

Off Campus

Living labs for sustainable neighbourhoods

M-BOX

Elderly-centered community recycling waste system Design

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Shaping the Community of the Future through a Sustainable Campus

Title Description

OFF CAMPUS Xianlin: Elderly-centered community recycling waste system Design

Xianlin Community of the Qixia District of Nanjing is the home to 74,272 residents. Among the community are elderly, children, students, teachers and foreigners. The town is rich in Educational Resources with almost 12 universities in its Xianlin University town, 2 Primary Schools, and 5 Kindergarten. However, survey shows that there is inadequate suitable and inclusive public spaces and activities for the elderly. This restricts older people's participation in community life, contributing to social isolation, and leading to unhealthy, sedentary lifestyles.

In addition, the neighborhood is facing concerns with the elderly having a habit of picking-up rubbish such as discarded express boxes and cardboards while placing them at fire escape zones in the building. Although collecting recyclable boxes and cardboards can be seen as a sustainable activity, these over-hoarding stuff poses as a risk in case of any emergency or fire in the building.

Thus, to maximize potential opportunities on this two (2) challenges, the group conducted an interview with local elderly residents on their desired projects. The group also included their own expert opinions from a multidisciplinary point of view including environmental design, communication and awareness to wellness, and engineering. Thus, coming-up with the following proposition:

1. **Resource Integration** for each member of the community to participate in the cause.
 - a. Jinling Primary School – to engage the community in a wide range activities, including (but not limited to) art, storytelling, music, dance, and play. While also utilizing spare areas during free time to maximize the space.
 - b. Nanjing University – to encourage environmental education through student volunteerism anchored not limited to school learning but across others by amplifying one's ability to improve the environment.
2. Initiating the modification of the current centralised recycling waste disposal into a **community-based local recycling system** by forming a designated space in the off-campus for the storage and exchange of recyclable items (i.e old books, old furniture, old clothes, paper boxes)
3. Partnering with students and other volunteers to **develop recyclable items into other products** such as: Community Art-Deco, Stray cat Shelter, outdoor public furniture and others. Doing so, **expands the opportunity to Reuse the composition of recyclable waste** from:
 - a. Cardboard→Wood fibres→Growing mushroom →Mushroom Box
 - b. Plastic bottles→Plastic pellets→3D Printing

THE DESIGN BRIEF AT A GLANCE

GROUP: n. 1

TOPIC: social connection

Case Study

INSIGHTS

EC POLICIES AND INITIATIVES

Insights that concern: Policies / Frameworks / Initiatives of the EC

1. Lock downs & Various Restrictions
2. China's 14th Five-Year Plan for Healthy Aging

DATA AND LITERATURE

Insights that concern: Data / Knowledge / Theories / Studies / Reports

Theories : Social Integration
Data: 71.5% of respondents said they feel lonely.

EXPERTS

Insights that concern: Opinions / Visions / Concerns / Experiences

More accompany elders while having more activity would be key

CASE STUDIES

Insights that concern: Different inspirations

Elderly people spiritual health activity in community managed by government.

DESIGN OBJECTIVES

To Improve spiritual health and well-being for olde people.

Reconnect the link between the elderly and society

Provide elders with more opportunities to improve their self-confidence & more community companionship and interaction

To empower the interaction between the elderly and the community and to involve the elderly into the project

DESIGN OPPORTUNITIES

HOW MIGHT WE....?

invent campus-communities corporation system?

WHO IS OUR TARGET?

Elderly people

WHAT IMPACT TO GENERATE?

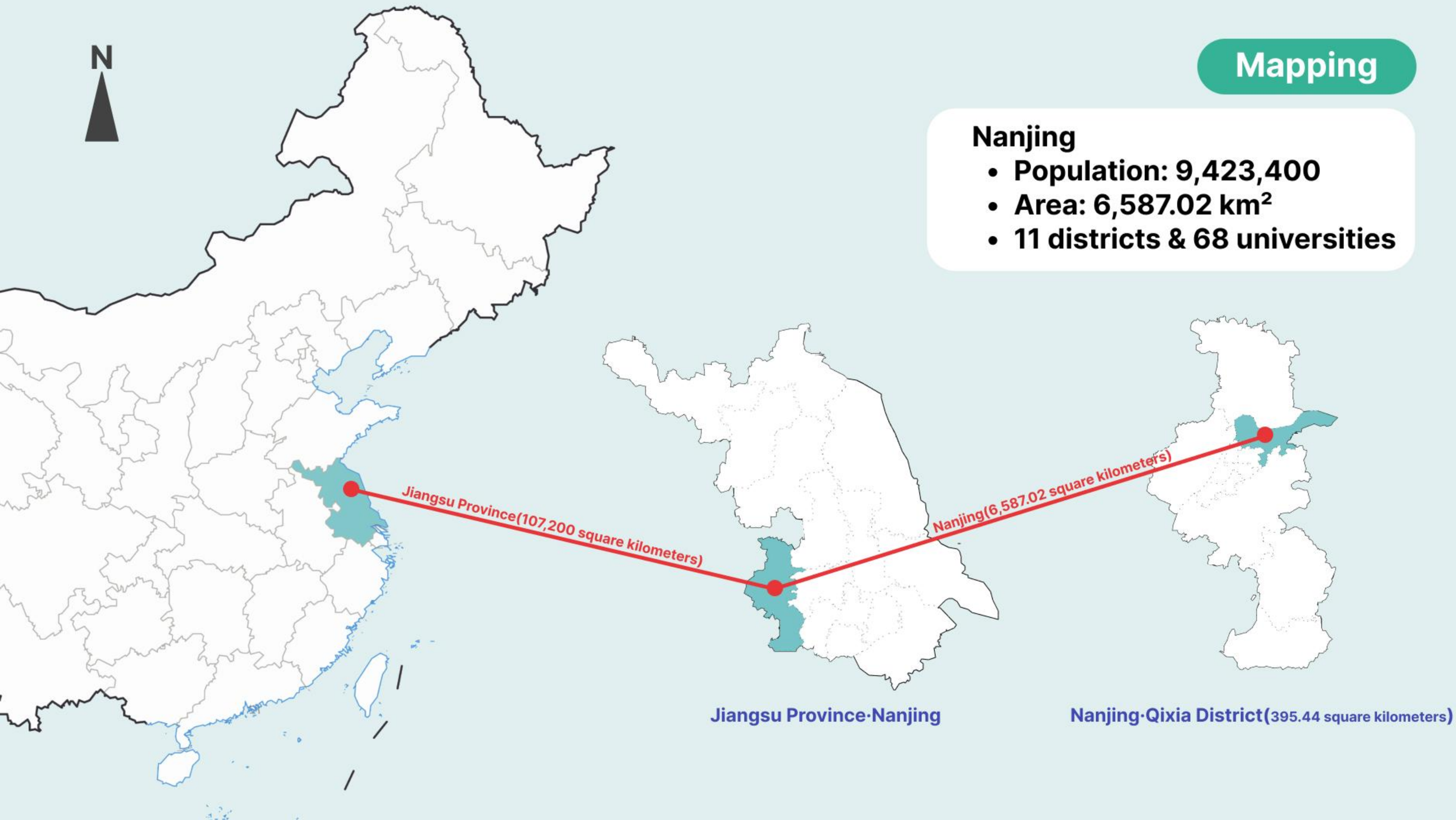
to reduces loneliness and stress in the elderly people - improving quality of life

N

Mapping

Nanjing

- Population: 9,423,400
- Area: 6,587.02 km²
- 11 districts & 68 universities



N

0 5KM

Qixia District
395.44 square kilometers

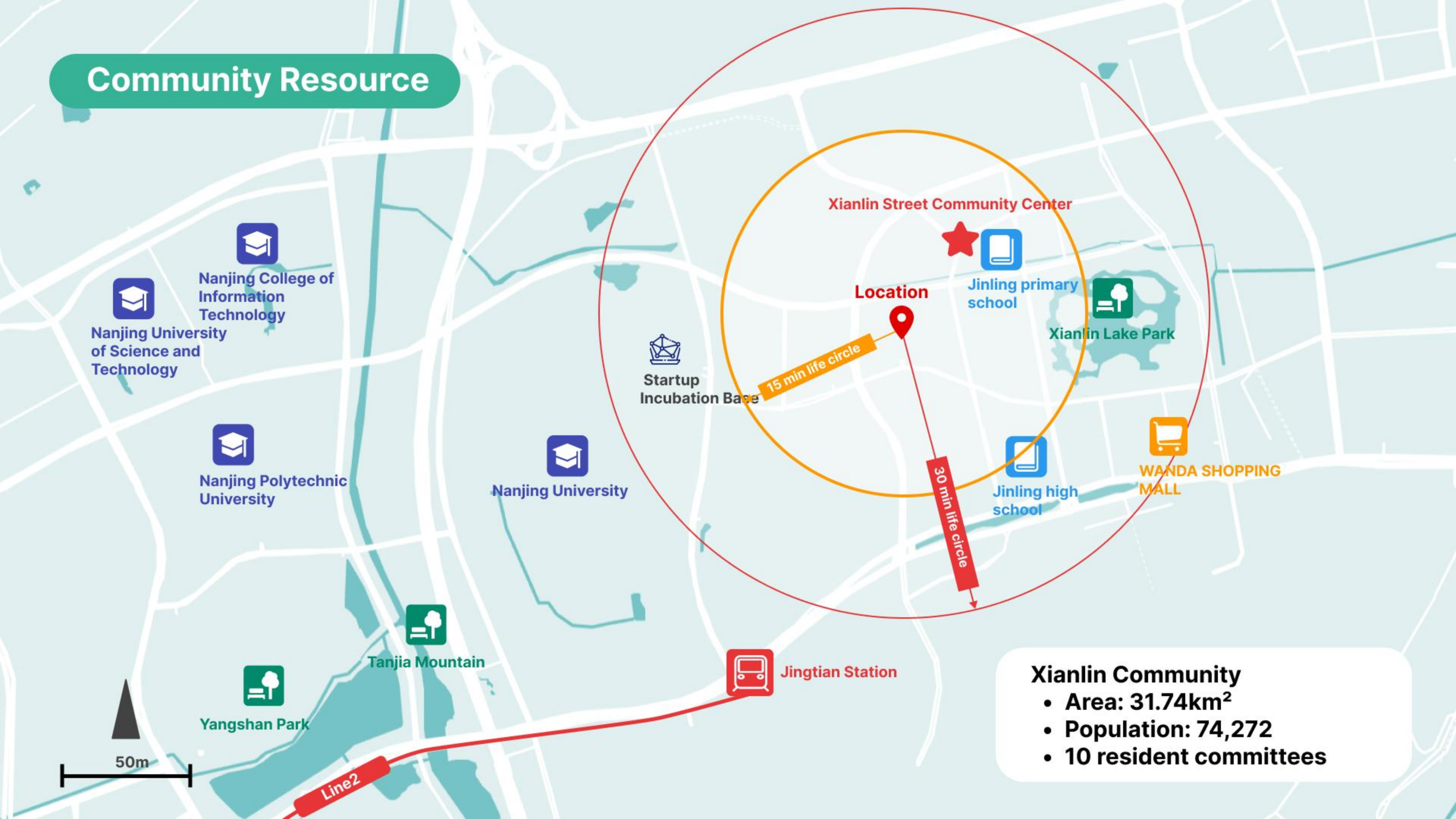

Nanjing Municipal Government

Qixia District

- population: 997,400
- Area: 395.44 km²

Yangtze River

Community Resource



Xianlin Community

- Area: 31.74km²
- Population: 74,272
- 10 resident committees

Xianlin Community

• Neighborhood

- Group: Elderly(12%), Children, Students, Teachers, Foreigners
- Facilities: Park, Hospital, Shopping Mall, Startup Incubation Base

• Opportunities

• Rich Educational Resources

Xianlin University Town(12 universities with 160,000 students and 335 Students Associations), 2 Primary School, 5 Kindergarten

• Active Volunteers

56+ volunteer teams with 10,000+ volunteers

• Responsible Xianlin Party Group Service Centre

Activities organized by the service centre for the elderly, children, women and students: Medical Care, Artcrafts making, Environmental Promotion, Parent-child Education, Festive Celebrations

• Community Foundation

Yijiaqin Associate formed by Nanjing University, companies and government in the community co-financ 6.5 million yuan for the community building

• Weakness

- No enough public space and activities for the elderly
- Nonlocal: No interaction among the elderly



Problem



Hoarding Disorder Behaviour

The elderly in the community like to **hoard old things and even pick up recycle rubbish** such as discarded delivery boxes and sell these recycle rubbish to the recycle bin. It is a sustainable effort, in contrast to the wasteful behavior of some young people.

However, these hoarding always **annoys the neighbourhood** because it may attract flying insects. Also, the fire escape in the building is often filled with cardboard that may cause potential hazard.

Possible Explanations

Through paper research, these four reasons may lead to the elderly's hoarding phenomenon.

- **Frugal Lifestyle**

China's elderly have experienced hard times and developed a frugal lifestyle.

- **Loneliness**

No enough suitable jobs for the elderly in big city and they just want to find something to pass time and make money.

- **Disease**

Hoarding is a a mental illness that can be a precursor to Alzheimer's disease in some elderly people.

- **Live in Poverty**

A very small number of elderly people are really living in poverty and need to support their living expense.

[1] Khan, S. (2017). Diogenes syndrome: a special manifestation of hoarding disorder.

[2] Kaplan,D.,Berkman,B(2016).The Oxford Handbook of Social Work in Health and Aging. Oxford University Press.

Interview Record

Attitude interview about garbage collection.

LIU

52(Age)

SAY

- Usually collection bulcket from trash can.
- Collecting bottles gives me something to do.

DO

- Collect bottles and put them at home.
- Always go morning and night.
- Has a bottle pocket.



THINK

- Picking up litter can pass the time.
- Can change money.

- Collecting bottles makes she happy.

FELL

ZHANG

62(Age)

SAY

- I often collect garbage in the community.

DO

- They store the boards in the stairwell.
- A collection of waste pulled by electric vehicles.



THINK

- Go green and make money.
- Will be useful.

- Happy but worried that tomorrow can not collect.
- Afraid of being abandoned by their children.

FELL

Journey Map

A track record of garbage collection.



ZHANG

62(Age)

EMOTION



TOUCH
POINT

OPPORT
UNITY

Before garbage collection

When collecting garbage

Focus

After collecting garbage



- Trash can

- Garbage(plastic\bulcket...)
- Pocket
- Smell awful

- Garbage store
- Garbage use

- Easier to find trash

- Garbage Sorting publicity
- Avoid bodily injury

- Reuse the waste collected(activities)
- Provide more secure storage location



Garbage Disposal

Garbage disposal process in Xianlin community

The government is promoting garbage sorting

- Promotional activities, 100+Interviews, Brochures,Gamification
- Volunteers supervise
- Education: Daily morning classes to educate middle school children on waste separation
- Points Redemption



Nanjing University



Founded in 1902, Nanjing University is one of the oldest and most prestigious institutions of higher learning in China.

Community Service

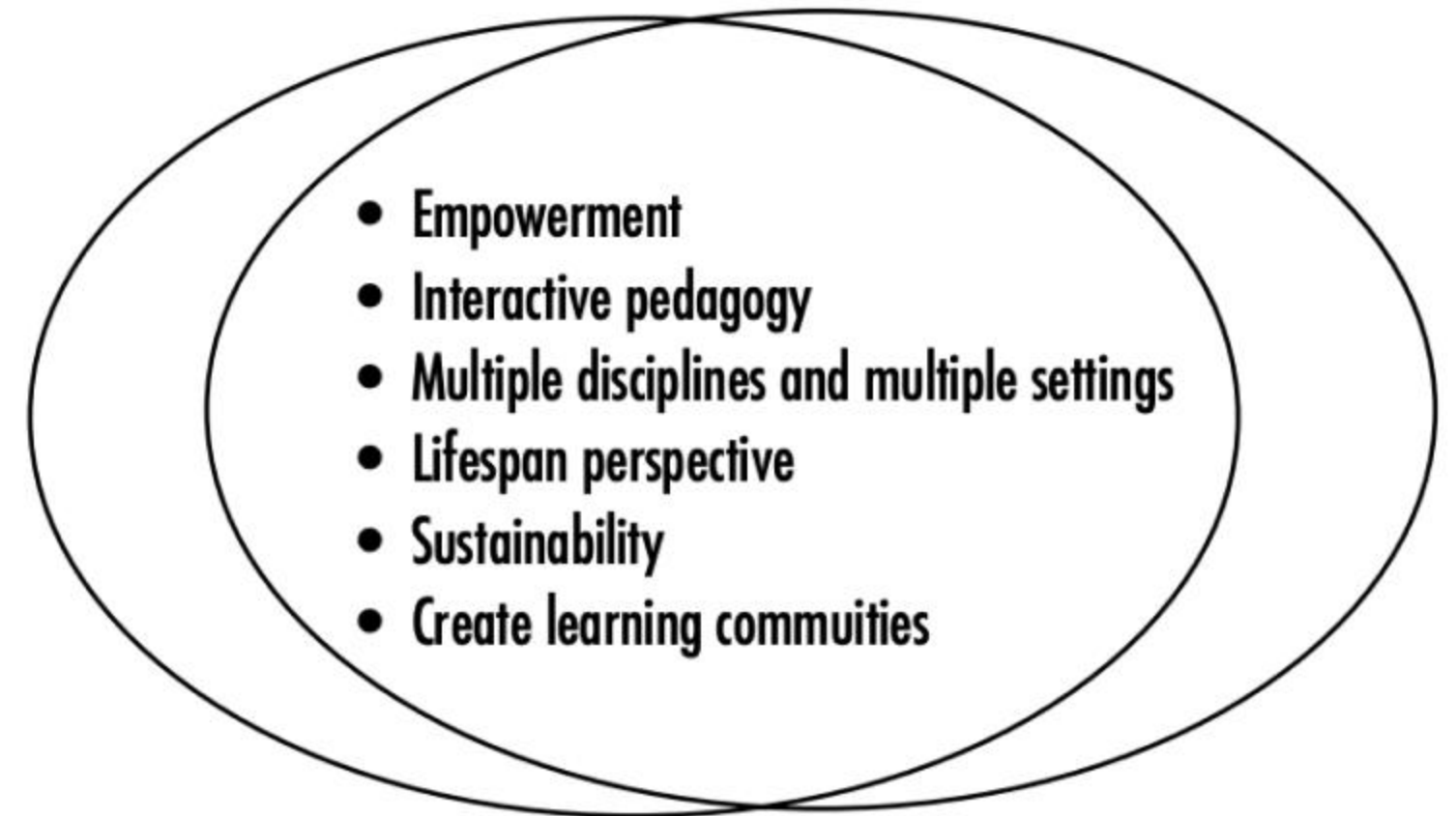
- Environmental conservation around the community
- Formation of the "Social University" association and "Yijiaqin" Foundation with the community

Resources & Activities

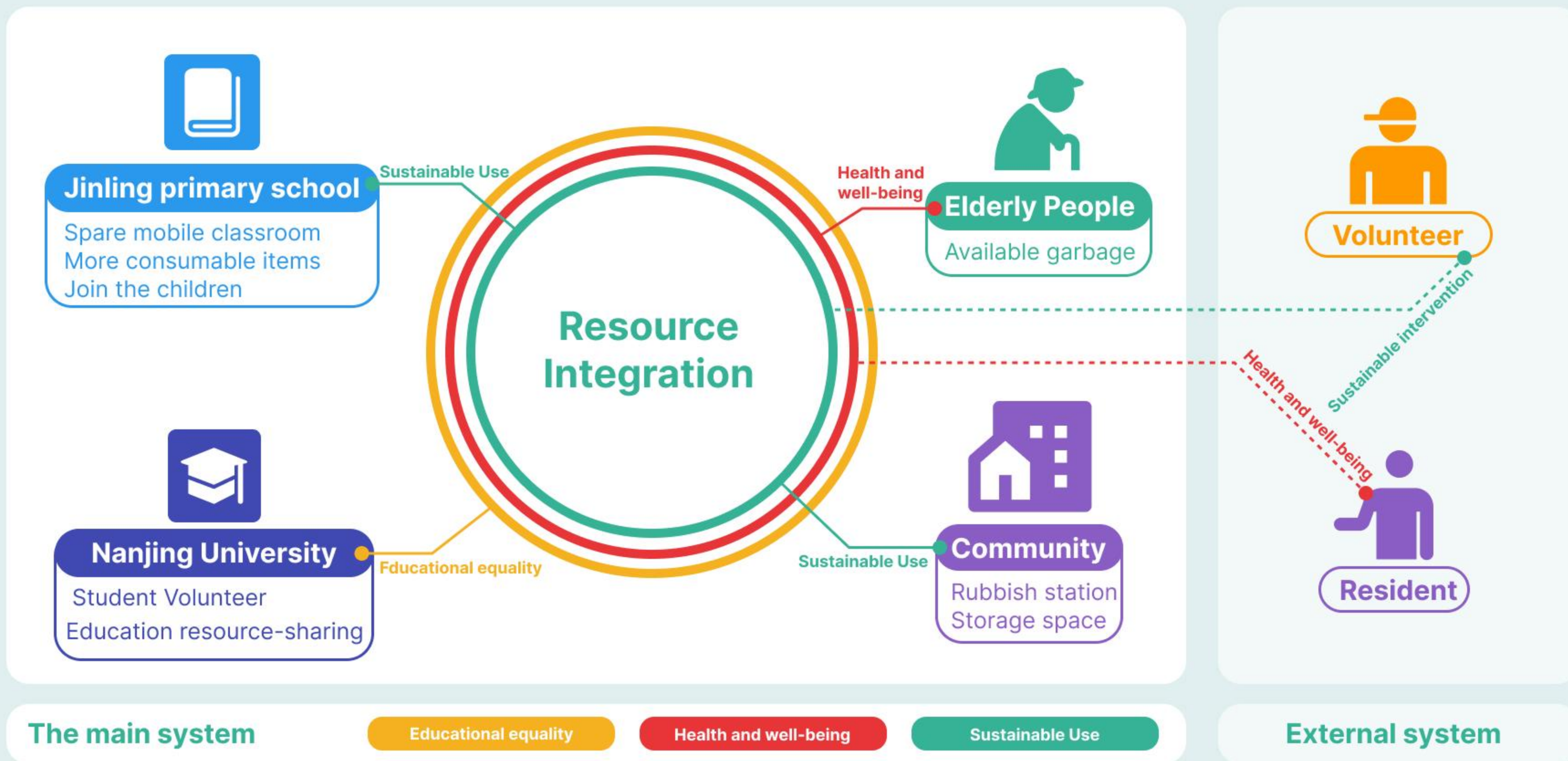
- Strengths of the Disciplines
 - Architecture
 - Environmental Science
 - Astronomy (Top 1)
 - Design
 - Government Management
- Academic Research Project
 - Spatial governance and sustainable development
- Student Clubs & Activities
 - 154 student clubs
 - NJU Environment Association
 - Changing Recycleprogram

Environmental Education

Intergenerational Programming



Resource Integration



System Flow



Collection

- Door-to-door Recyclables Collection
- Psychological Counseling



Promotion

- Garbage collection station
- Jinling Primary School

Second-hand Items:
Old Books/Cloths/
Furniture/Crafts...

Community-based Local Recycling System



Recycling Bank

Storage & Exchange

Flea Market



Exhibition



Co-creation

Recyclable Waste:
Plastic/Glass bottles,
Cardboard, Cans...



- A monthly workshop
- Join elderly people, children, students, residents together to reuse the recyclable waste

Decomposition



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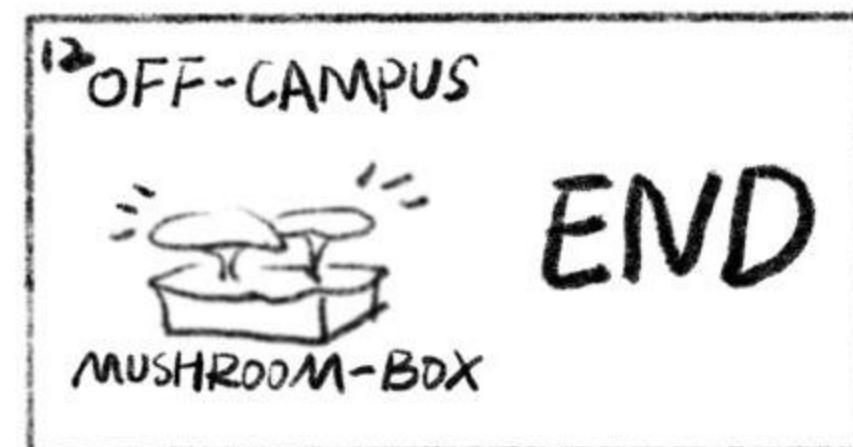
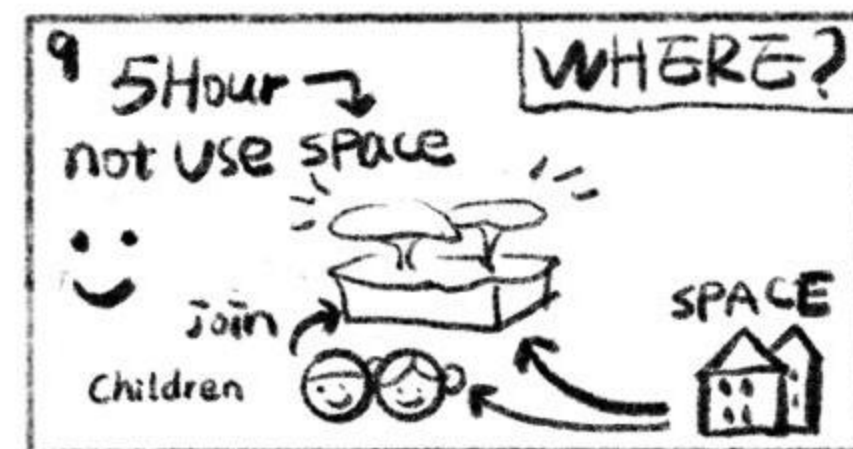
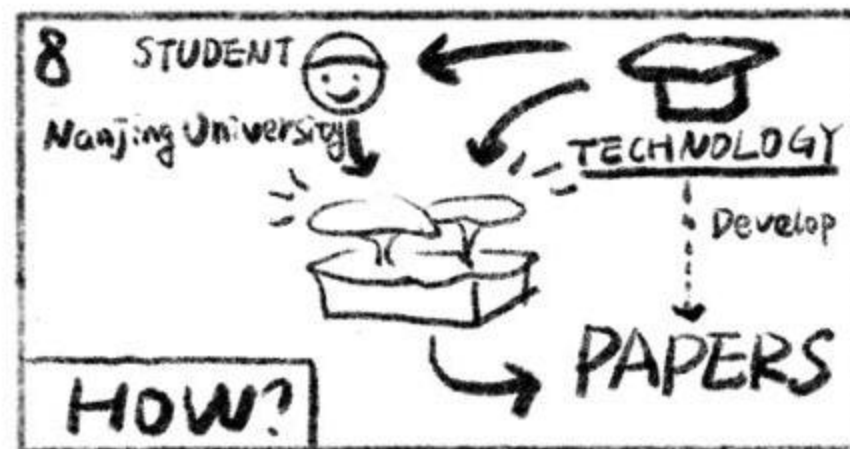
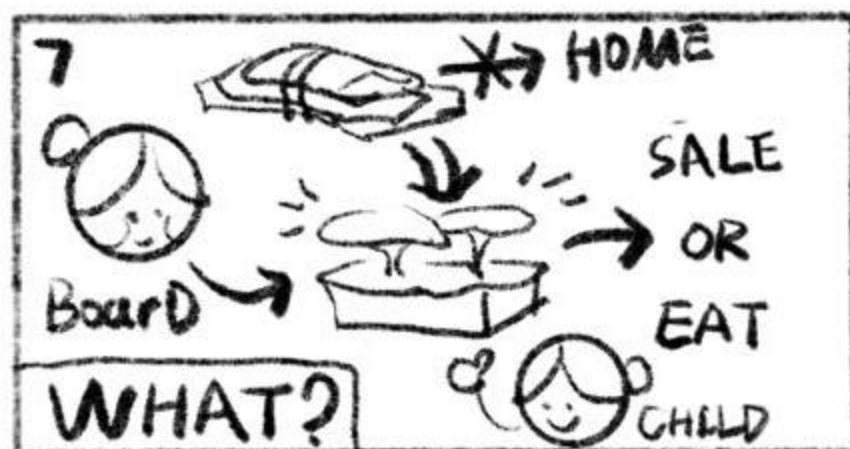
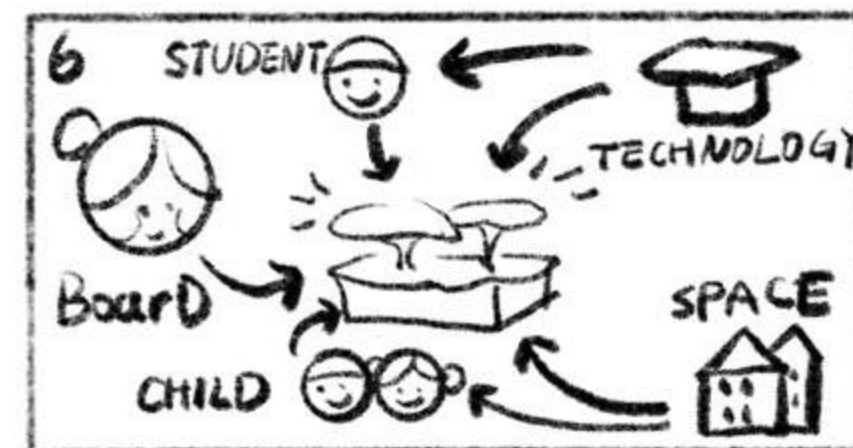
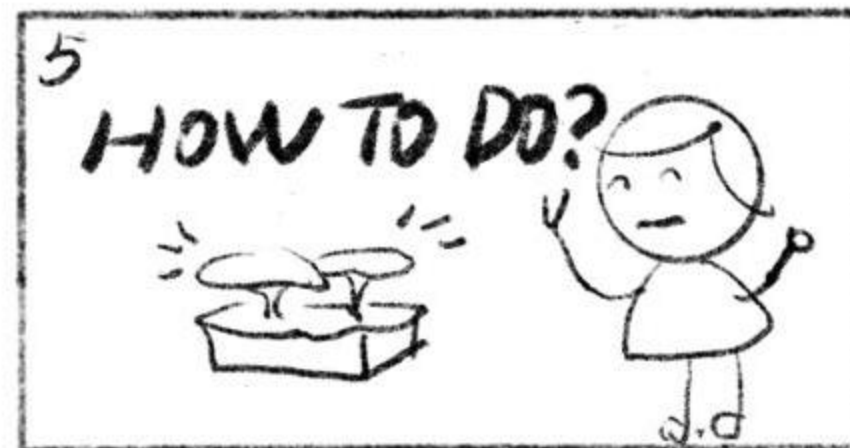
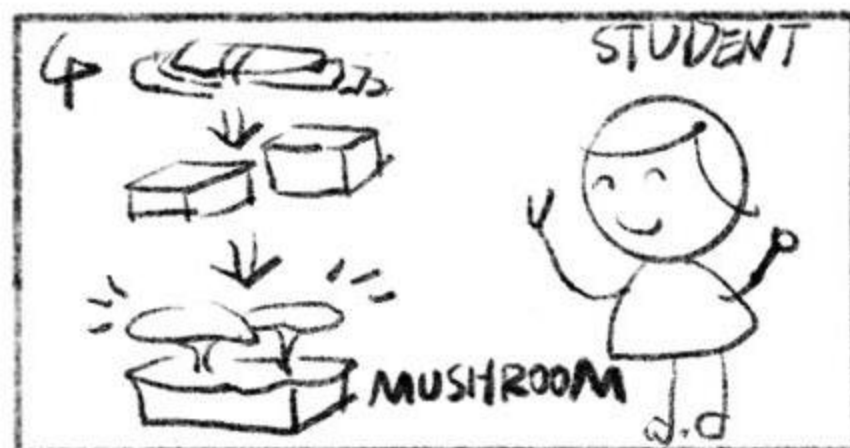
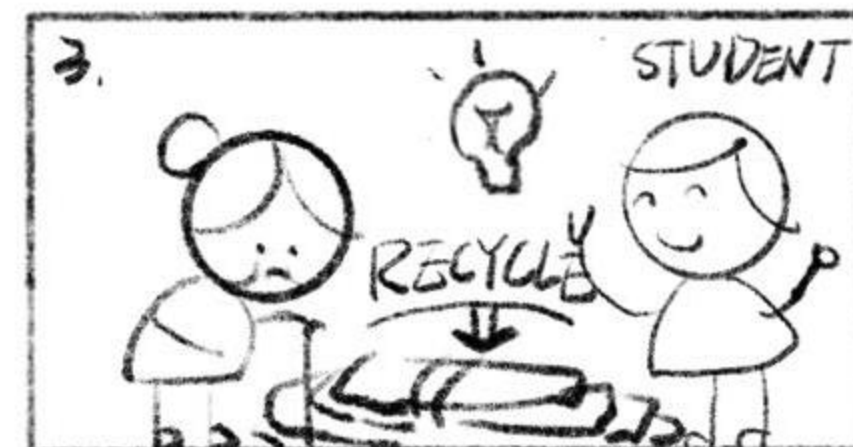
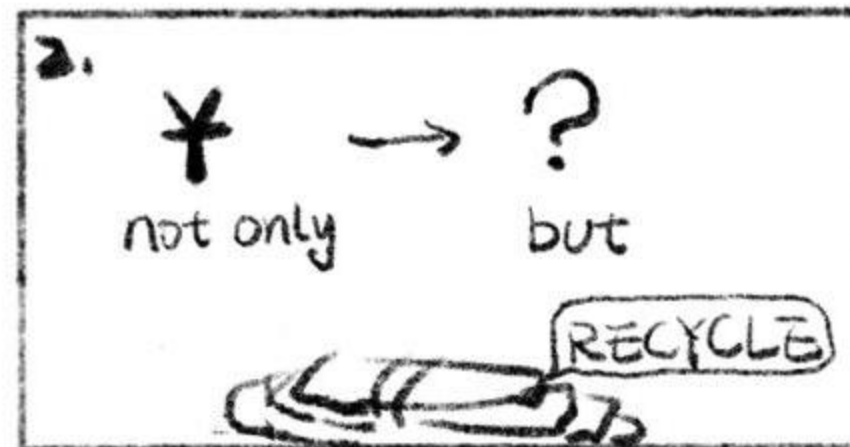


Transformation

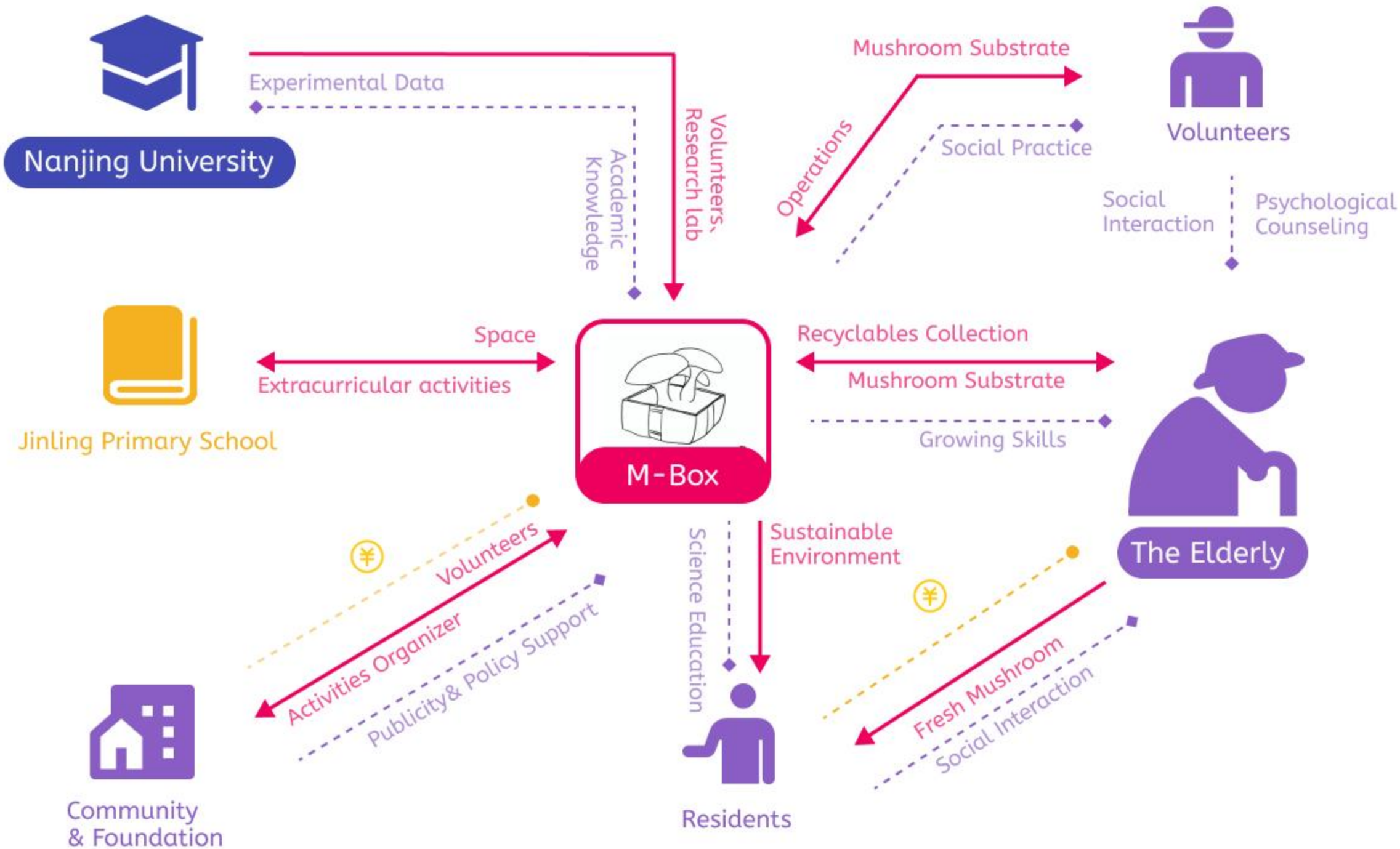
- Stray Cats Shelters
- Outdoor public furniture
- Public facility renovation for the elderly
- Community Decor
- ...



Storyboard



System Map



Information Flows Material Flows Financial Flows

Project Vision

To improve social connection and well-being among elderly in the community through sustainable activities led by the Nanjing university, supported by the community and located in Jinling Primary School that let the elderly, children and young people co-design together to build a sustainable community recycling system.

- **Well-being of The Elderly**

Since hoarding is a mental illness that can be a precursor to Alzheimer's disease, we need to have a psychological counselling to intervene early.

- **Social Connection**

Loneliness could also leads to the hoarding phenomenon. The project aims to help the elderly integrate into the community through activities.

- **Sustainability**

A series of sustainable activities will be held to co-design with the elderly to make good use of the collected waste and build a community-based recycling system.

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Thanks for Listening !

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