

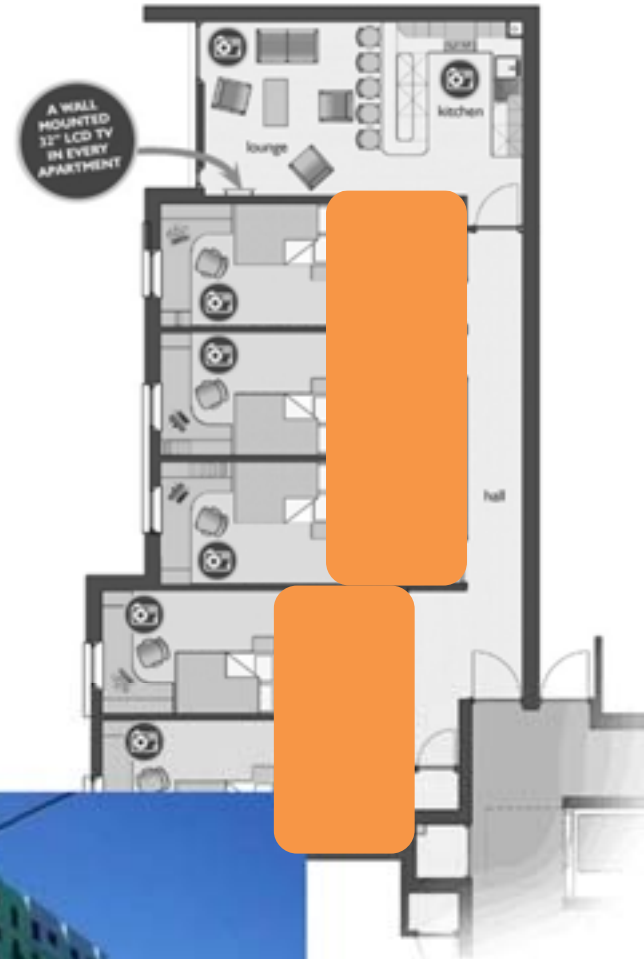
# the arboretum

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**Can a student housing development deal with  
the temporal nature of the users, the issues of  
housing scarcity, climate change,  
and still add to the community?**

**The Arboretum – a holistic design concept that begins at  
masterplanning, building design, construction and  
continues with operational management and  
building community.**

## A photograph showing three men moving a large, green, L-shaped sofa out of the back of a moving truck. One man in a blue shirt is pushing the sofa from the right side. Another man in a dark jacket and red scarf is on the left, also pushing. A third man is visible inside the truck, leaning over the sofa. The truck's interior is packed with various items, including boxes, a lamp, and a large white bag. The scene is set outdoors on a paved surface.

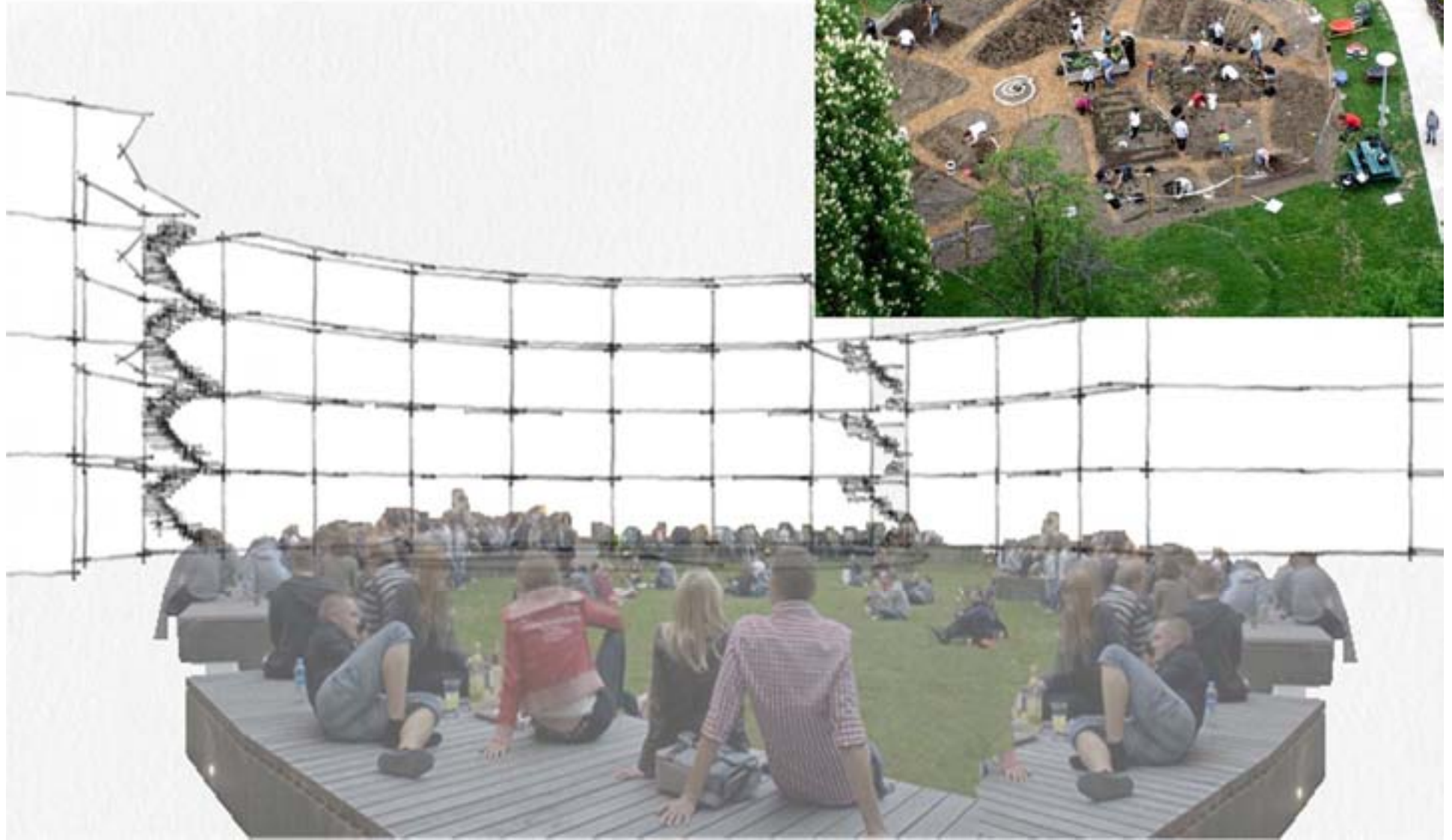


# the arboretum

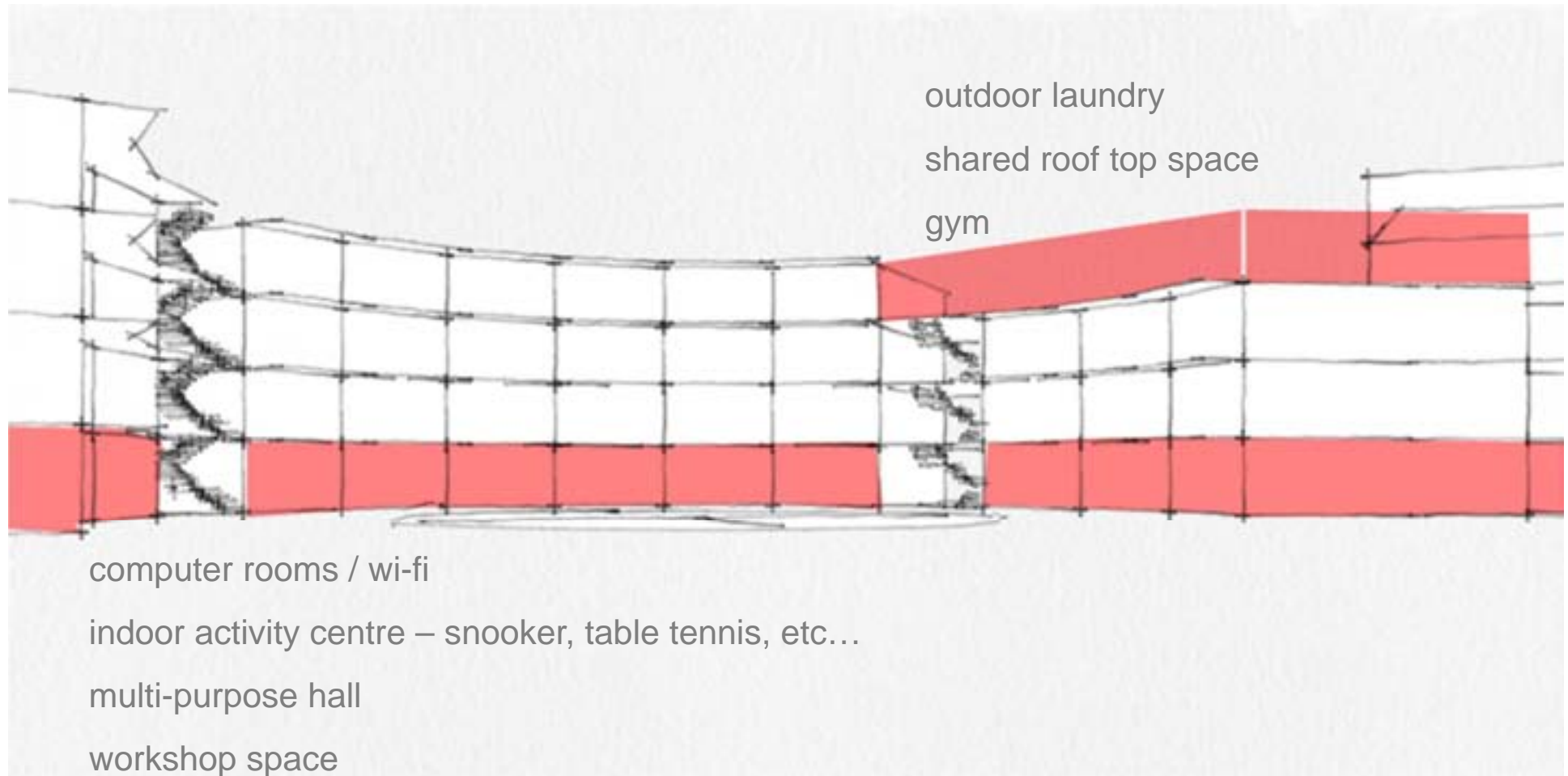




public space



# shared facilities



outdoor laundry

shared roof top space

gym

computer rooms / wi-fi

indoor activity centre – snooker, table tennis, etc...

multi-purpose hall

workshop space

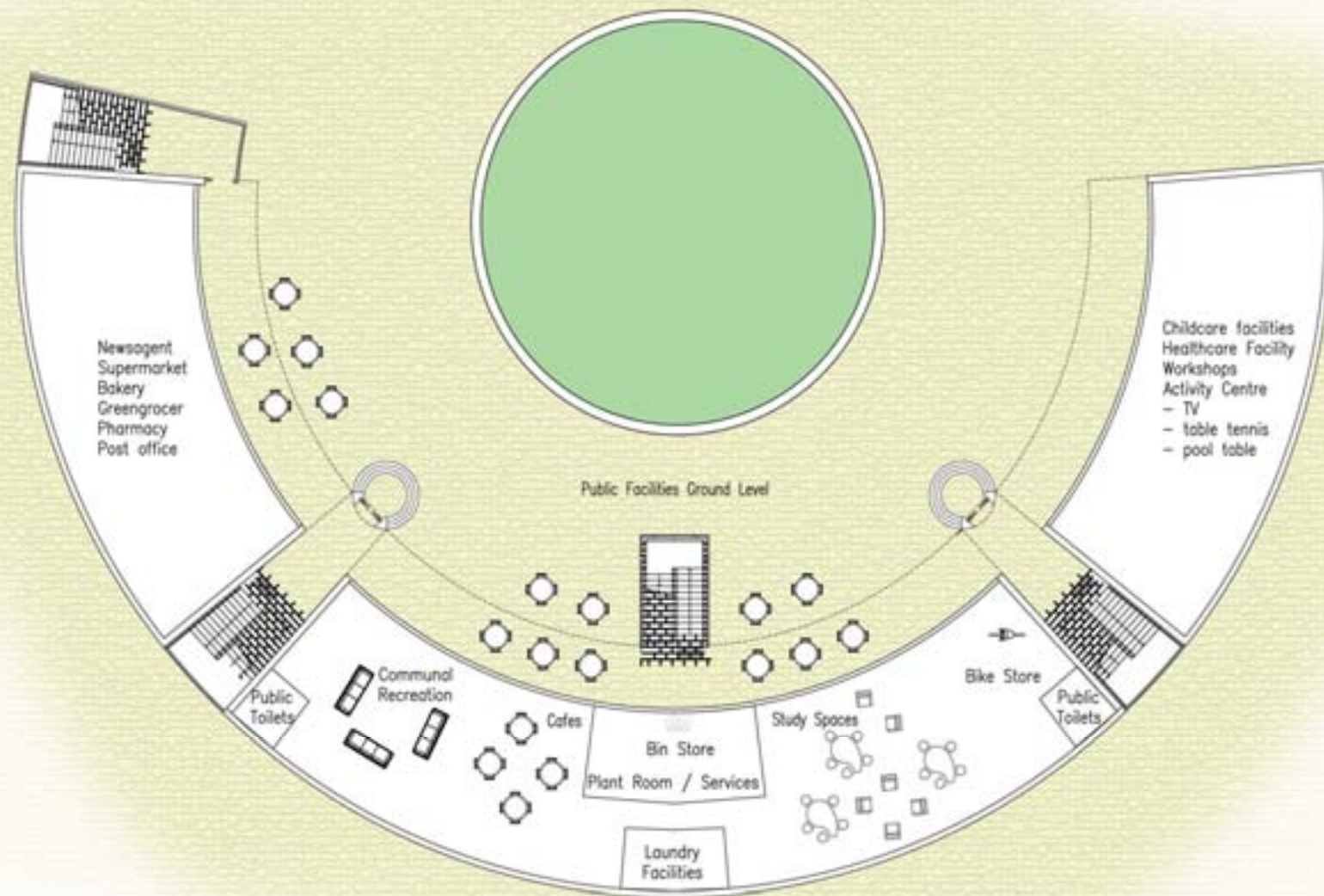
childcare

bicycle facilities

commercial spaces for useful amenities:

bakery, newsagent, food grocers,  
medical centre, print-rooms, chemist,  
post office, cafes and more...

# shared facilities



0m 5m 10m 20m



# mix of housing type



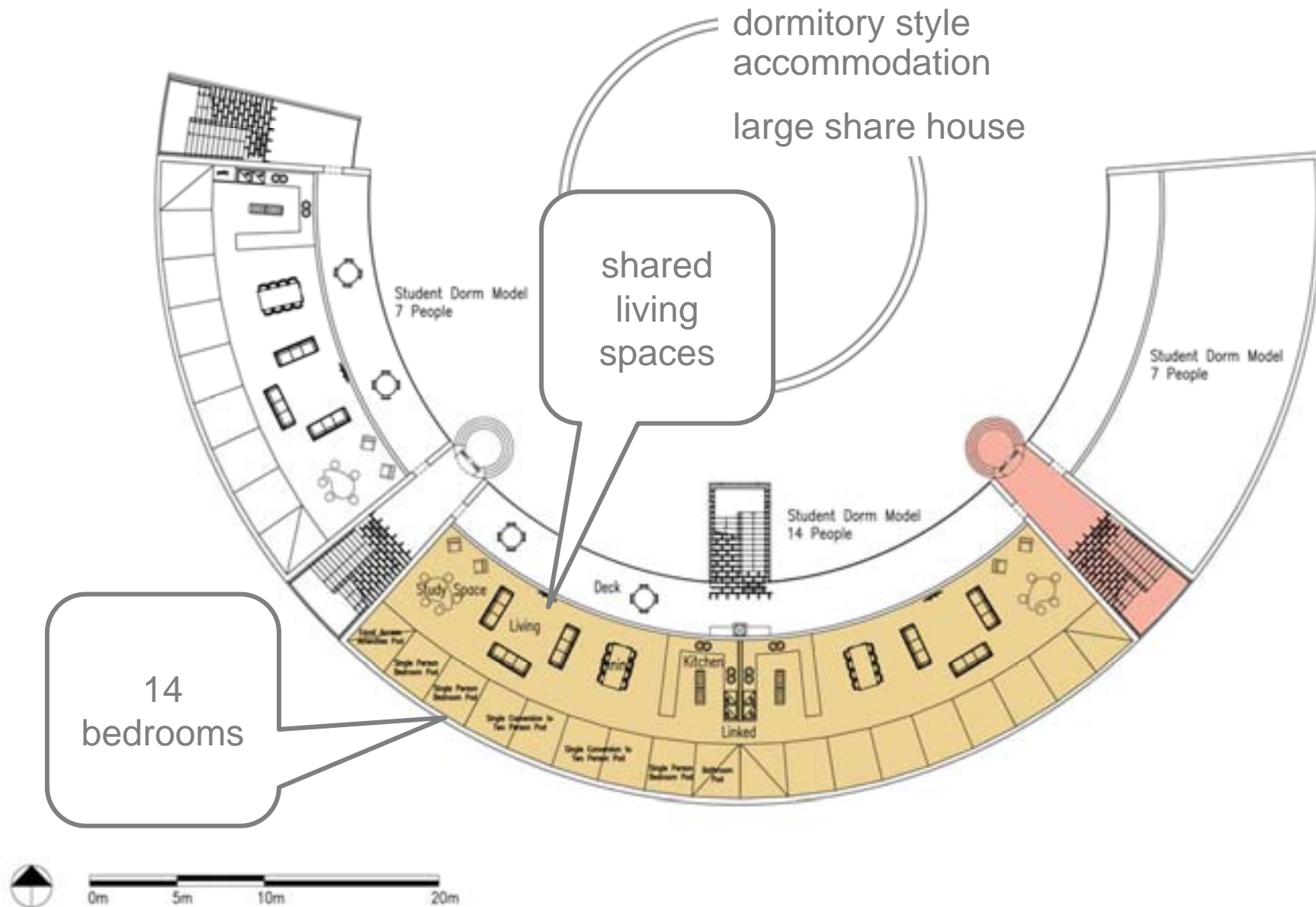
dormitory style accommodation

various share house sizes

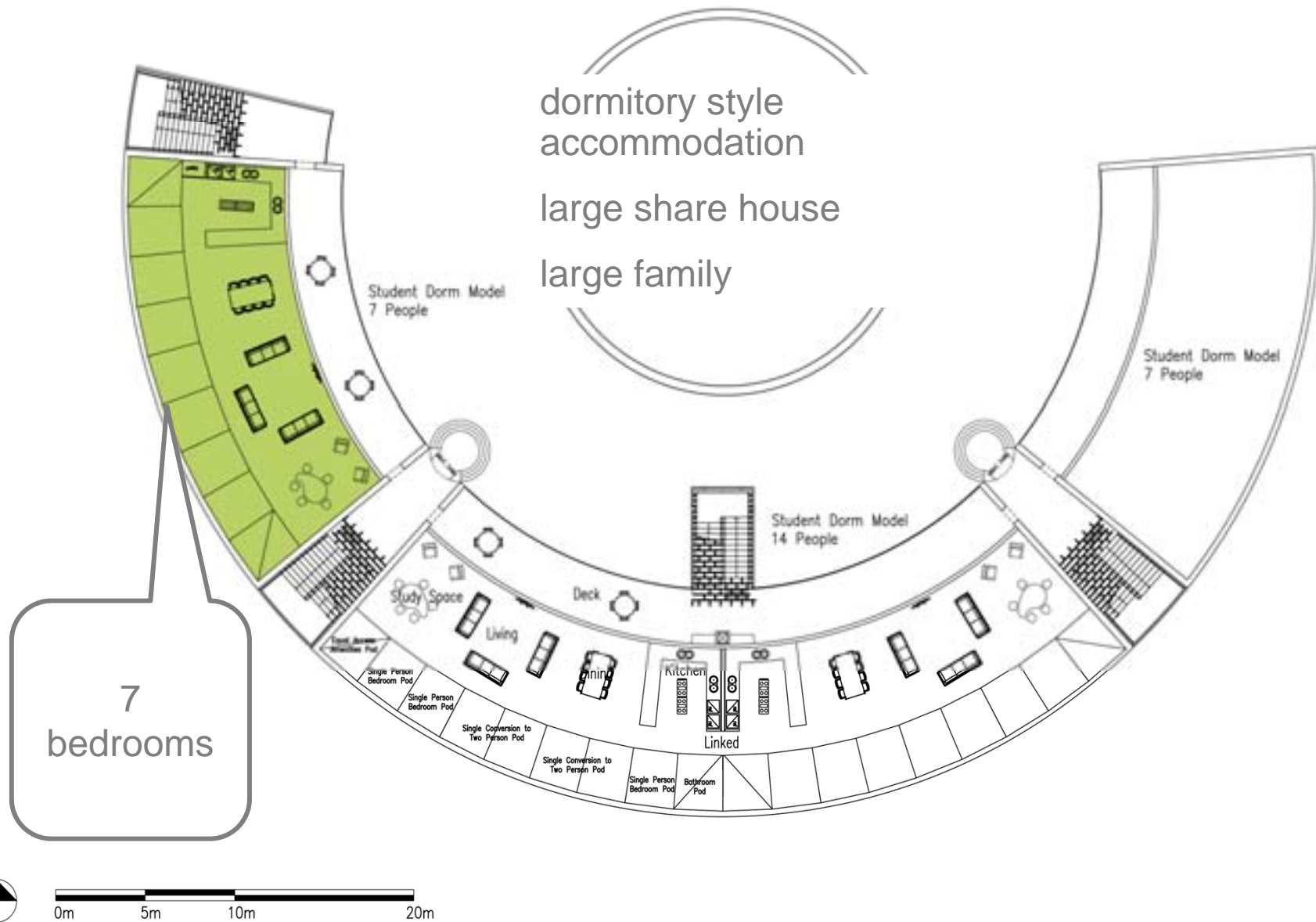
family friendly units



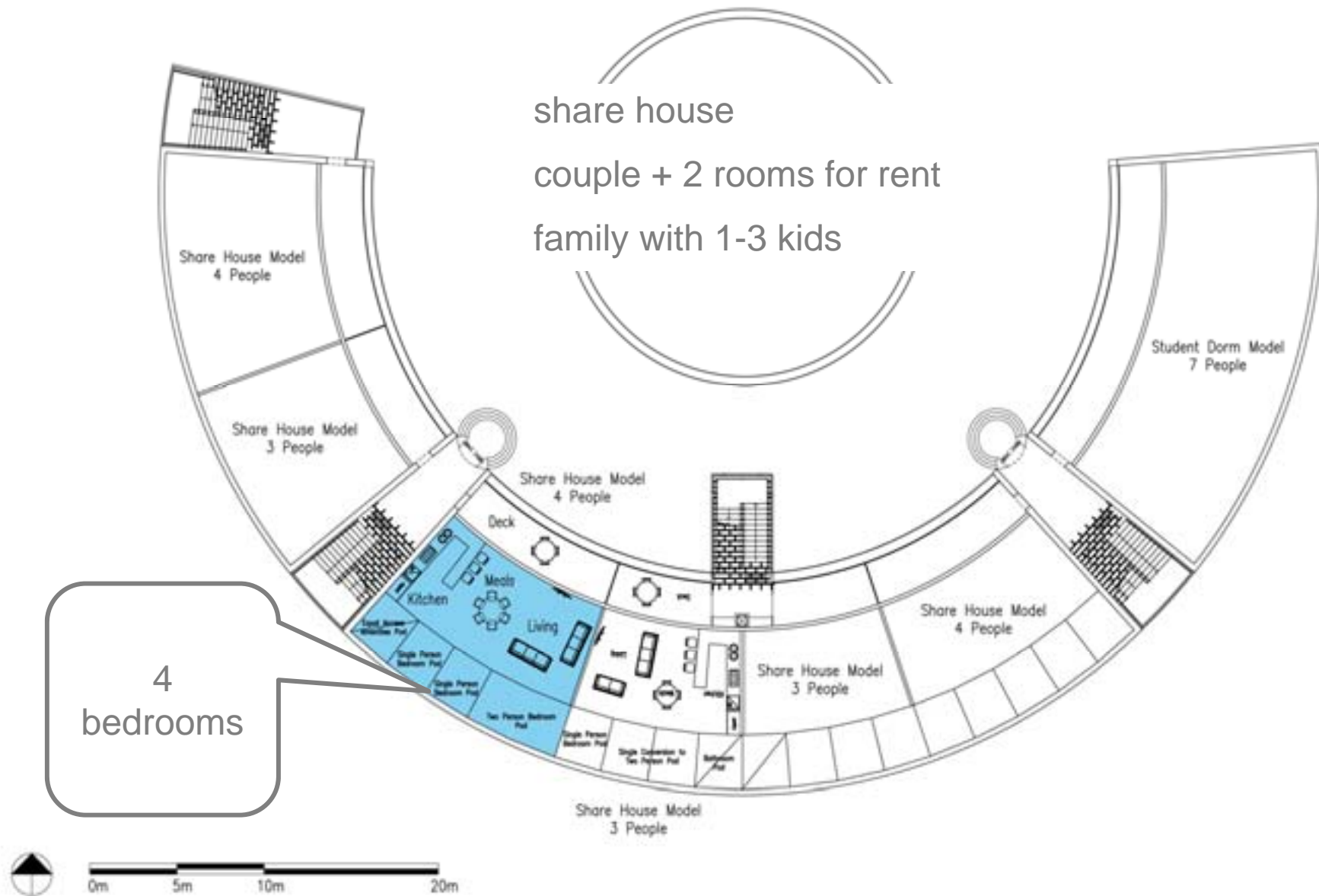
# mix of housing type



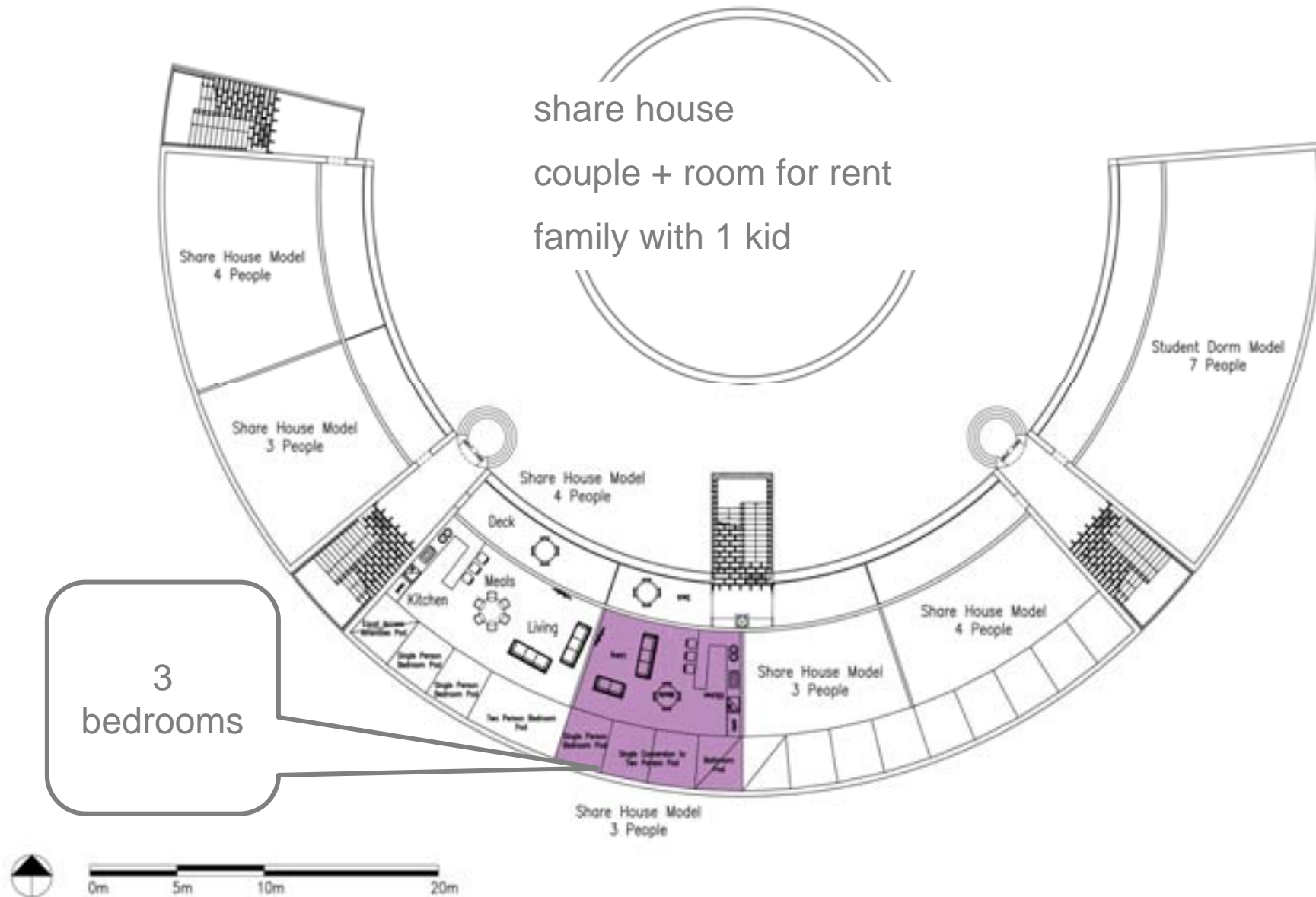
# mix of housing type



mix of housing type

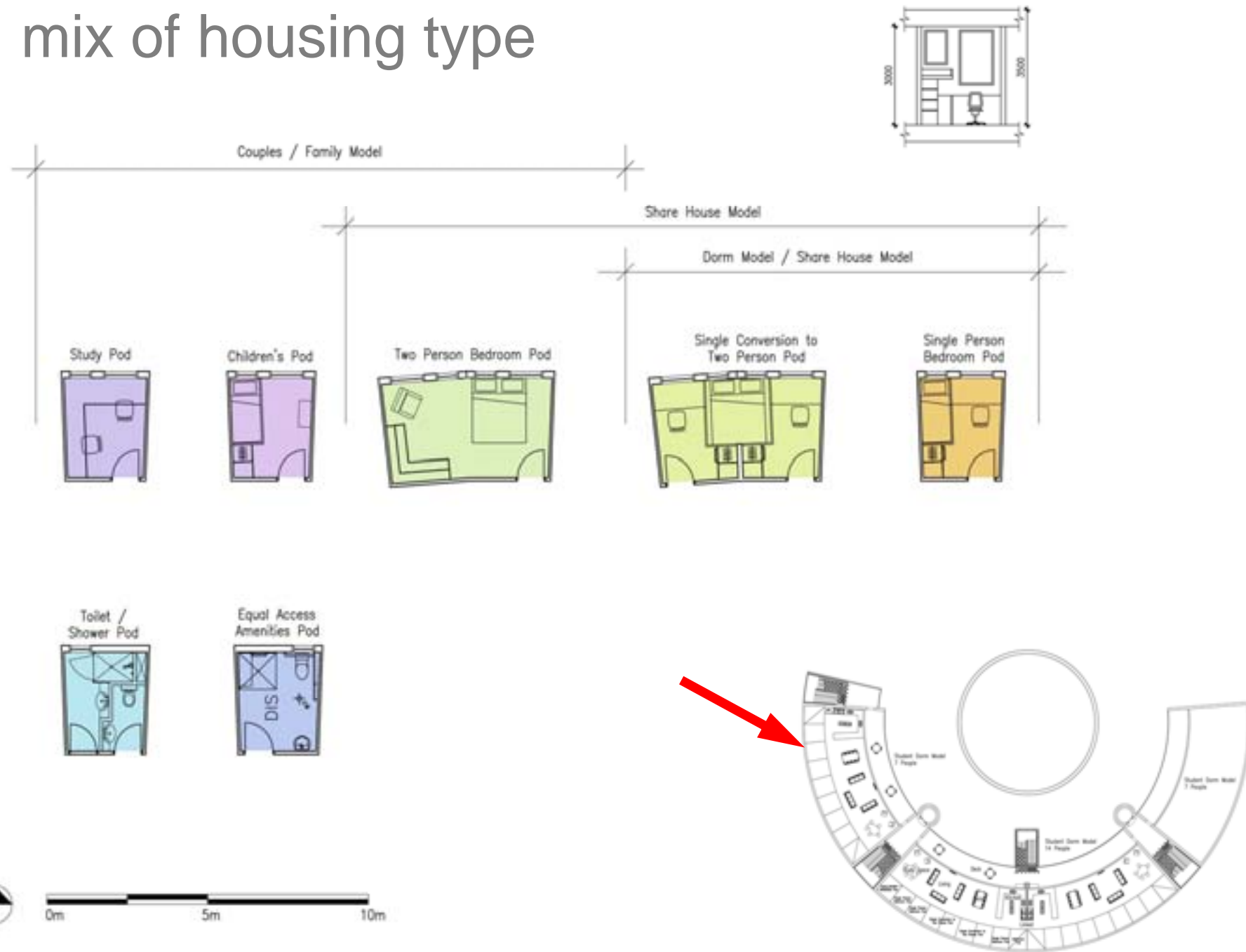


mix of housing type





# mix of housing type



# responding to climate



**= free heat + free light**



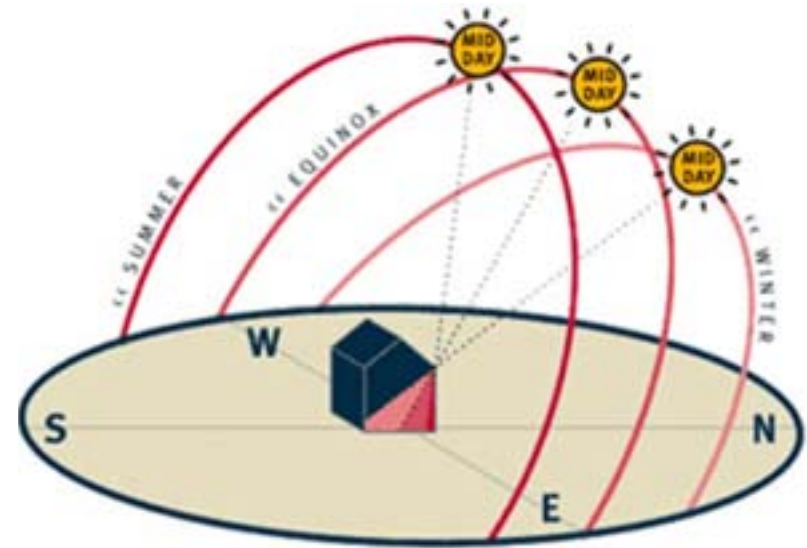
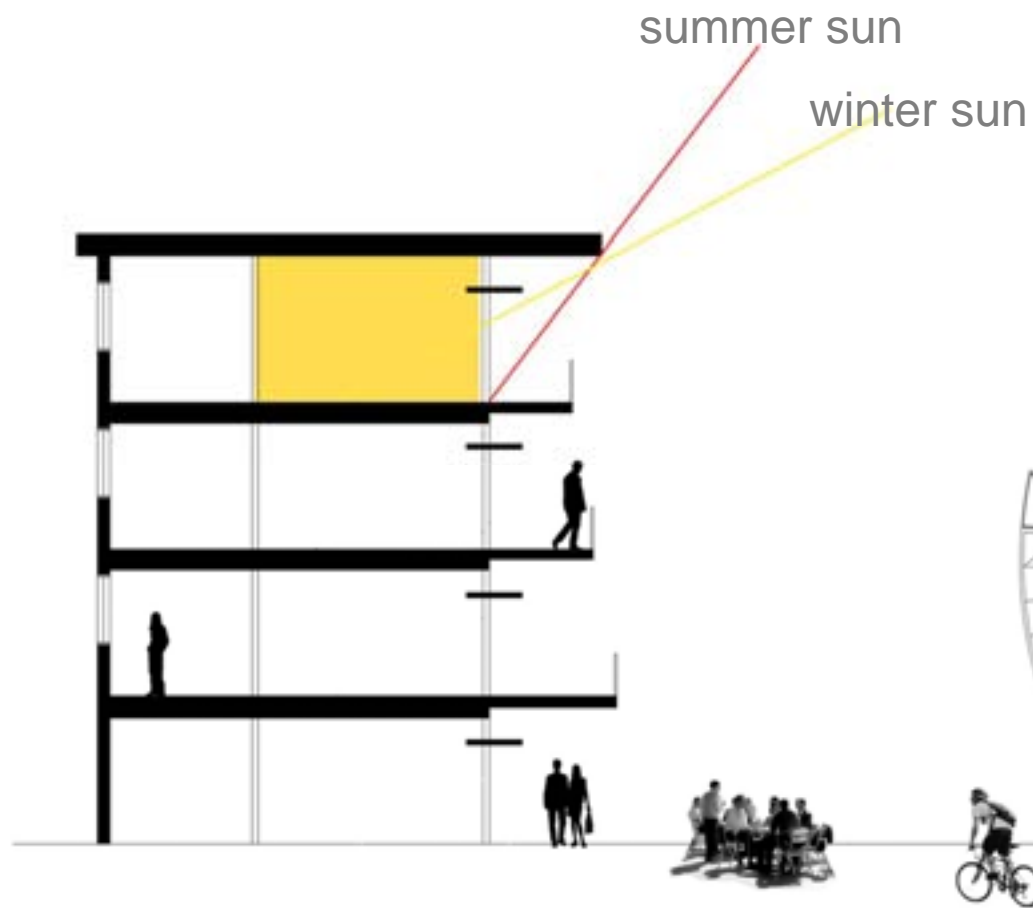
**= free cooling + free ventilation**



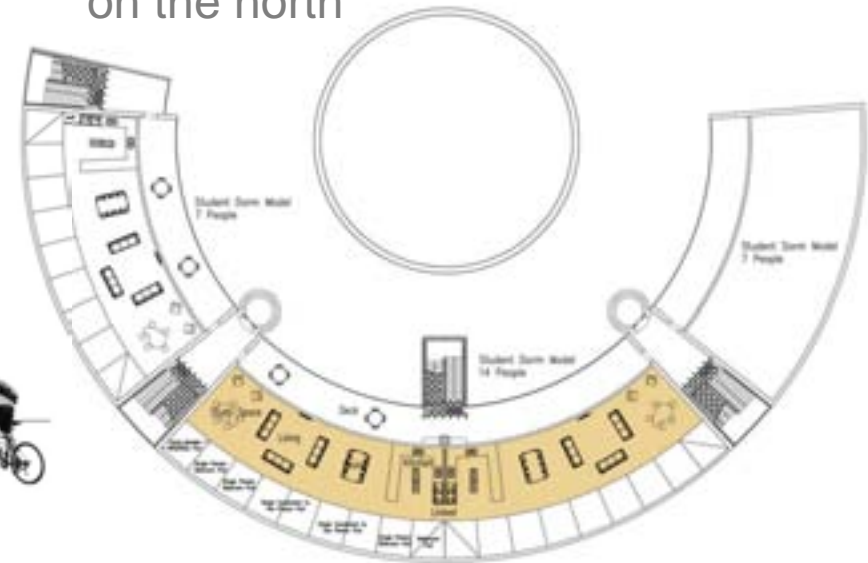
**= free water**

# harnessing the sun

## passive solar design

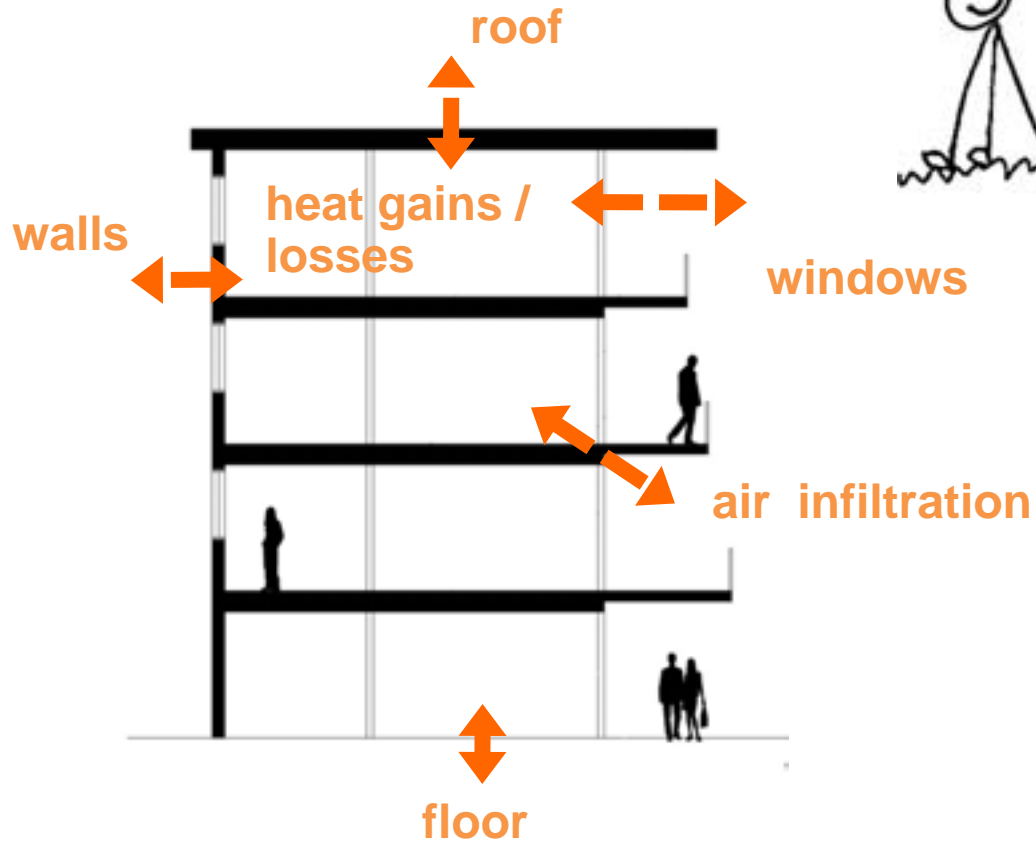


open space  
on the north



# harnessing the sun

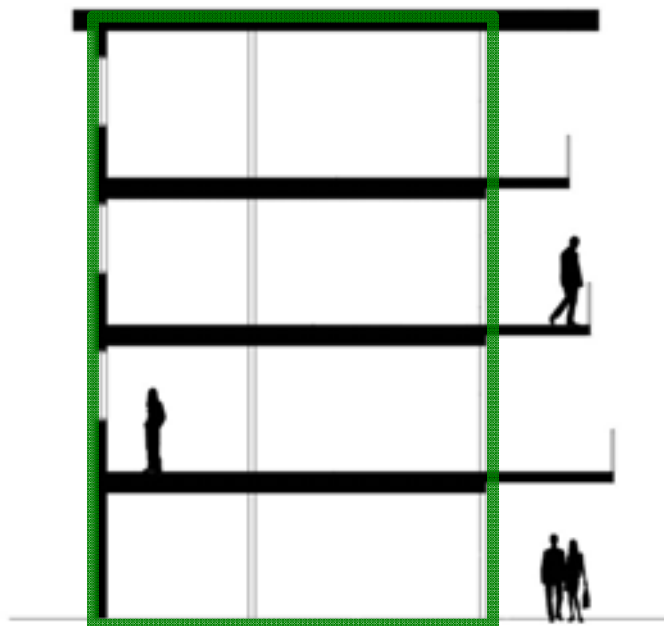
## passive solar design





# harnessing the sun

## passive solar design



Insulation + double glazing

measure of how much heating & cooling energy is required for a house / apartment



+

+

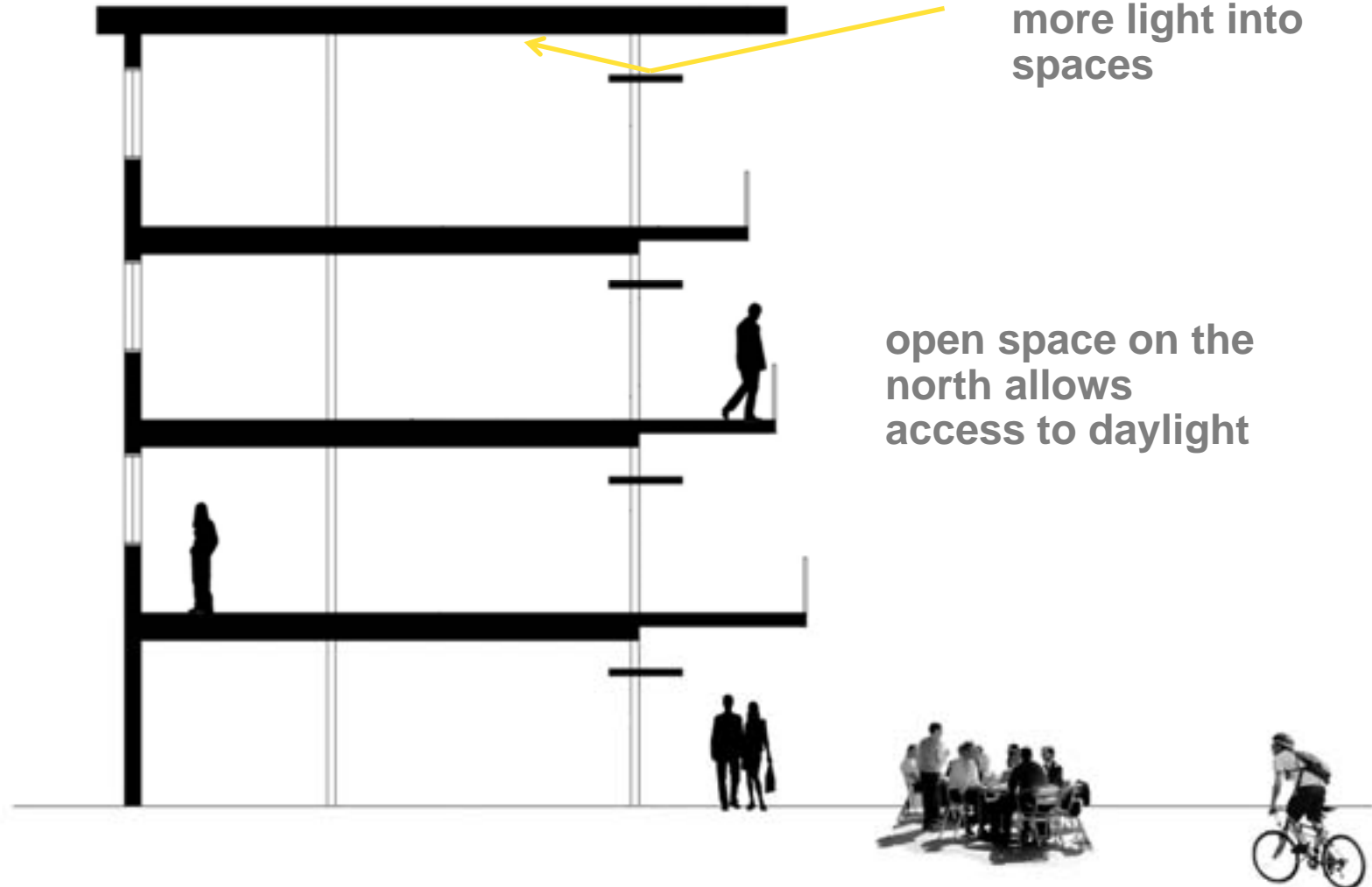
May 2011

mandatory disclosure of energy efficiency rating of houses & apartments when selling or renting

# harnessing the sun

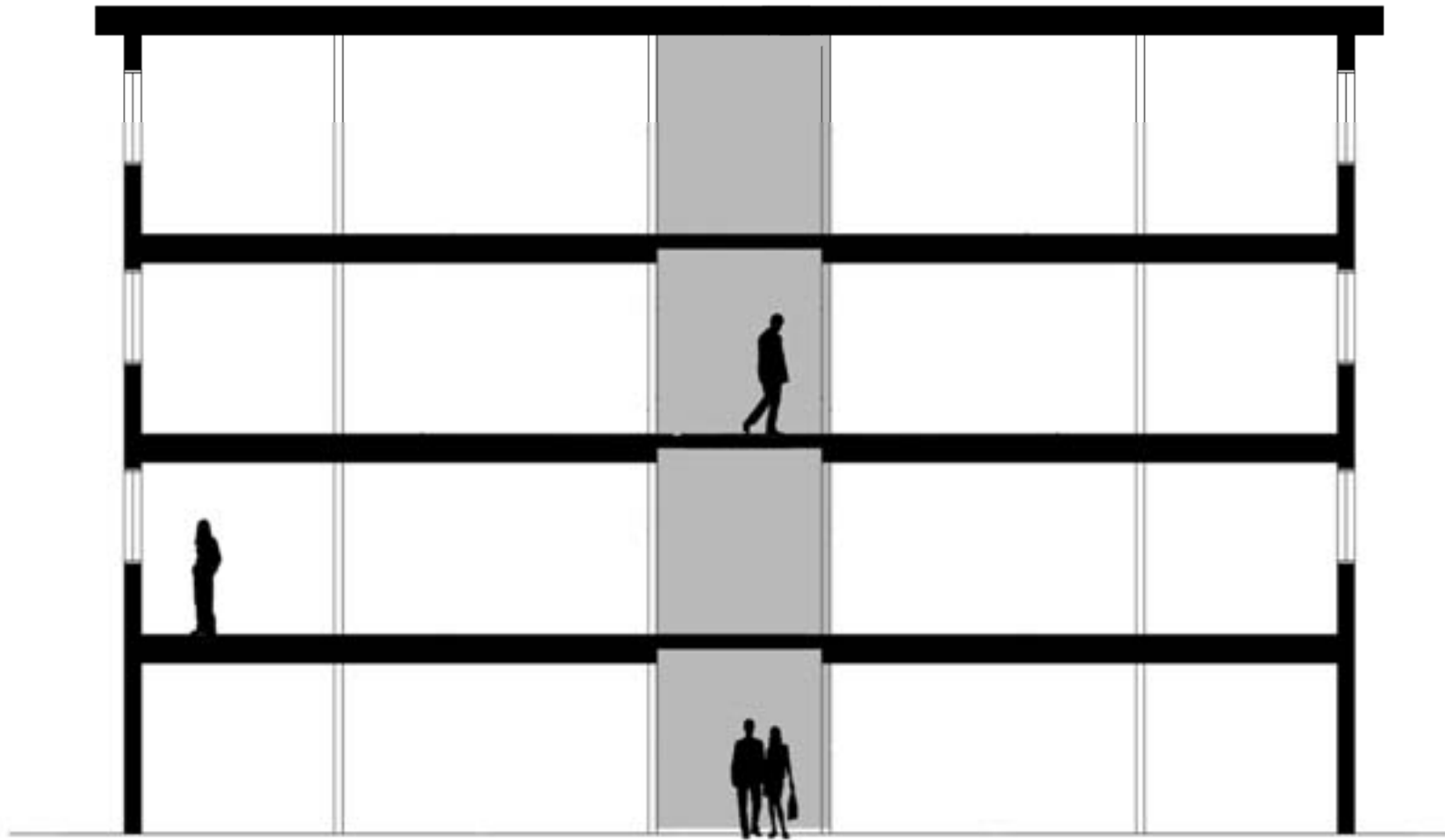
daylight access

Simple design features like light shelves reflect more light into spaces

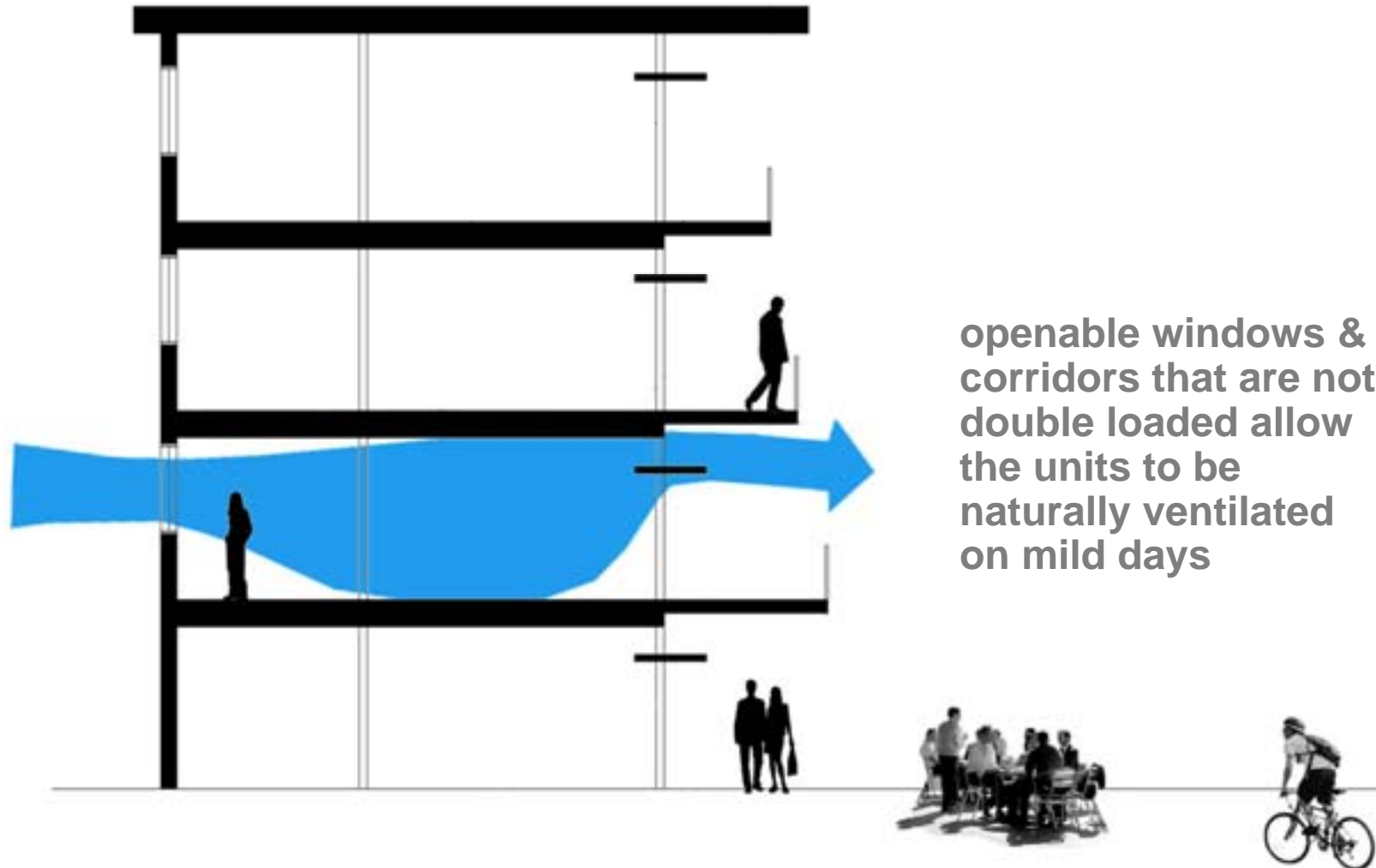


open space on the north allows access to daylight

# harnessing the wind

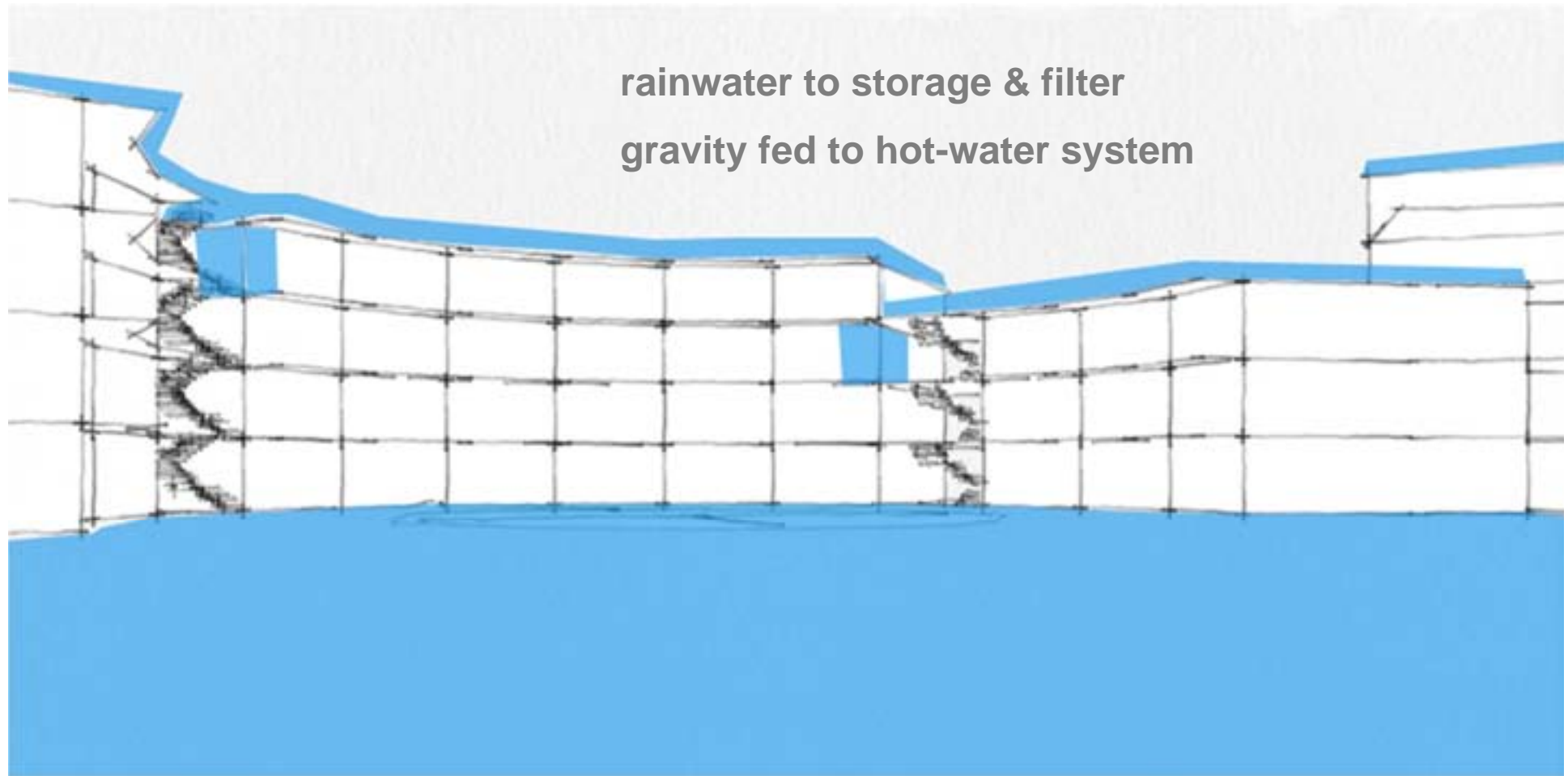


# harnessing the wind





# collecting rain



rainwater to storage & filter  
gravity fed to hot-water system

stormwater to natural reed beds then storage  
fed to toilets & food producing gardens

death rays



# landscape

## roof top gardens to:

- reduce city "heat island" effect
- reduce carbon dioxide impact
- Increase insulation
- remove nitrogen pollution in rain
- encourages eco-diversity

## plants for shading:

- deciduous plants exclude summer sun and shed their leaves in winter to let the sun through



## landscaped public space

## community garden

shared food production space

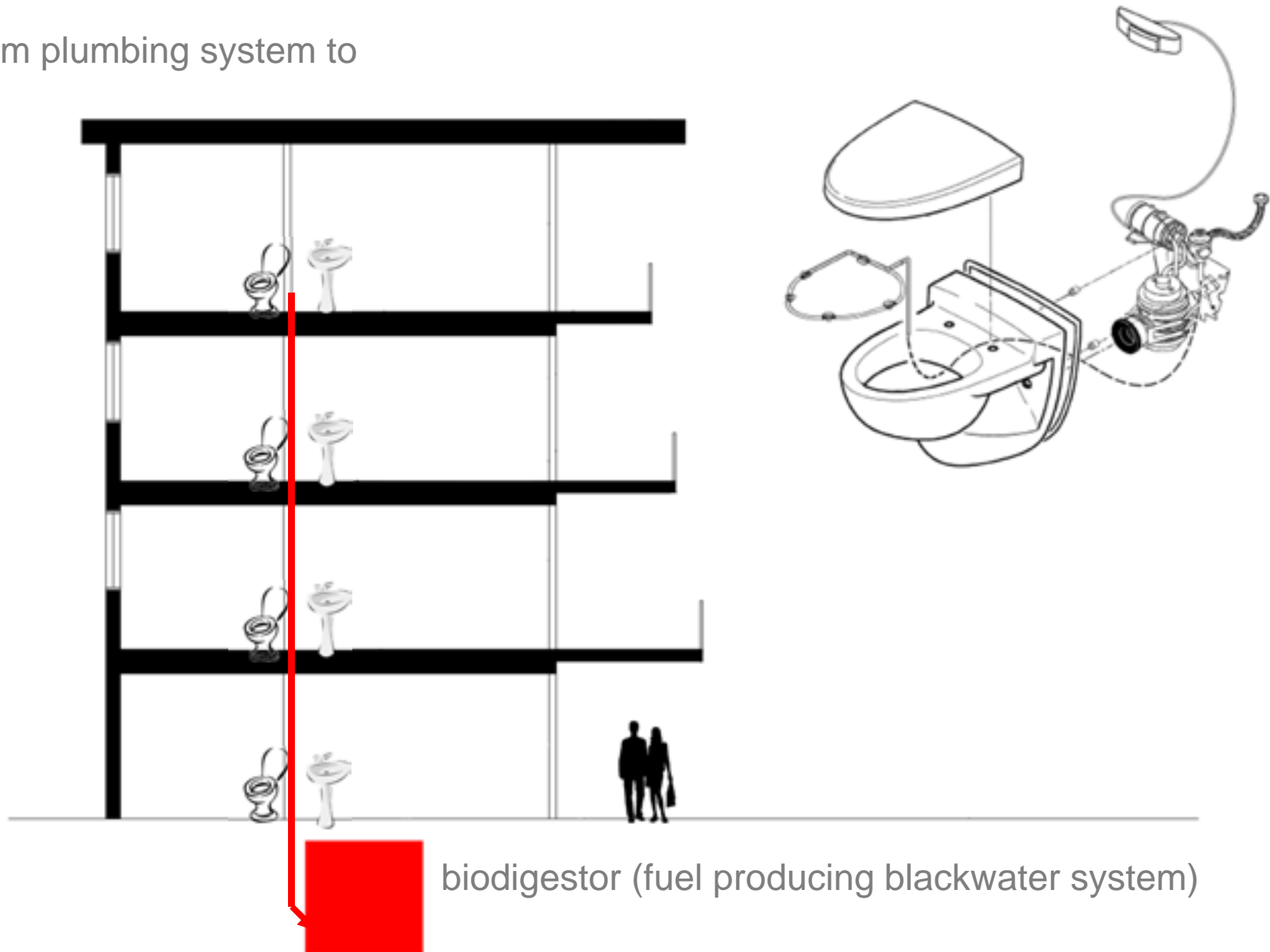
## rain gardens & reed beds:

remove pollutants from stormwater



# shared services

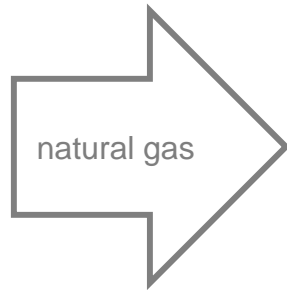
vacuum plumbing system to





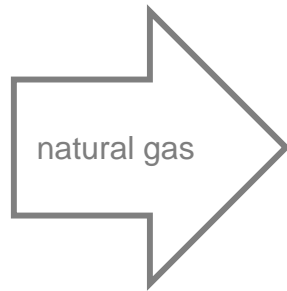
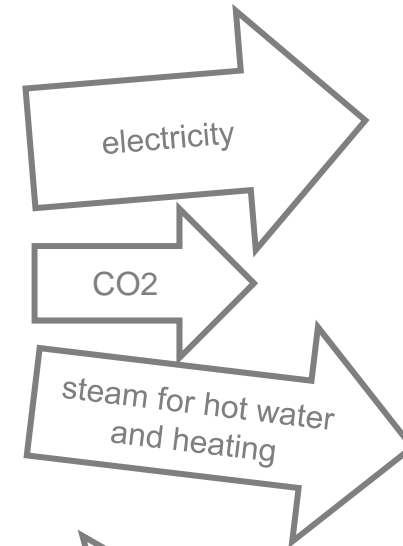
# shared services

equipment that provides more than 1 service



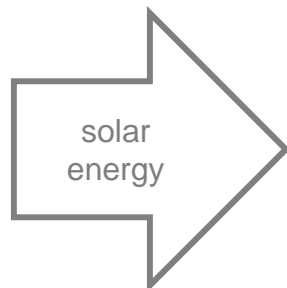
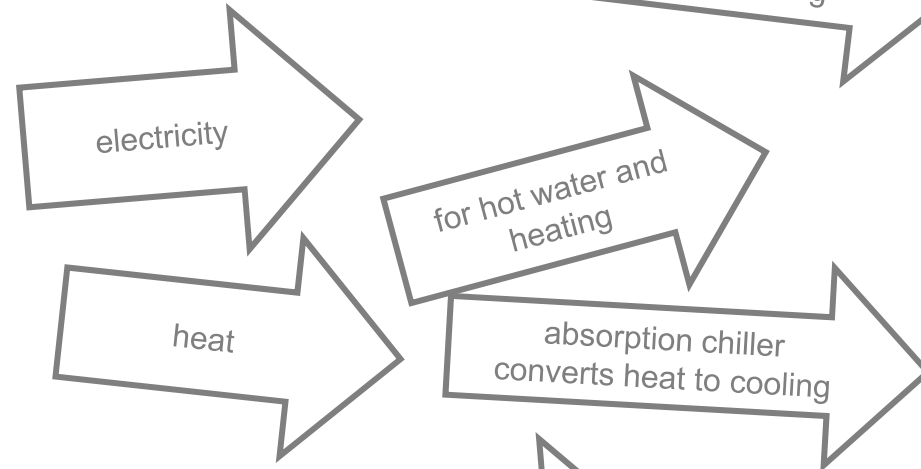
## fuel cells

– is a device that efficiently generates electricity from hydrogen rich fuels through a silent electrochemical reaction



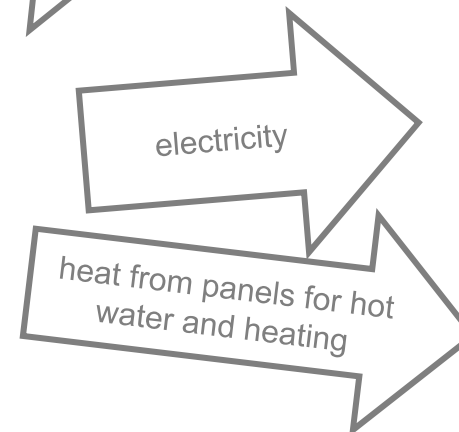
## trigeneration

– combustion unit



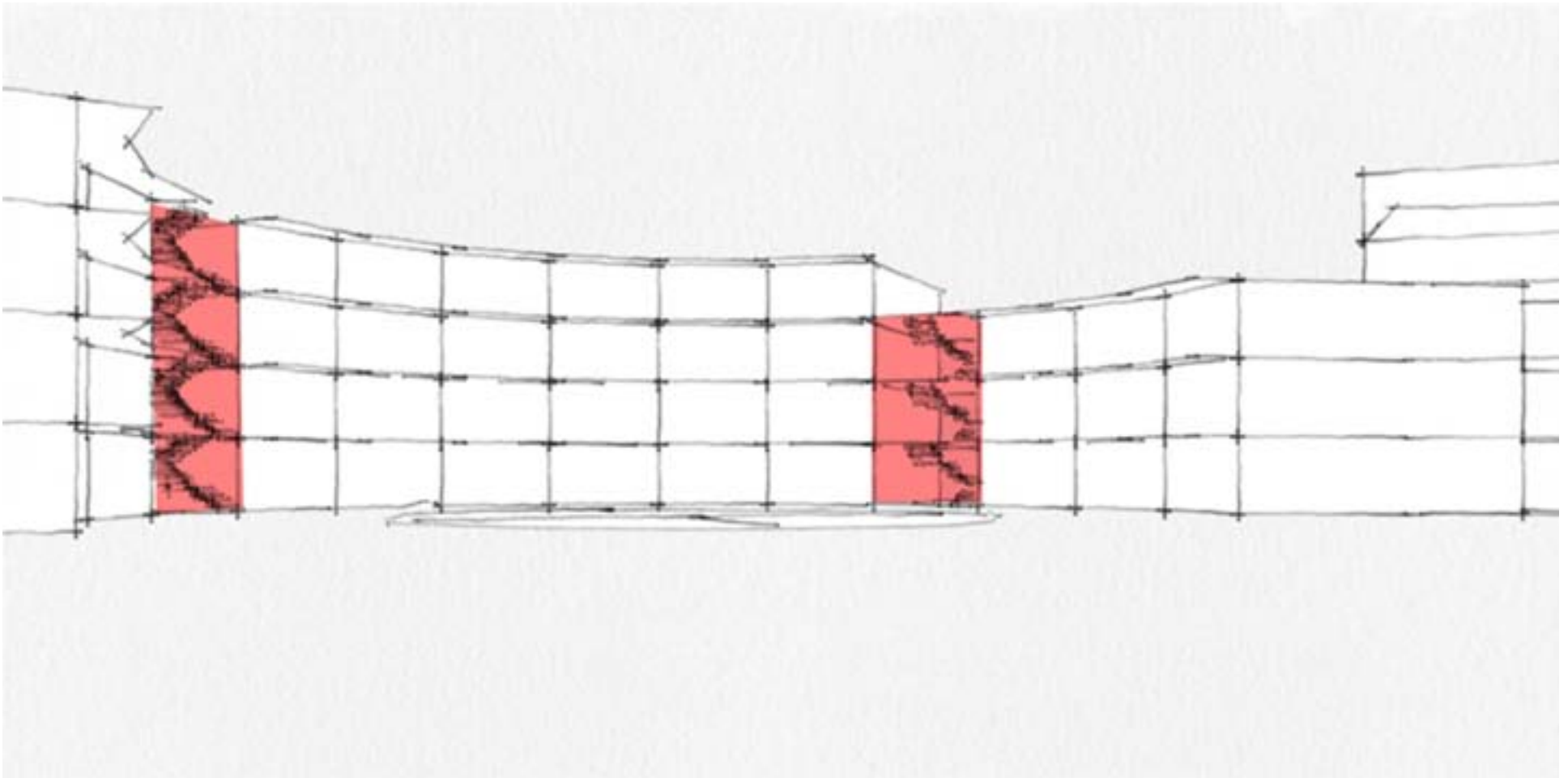
## hybrid photovoltaic panels

– panels that make use of light and heat energy from the sun



# shared services

services and access cores to units



# shared services

localised services every 2 floors to provide

hot water

heating & cooling system equipment

rainwater storage

blackwater treatment

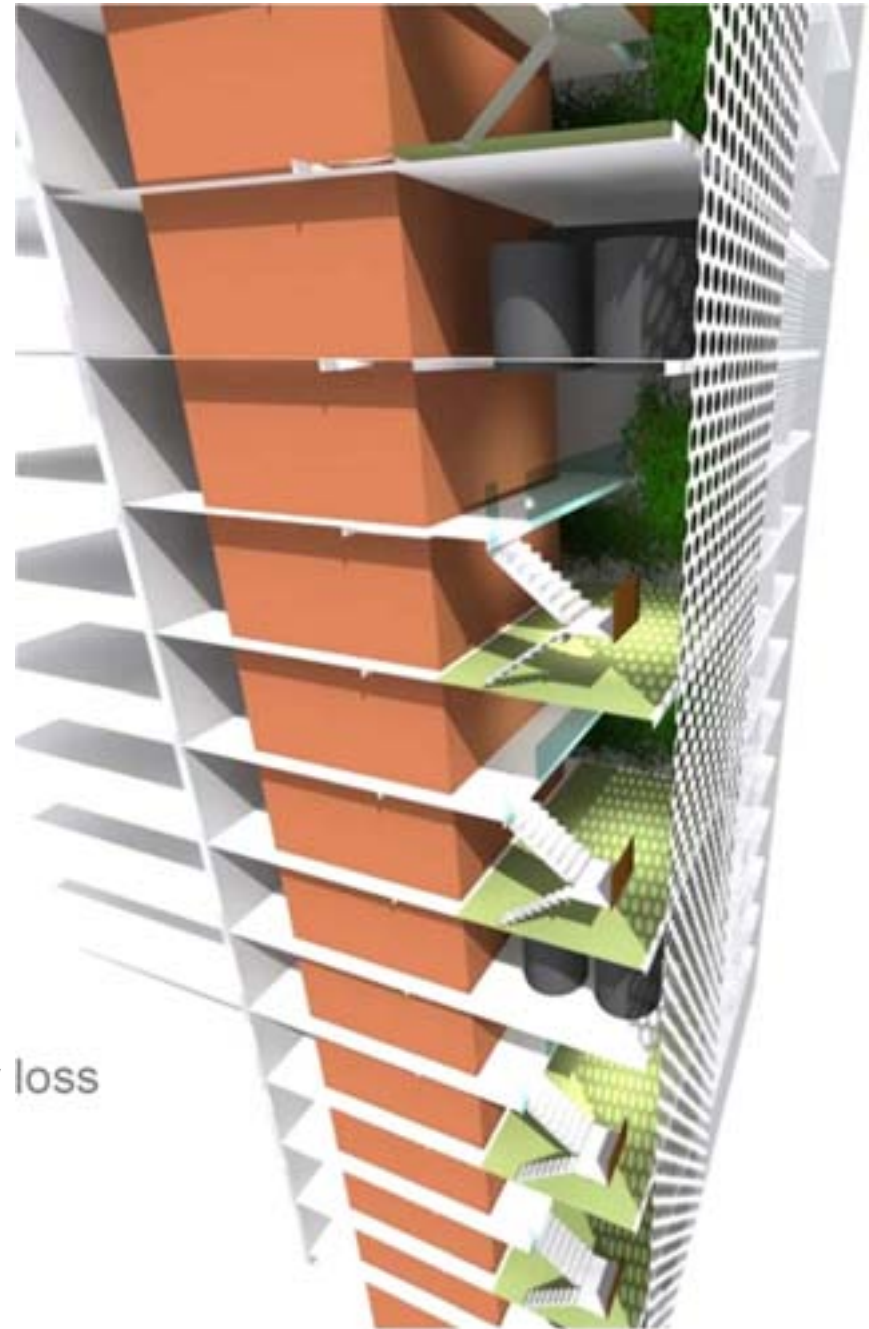
communal vegetable patch

organic composting / Wormfarm

shared green space

✓ easier maintenance access

✓ savings from reduced plumbing & energy loss



# education

## building monitoring system

monitor:

water  
electricity  
gas  
equipment  
waste

data acquisition  
and monitoring  
system



display in foyers and units and accessible webpage



power meters



gas meters



water meters



services equipment

facility manager



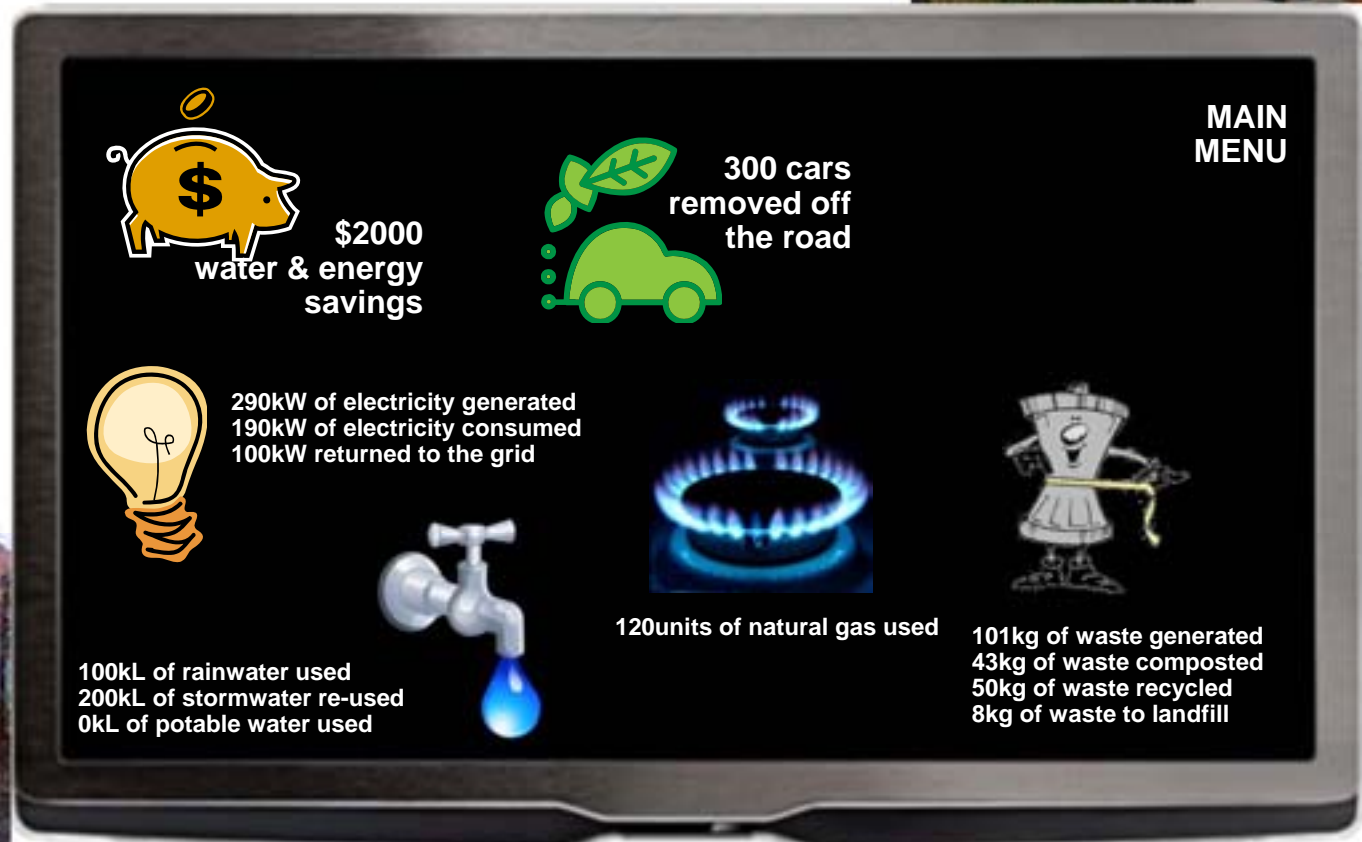
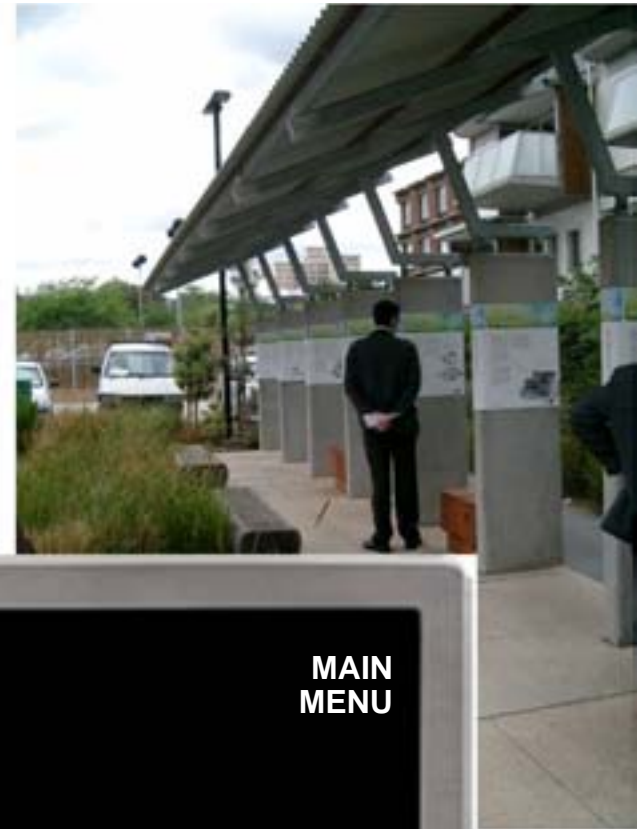
# built-in efficiency





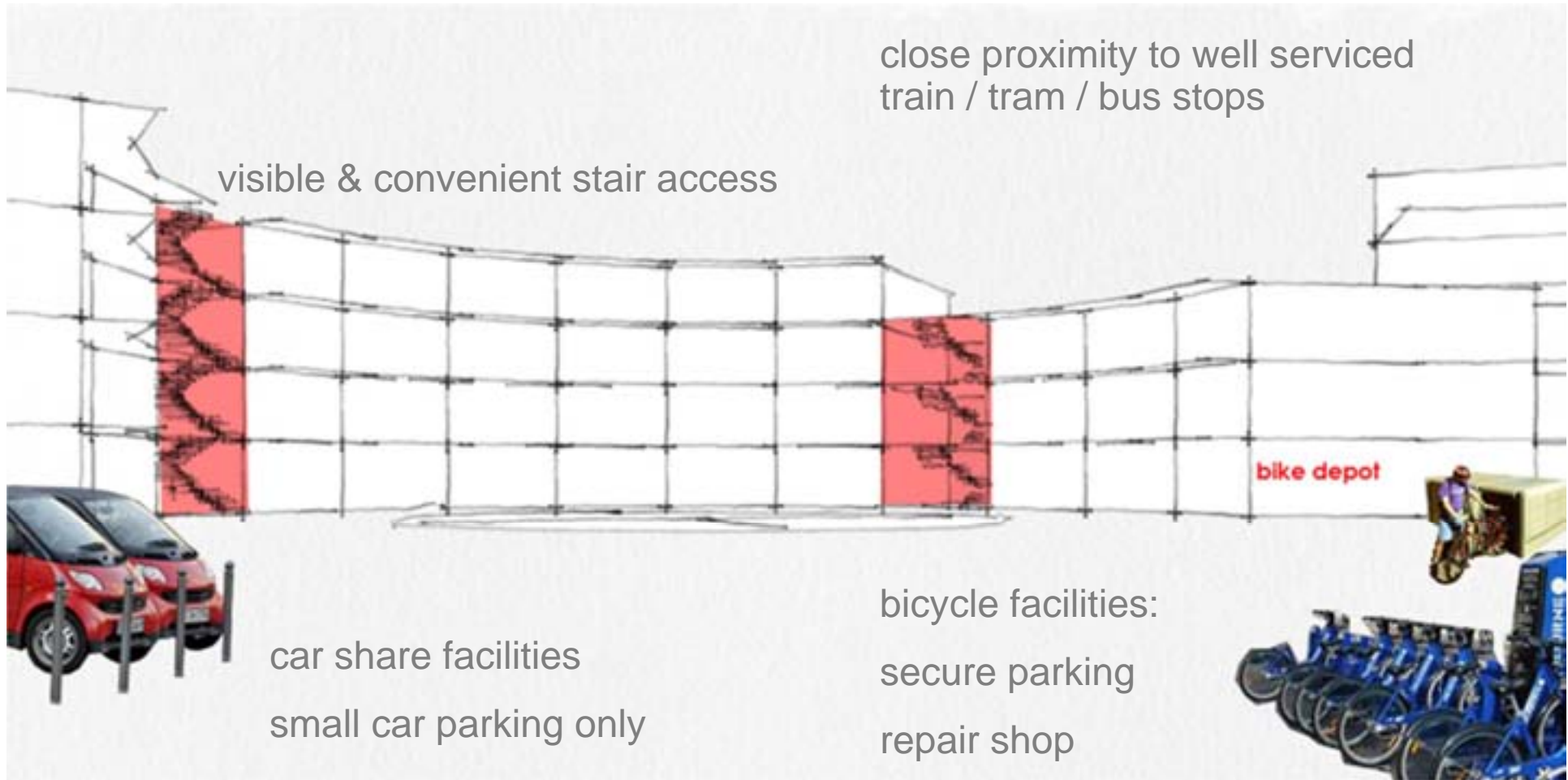
# education

information panels throughout the development  
highlighting design features



# education

## encourage sustainable transport modes



close proximity to well serviced  
train / tram / bus stops

visible & convenient stair access

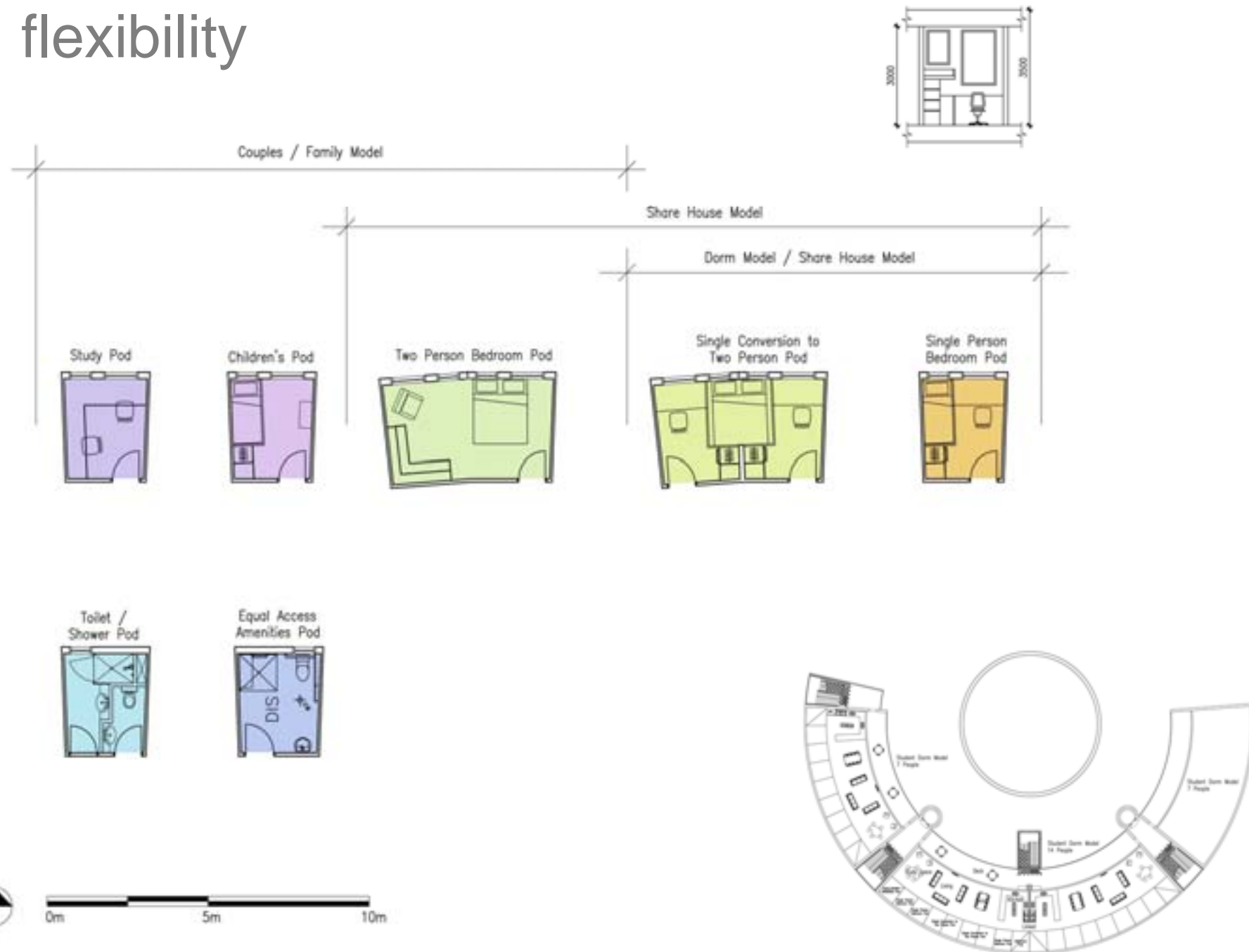
bike depot

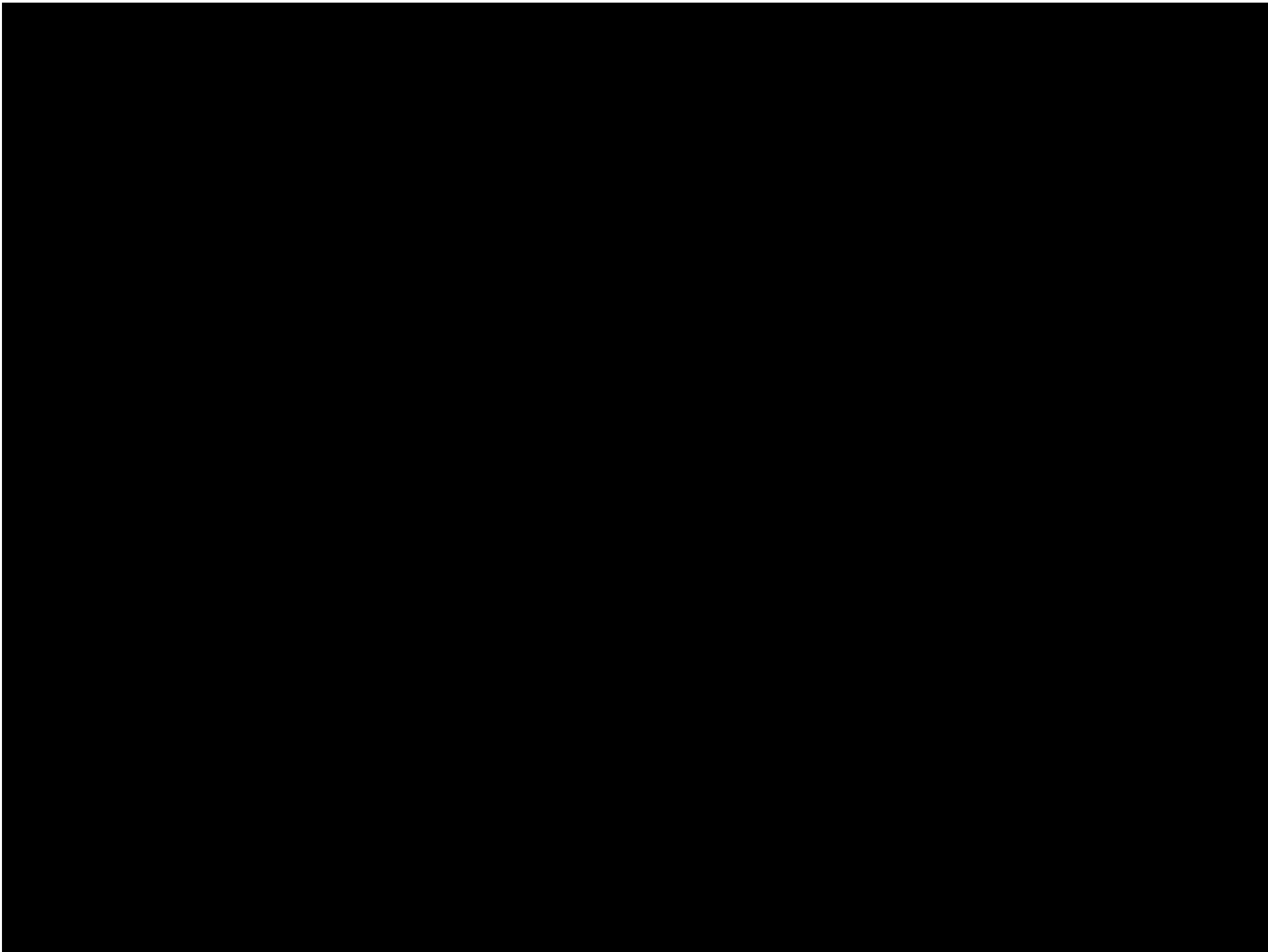
car share facilities  
small car parking only

bicycle facilities:  
secure parking  
repair shop

convenient visitor parking  
short trip bike rental service

# flexibility





flexibility





flexibility



# arboretum

**a place where an extensive variety of woody plants are cultivated for scientific, educational, and ornamental purposes.**

**In basic terms – a collection of trees.**

# the arboretum



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