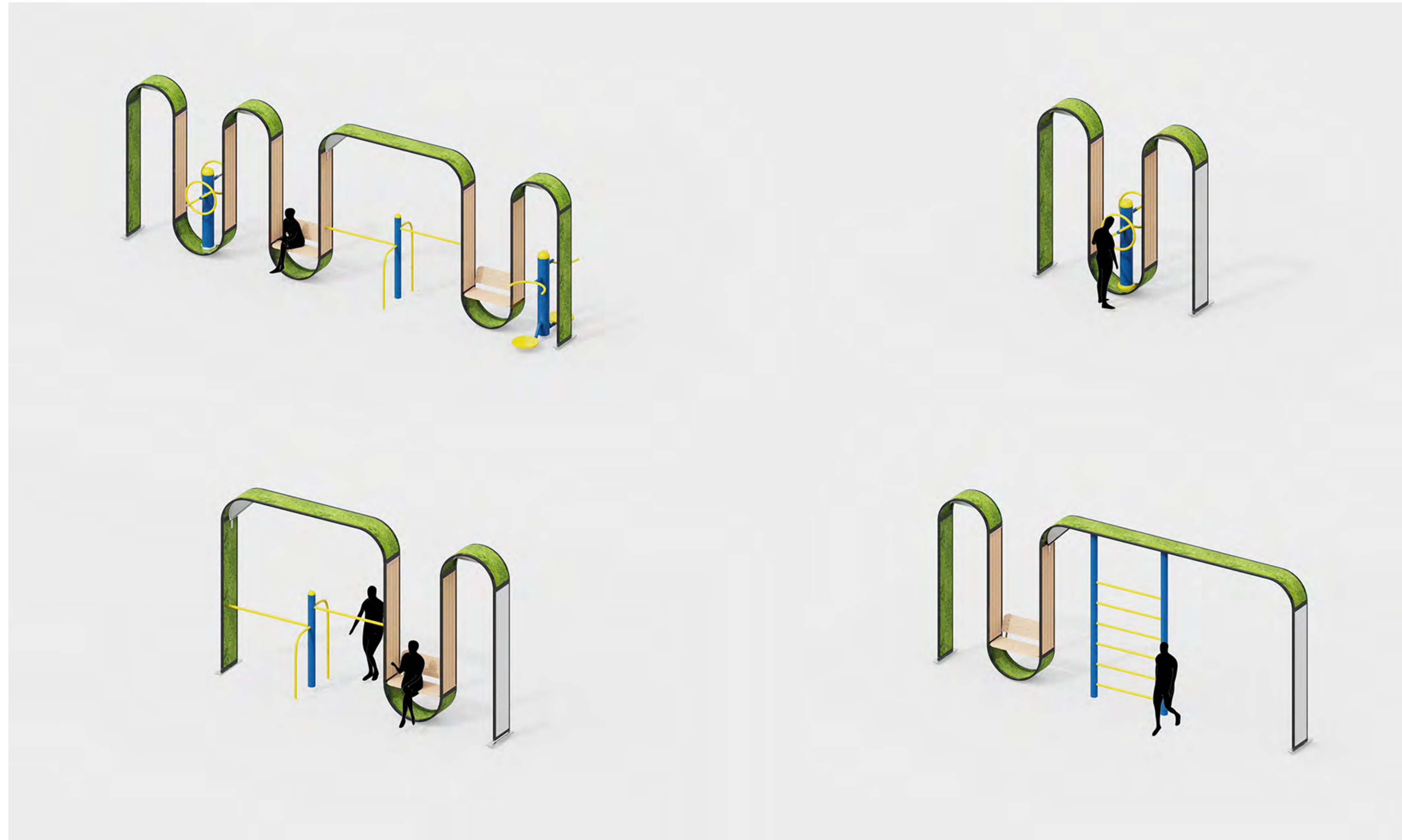






## Configuration

A modular system that allow LeDance to be customized to fit into each independent residential complex to allow elderly to dance and exercise and ensure the high space efficiency.





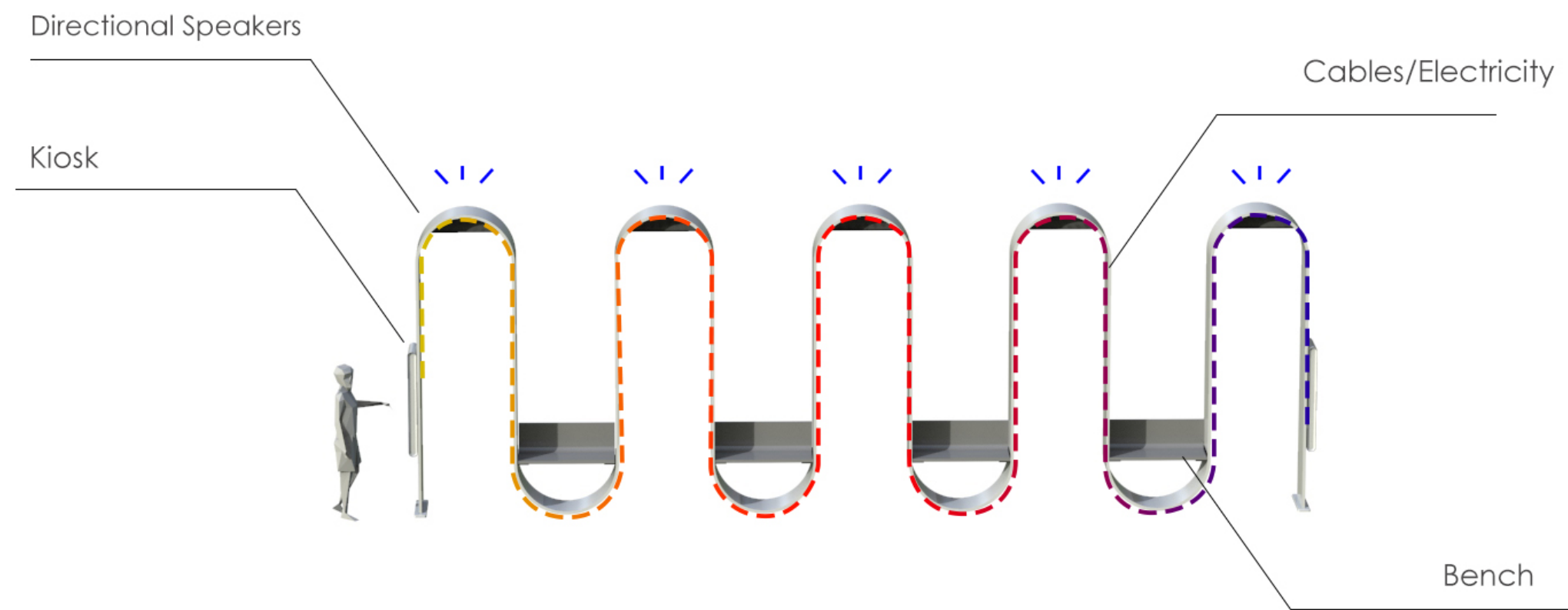


## Kiosk

Audio control center/ Emergency Call

Provide user friendly experience for elderly to select and play their favourite musics when dancing and provide emergency protection to elderly.





## Connection

### Directional Speakers

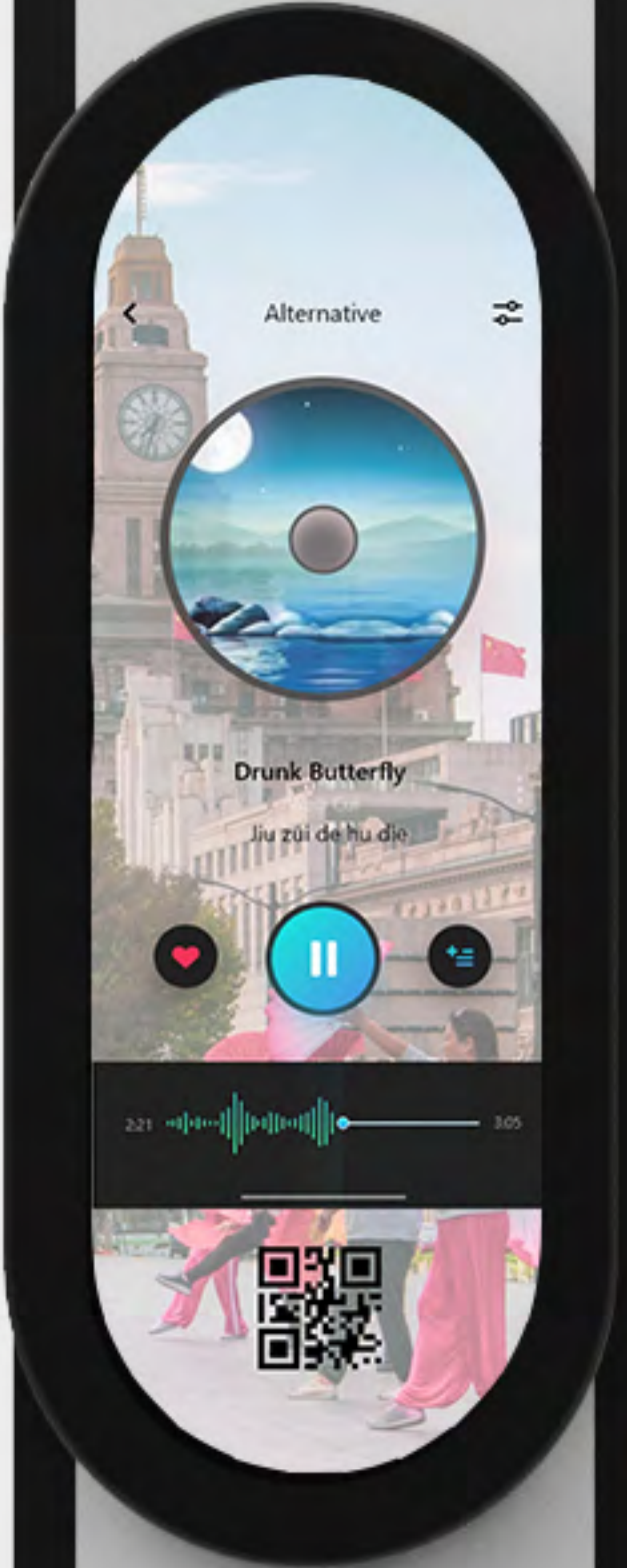
Kiosk is connected with directional speakers through cables which are built inside of the metal frameworks. It enables people to easily connect their mobile device to the kiosk and the speakers.





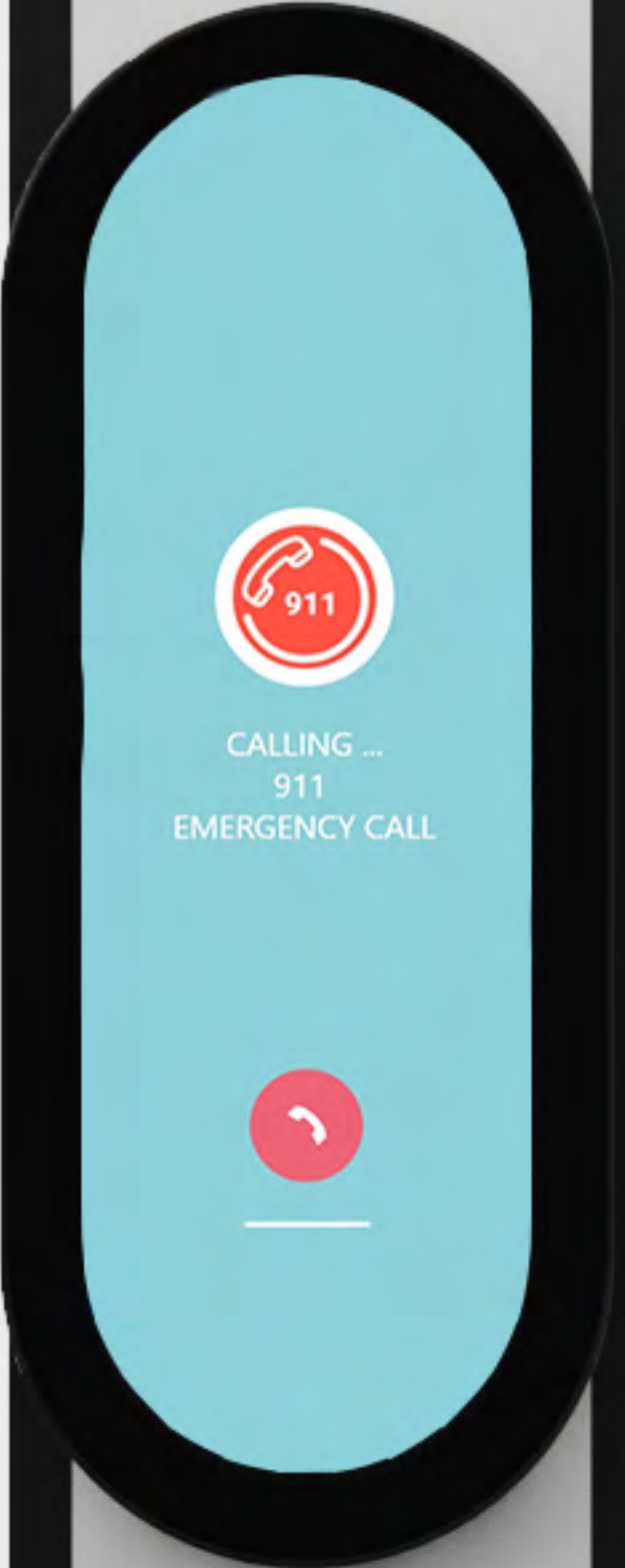


Making researvation



Selecting Music for dancing

QR scanning to connect  
phone and kiosk



Emergency Call

Health Aid



## Mission

With the help of Le-Dance, elderly would no more need to travel far away, or no need to worry about disturbing neighbours and no more space conflicts with others. Therefore they can have a healthy and active and happy lifestyles.





# Thank you

Yaokun Wu

Pratt Institute BID  
Spring 2021  
Capstone Studio-05

Ignacio Urbina Polo