

# SUNAI

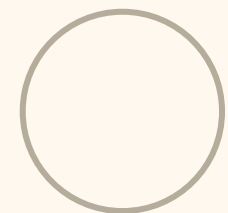
Vandana Rajasekar

A Seasonal Civic Infrastructure  
for Chennai, Tamil Nadu

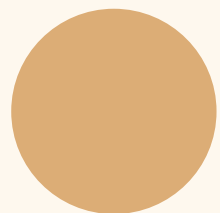
## DESIGN VISION & CONTEXT

Chennai faces extreme water cycles—severe monsoon flooding followed by intense summer dryness. Traditional civic models treat rainfall as a nuisance to drain away using “grey infrastructure”. SUNAI shifts this paradigm, turning seasonal rain abundance into public commons, local ecology, and cooling comfort.

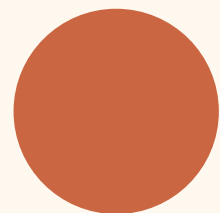
## MATERIALS & COLOR PALLETE



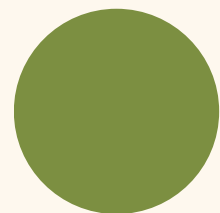
Sandstone



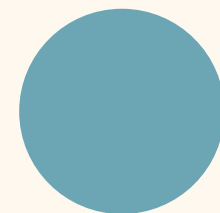
Oak Wood



Terracotta



Vegetation



Water  
Reflections

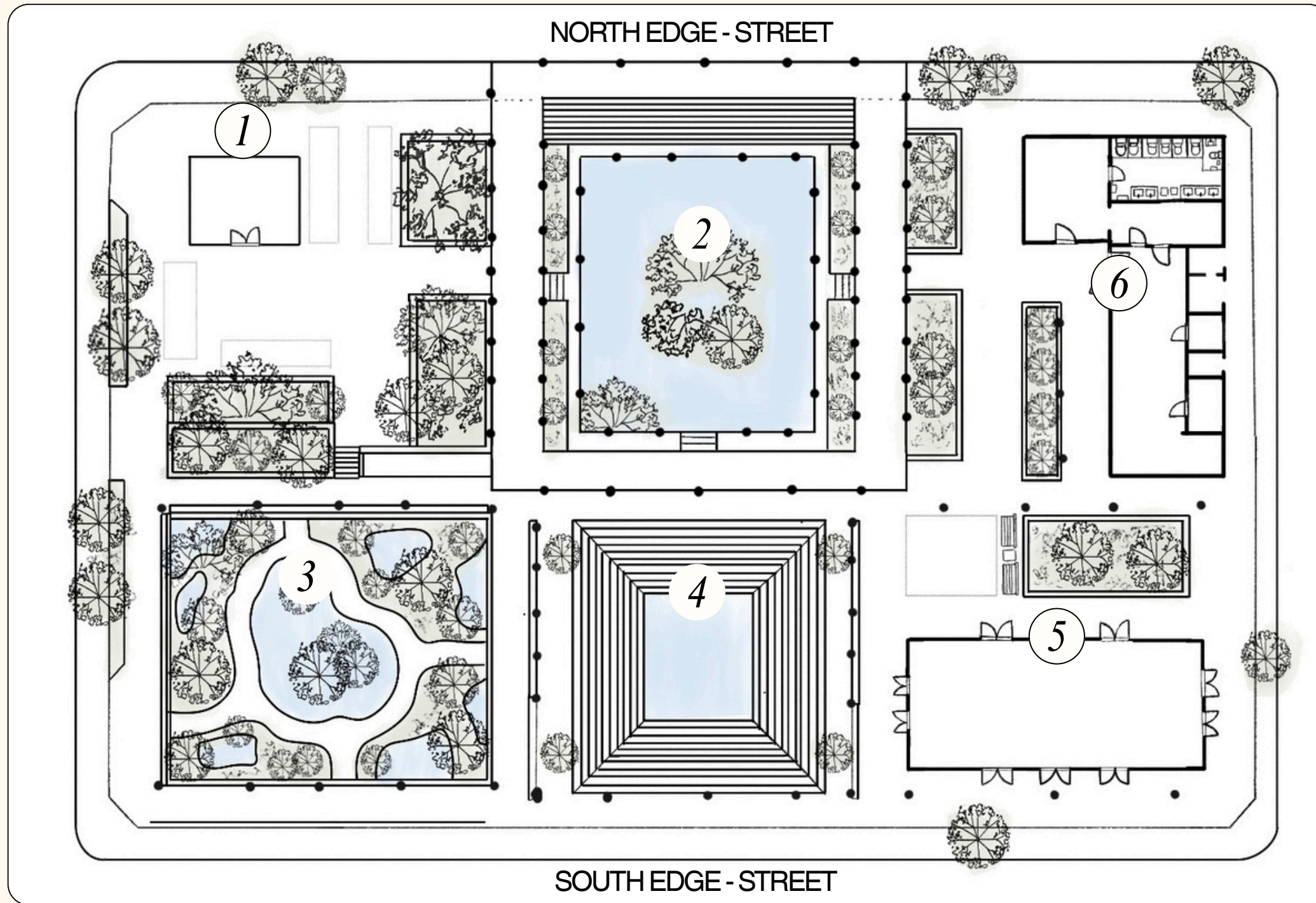


Q. How can civic architecture transform seasonal monsoon water into year-round public life, regeneration, and thermal comfort?

# SUNAI

## Spatial Planning and Section Distribution

### GROUND FLOOR PLAN



#### ① *ARRIVAL PLAZA*

Shaded entry court & flexible public space

#### ② *RAIN COURT*

Transformation space, waterfalls + channels

#### ③ *WETLAND GARDEN*

Ecological filtration & exhibition, native plants

#### ④ *STEPWELLS*

Terraced water space inspired by traditional baolis

#### ⑤ *COMMUNITY PAVILION*

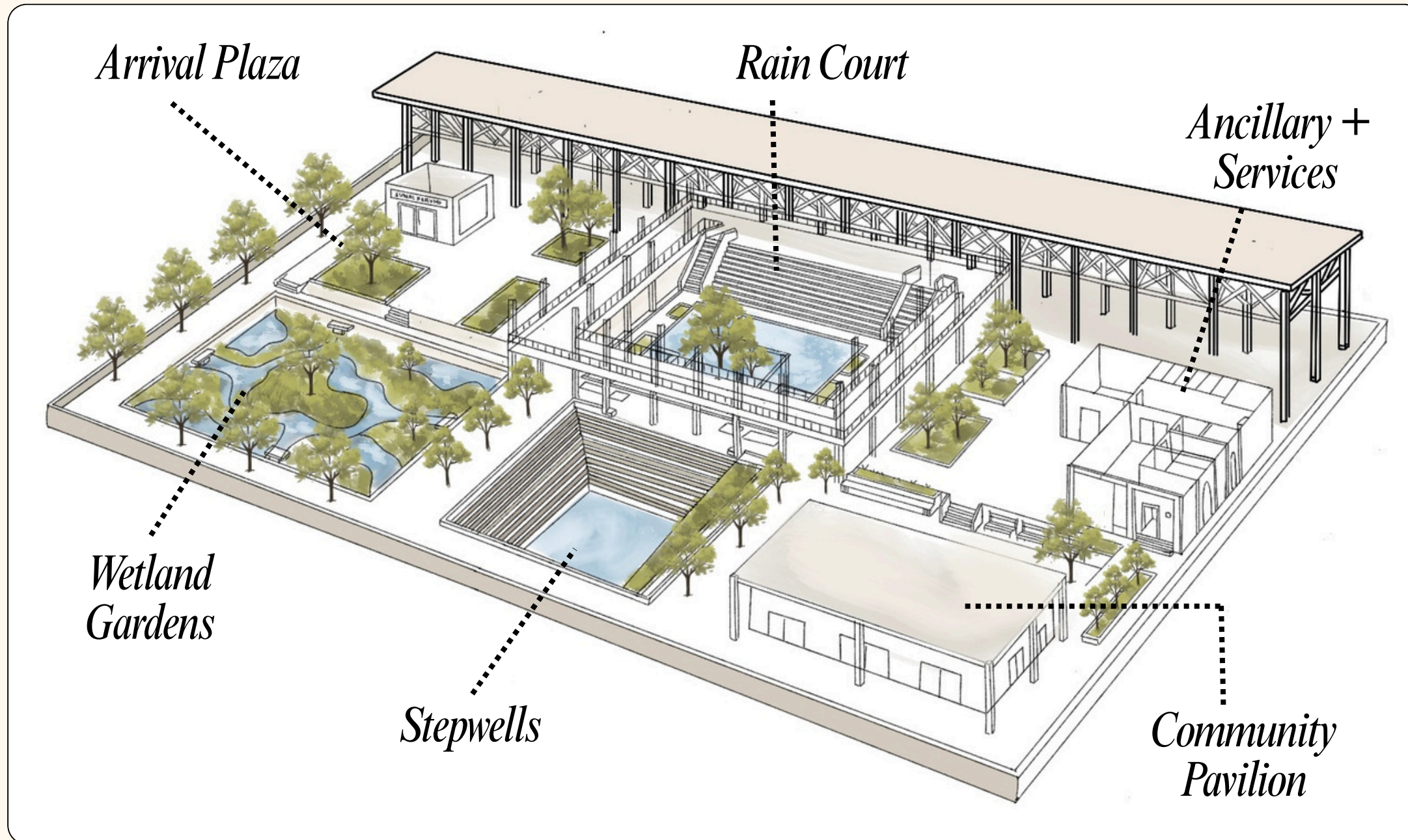
Flexible hall for events, workshops or market stalls.

#### ⑥ *ANCILLARY & SERVICES*

Sanitary Block (Restrooms), Electrical, Pump + Filter for Cisterns

# SUNAI

## Spatial Planning and Section Distribution (Continued)



### COMMUNITY PAVILION - *Concept Image*

Ex. During dry seasons farmers markets are set up, surrounding vegetation and cooling mists.

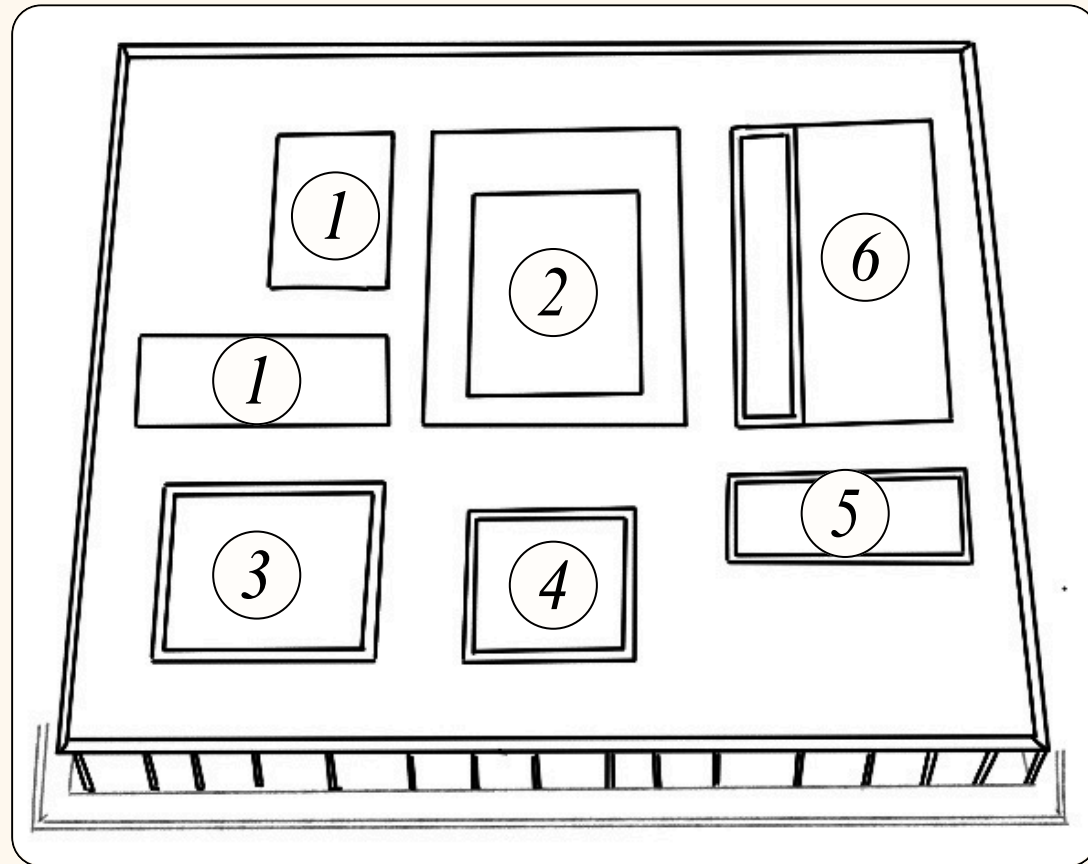


### AXNOMETRIC

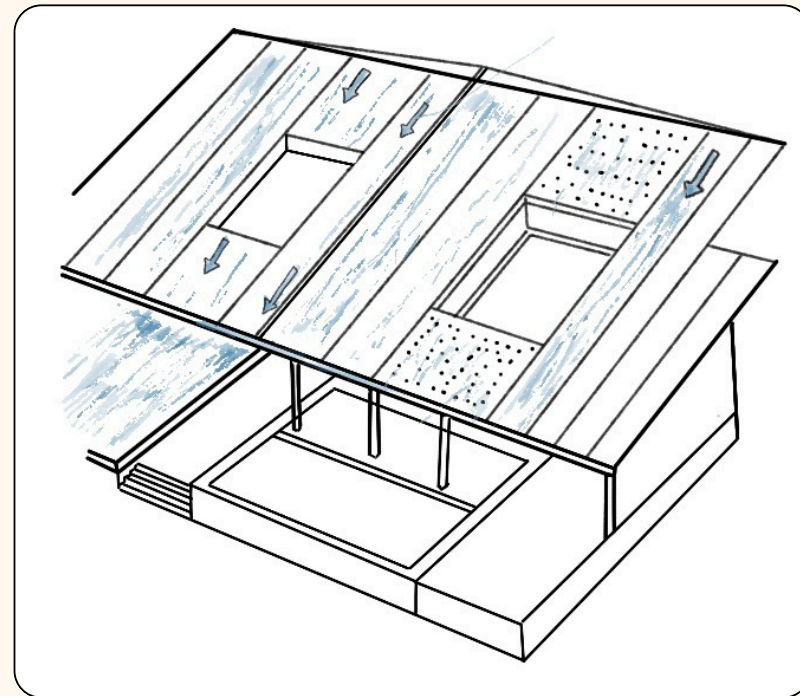
This layout connects active social spaces directly with natural climatic buffers. Restrooms, administration, and workshop storage are organized along the eastern perimeter, leaving the main courts open for natural ventilation.

# SUNAI

## Hydraulic Infrastructure

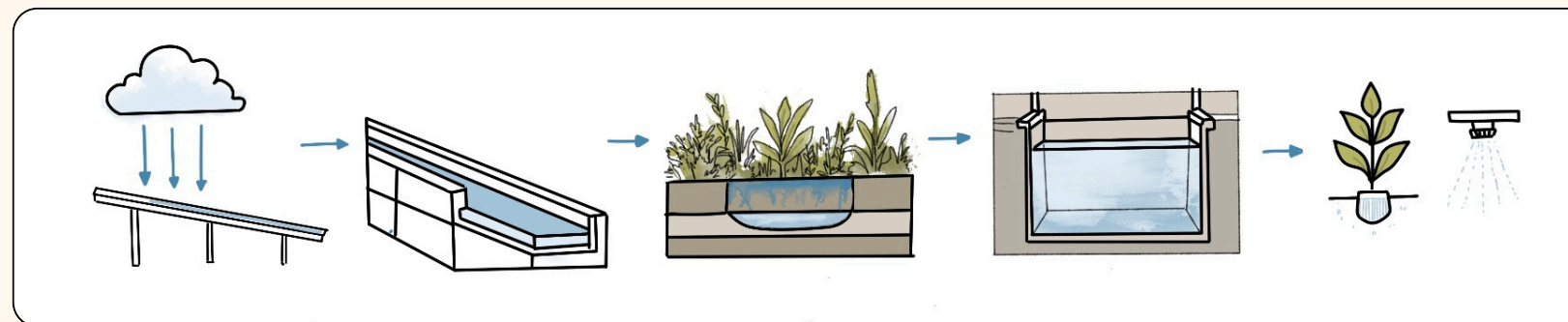


- ① **ARRIVAL PLAZA:** Perforated canopy + translucent cover
- ② **RAIN COURT:** Translucent roof + rain opening
- ③ **WETLAND GARDEN:** Translucent perforated roof + directed rain opening
- ④ **STEPWELLS:** Translucent Roof
- ⑤ **COMMUNITY PAVILION:** Translucent roof
- ⑥ **ANCILLARY & SERVICES:** Translucent Roof for Greenery + Solid Roof

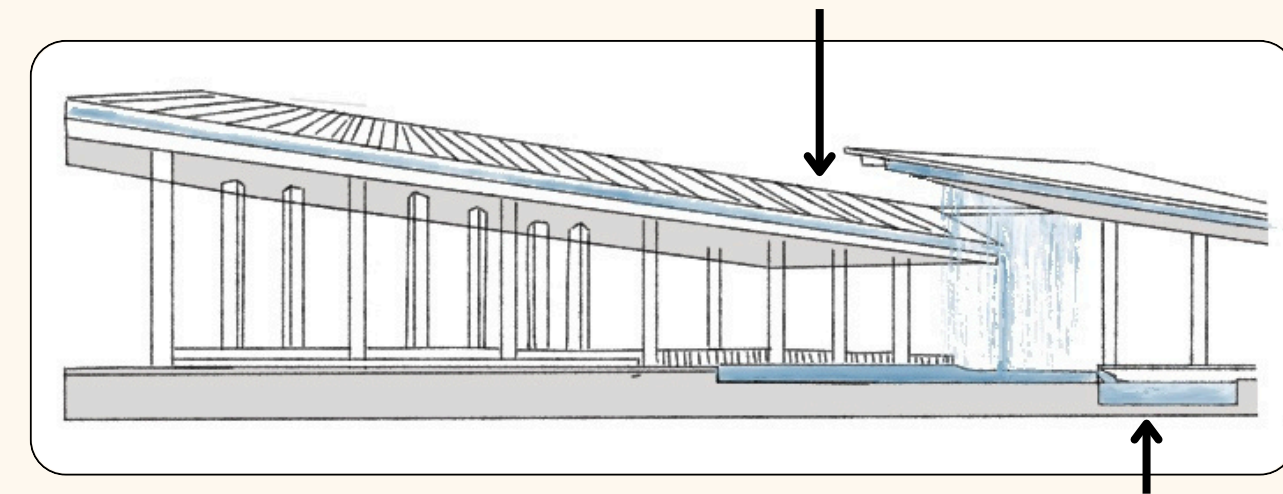


- **Collection Roof (sloped panels)**
- ⋯ **Perforated Roof (filtered light + ventilation)**
- **Open roof voids (rain falls into courts)**
- **Water Flow Direction**

- 1. **COLLECT**  
Roof collects water
- 2. **FLOW**  
Water moves through roof channels
- 3. **FILTER**  
Passes through rain gardens + gravel beds
- 4. **STORE**  
Stored in underground cisterns
- 5. **REUSE**  
Used for irrigation, cooling, landscape etc.



**RAIN OPENING:** directs water to lower channels



**UNDERGROUND CISTERNS:** stores filtered water

During dry months stored water sustains vegetation, cooling systems, and community spaces, allowing the architecture to adapt to changing climatic condition



Here water is not hidden infrastructure, rather it is the generator of public space.

By utilising deep sunken pits at graduated depths (Zone 2 is shallow, Zone 3 is deep), water flows naturally through gravity. Underground pipes hidden under dry concrete walkways act as the relay corridors, ensuring the public never has to walk through standing water.

# SUNAI

## Seasonal Atmospheres

Rather than a static, single-use shell, SUNAI completely shifts its public and thermal qualities with Chennai's changing climate.

### MONSOON

Active channels fill with water. Dramatic rain cascades turn the courtyard into a majestic “water theater”. Rain sounds bounce off the textured stone walls and pools.

### DRY SEASON

The central pools dry out, redirecting stored water underground. The dry stone basins become cool, sunken plazas for weekend community markets, craft workshops, and open theaters.

SUNAI bridges the threshold between functional infrastructure and vibrant public architecture.



Rain Court - *Generated Concept Image*