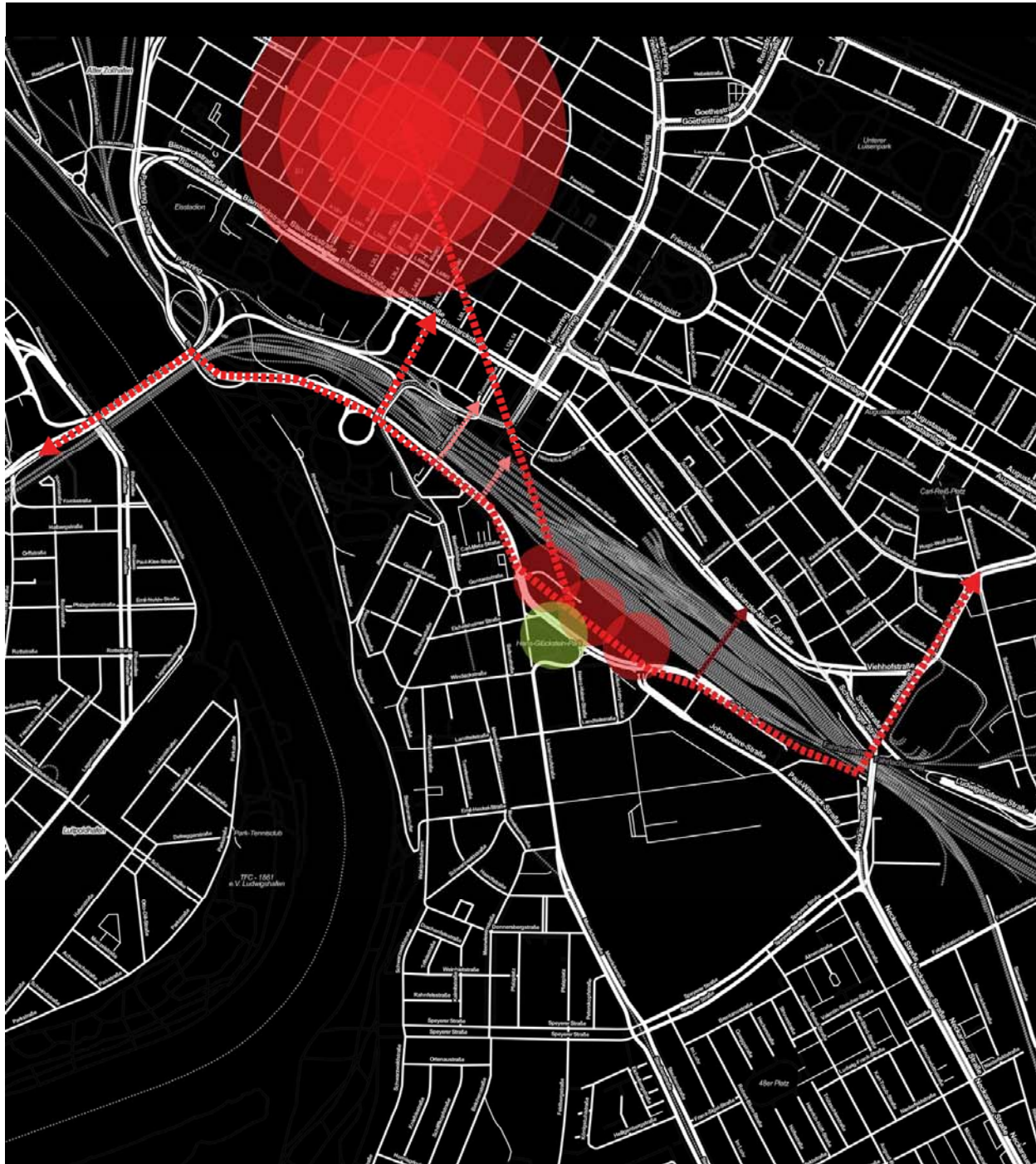


# SECRET GARDEN

ISOVER Multi-Comfort House Students Contest, Edition 2013: Vision and Reality - Glückstein Quarter

Ivo-Sven Riet | Anna Temmo | Estonia | Third prize



## OBSERVATIONS

distance from city center - 1,5 km

connections to city center:

- large car bridges over railway
- car tunnel
- pedestrian tunnel
- pedestrian bridge

comfortable access by car

poor access for pedestrians and cyclists

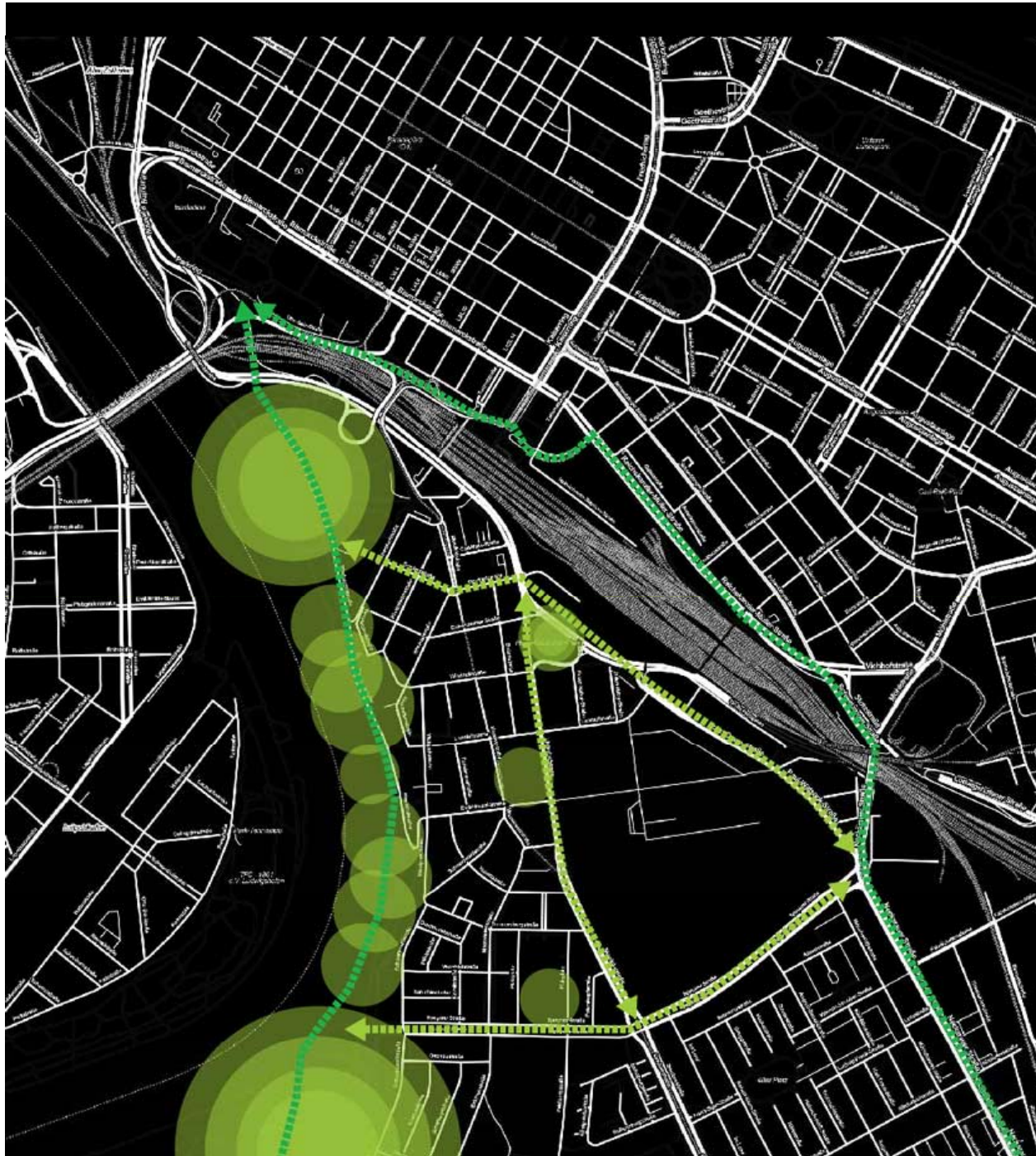
new tram line will improve the situation

## CONCLUSION

developed area will serve habitants living south from the railway

connection to city center





## OBSERVATIONS

- is situated between two large green areas
- several smaller parks in the area
- 0.5 km away from green promenade
- inbetween two main cycling paths

## CONCLUSION

- lacks "urban parks"
- connecting existing cycling paths

green areas

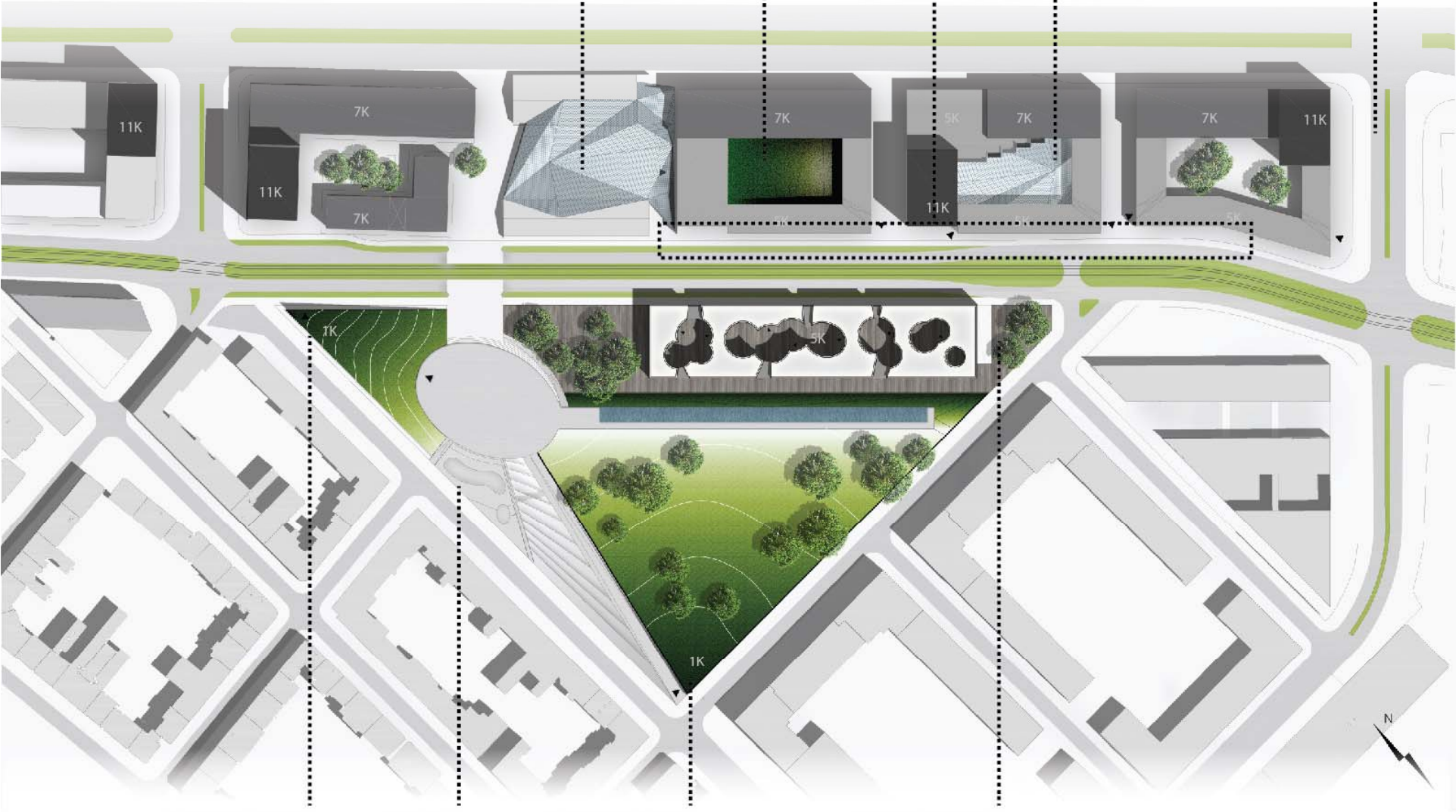
GLASS ROOF BETWEEN EXISTING BUILDINGS  
CONFERENCE CENTER ENTRANCE

CONFERENCE CENTER

CAFE AREA

RETAIL

COMMON PARKING FOR BUSINESS AREA  
ca 400 spaces



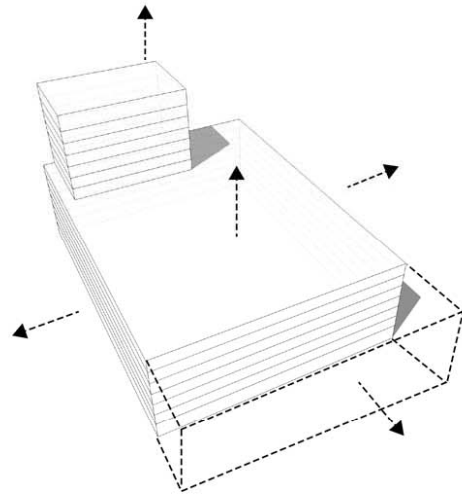
COMMUNITY CENTER

SKATEPARK

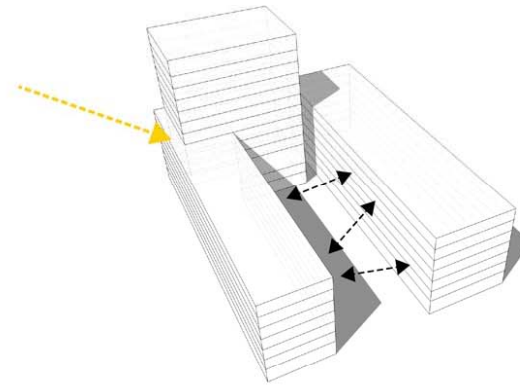
SPORTS FACILITY AND  
EQUIPMNET RENT

APARTMENT BUILDING  
UNDERGROUND PARKING max 178

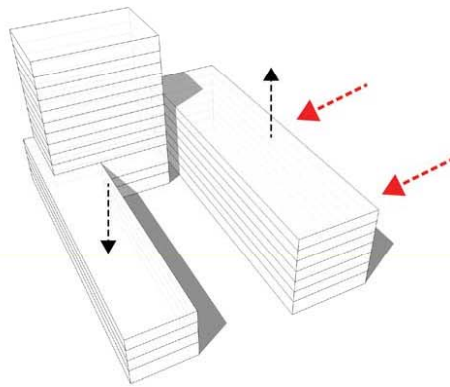




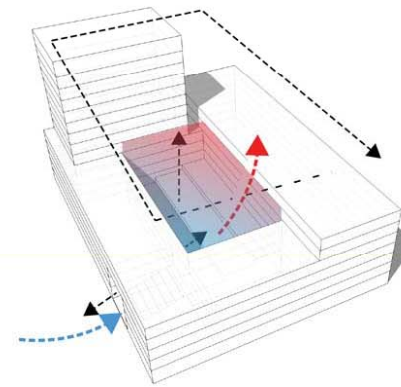
maximum volume



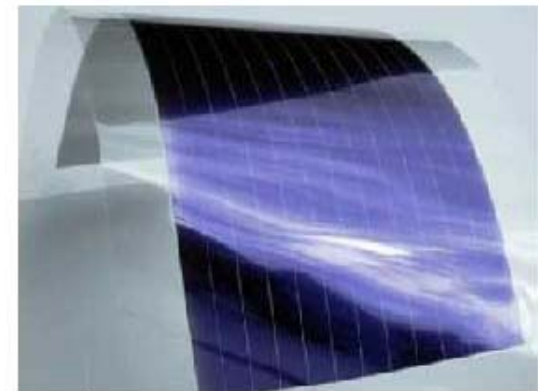
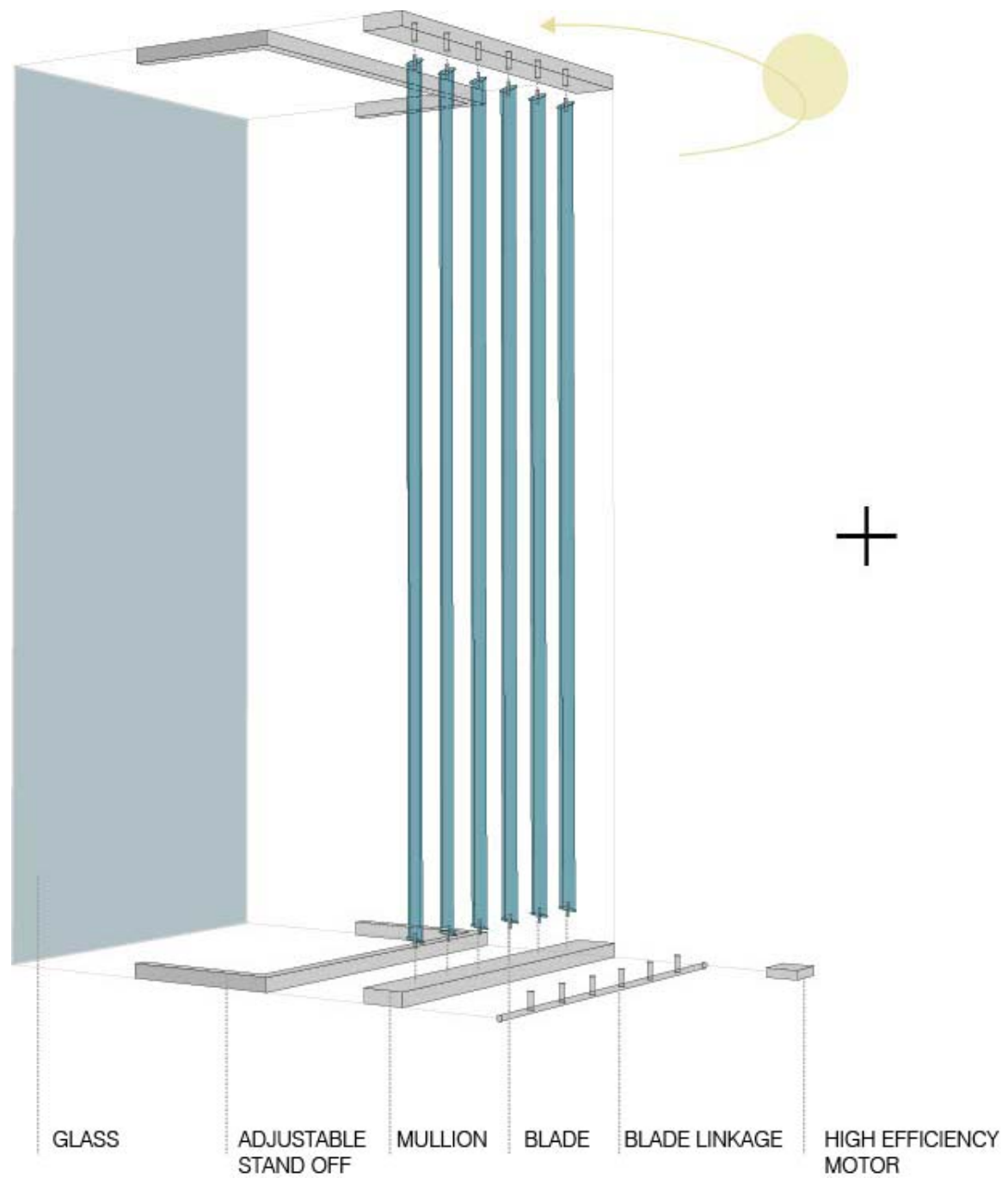
better lighting conditions



acoustics



internal communication



BUILDING INTEGRATED THIN PV FILM

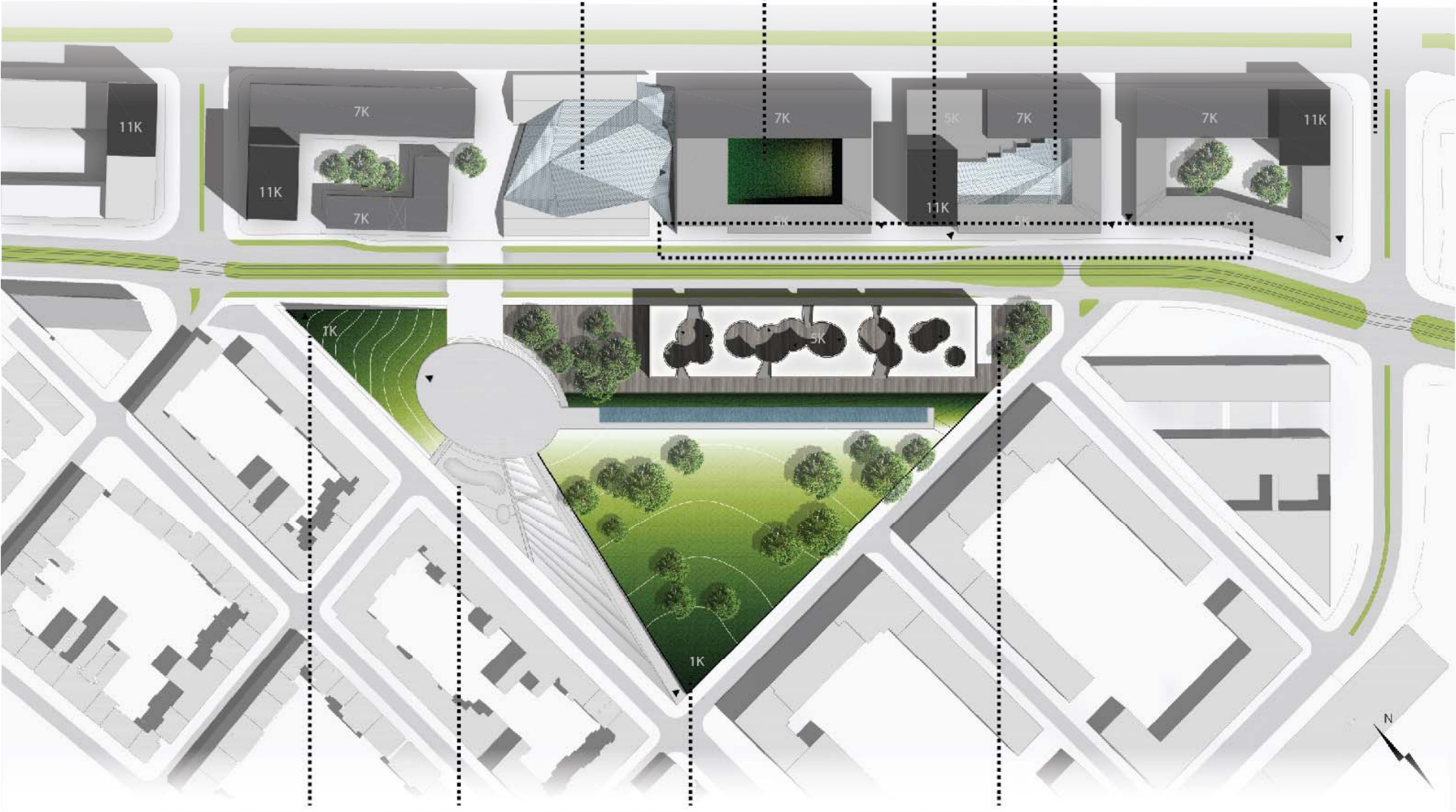
GLASS ROOF BETWEEN EXISTING BUILDINGS  
CONFERENCE CENTER ENTRANCE

CONFERENCE CENTER

CAFE AREA

RETAIL

COMMON PARKING FOR BUSINESS AREA  
ca 400 spaces



COMMUNITY CENTER

SKATEPARK

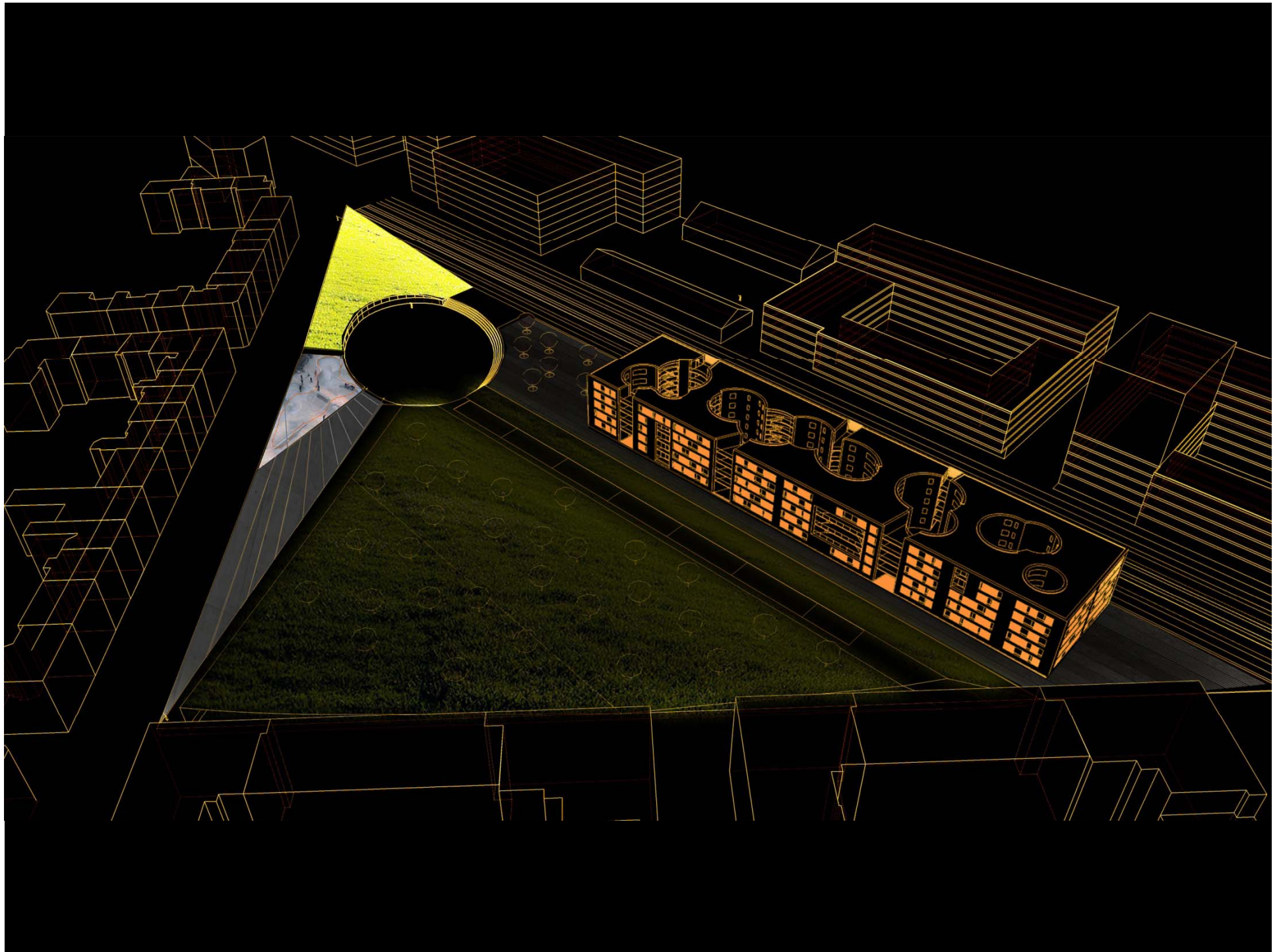
SPORTS FACILITY AND  
EQUIPMNET RENT

APARTMENT BUILDING  
UNDERGROUND PARKING max 178

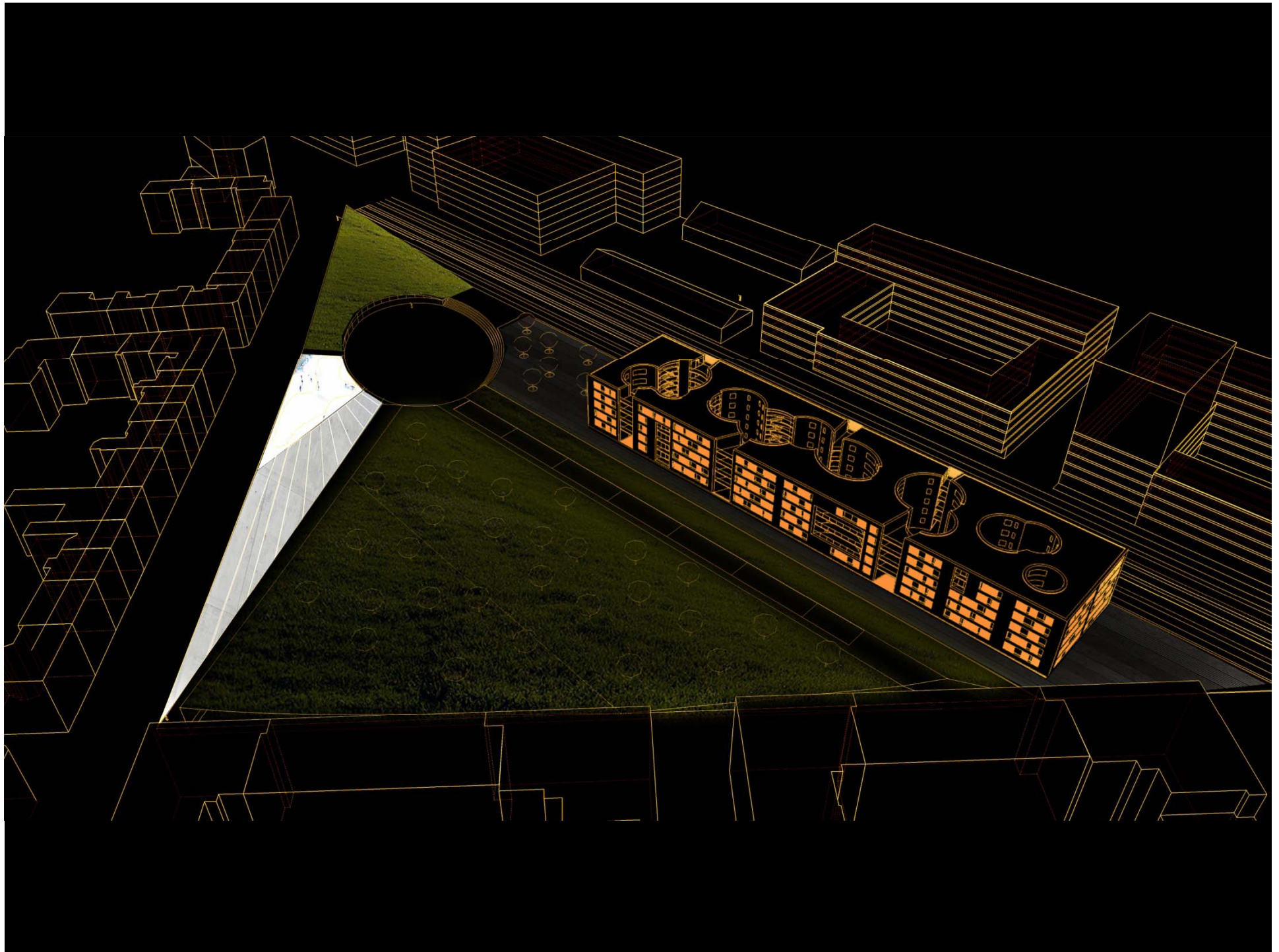




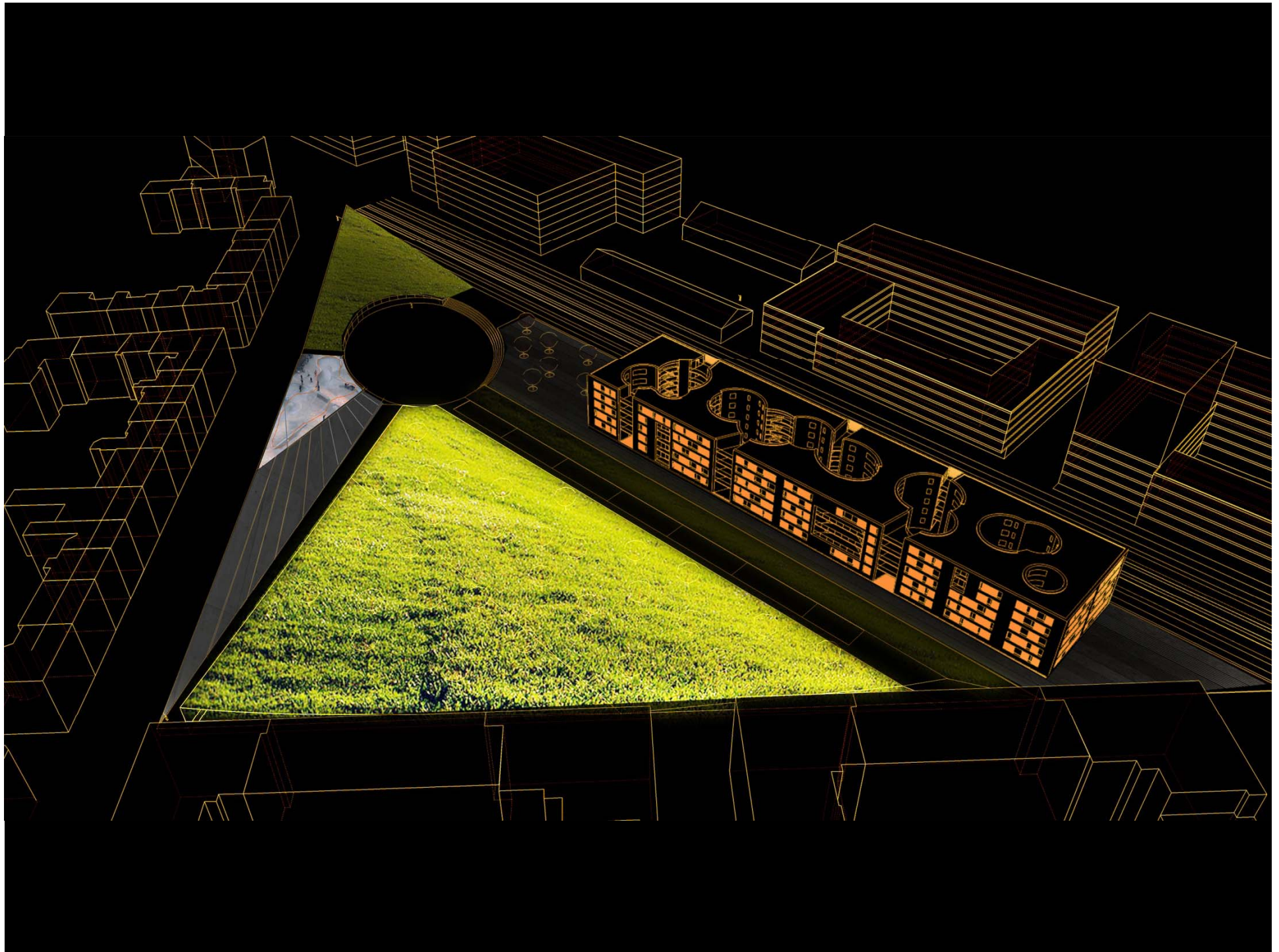




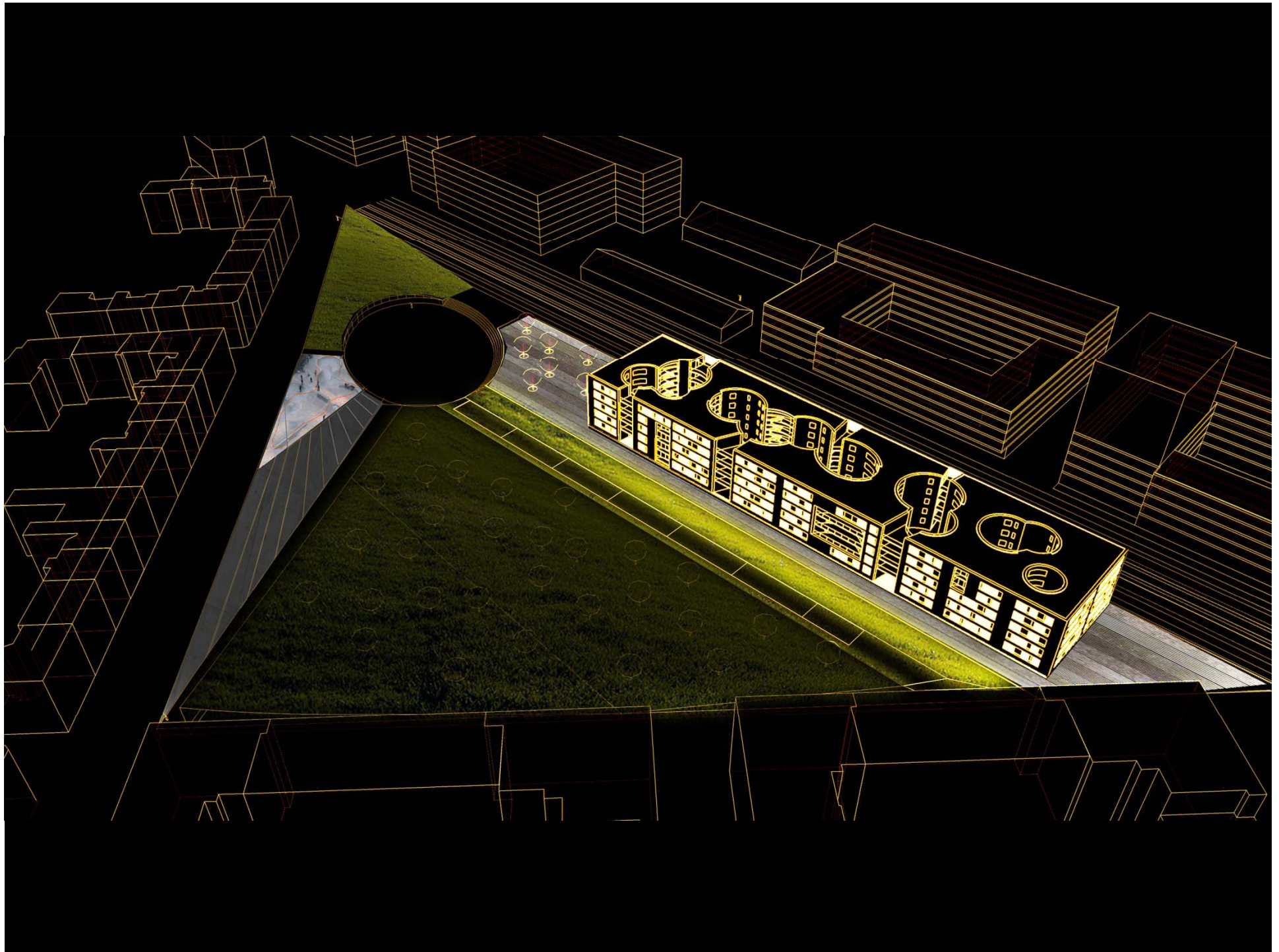






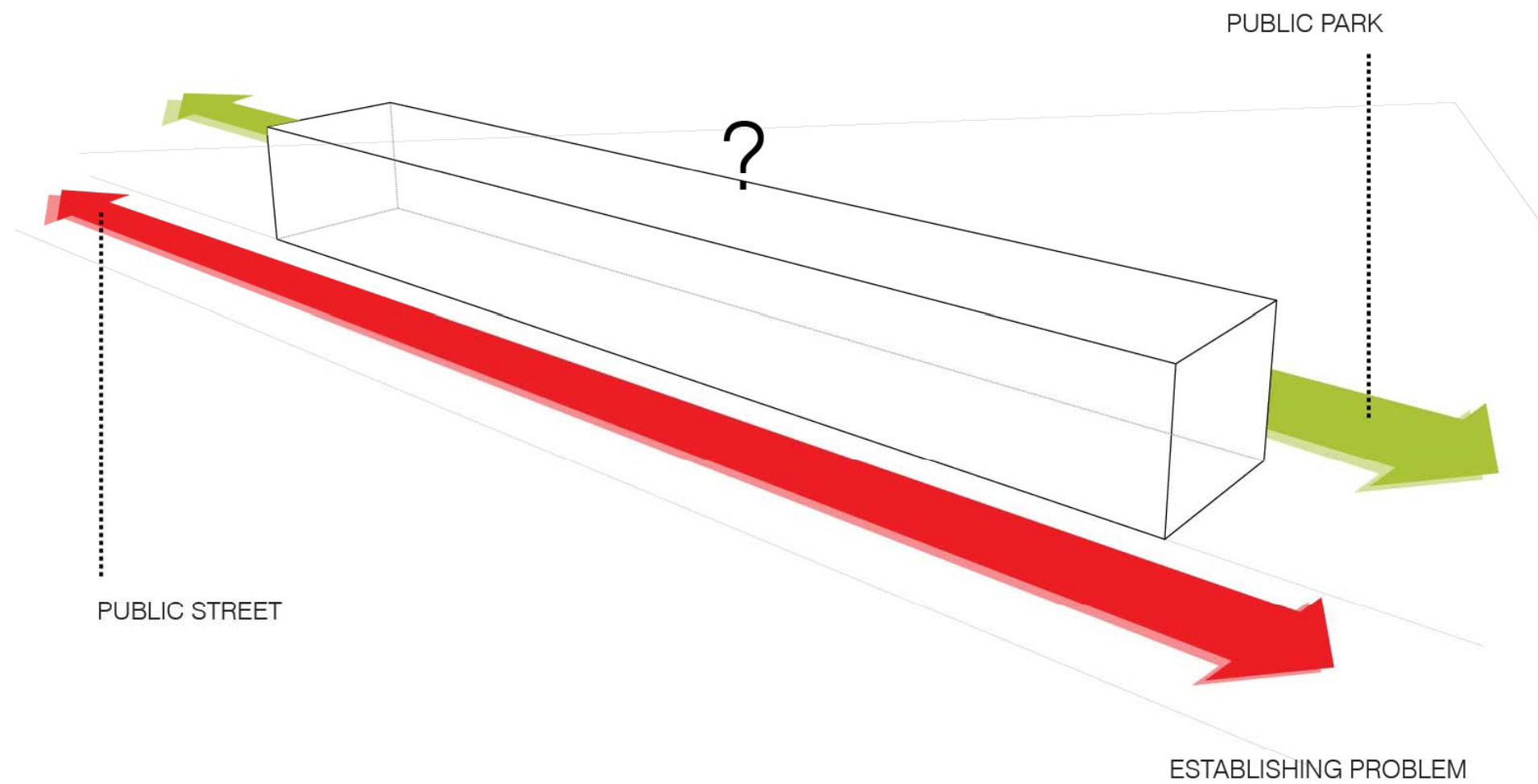




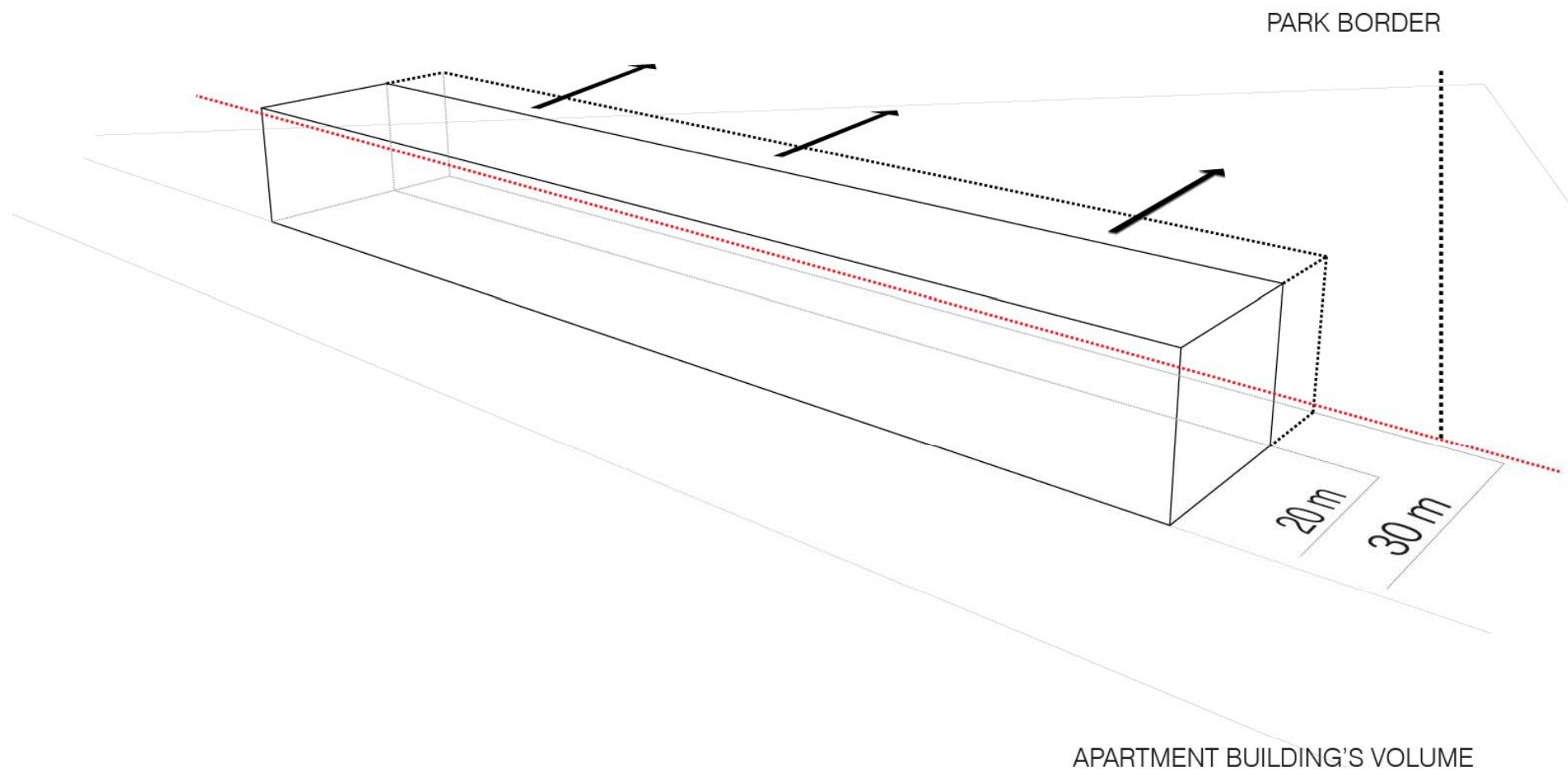


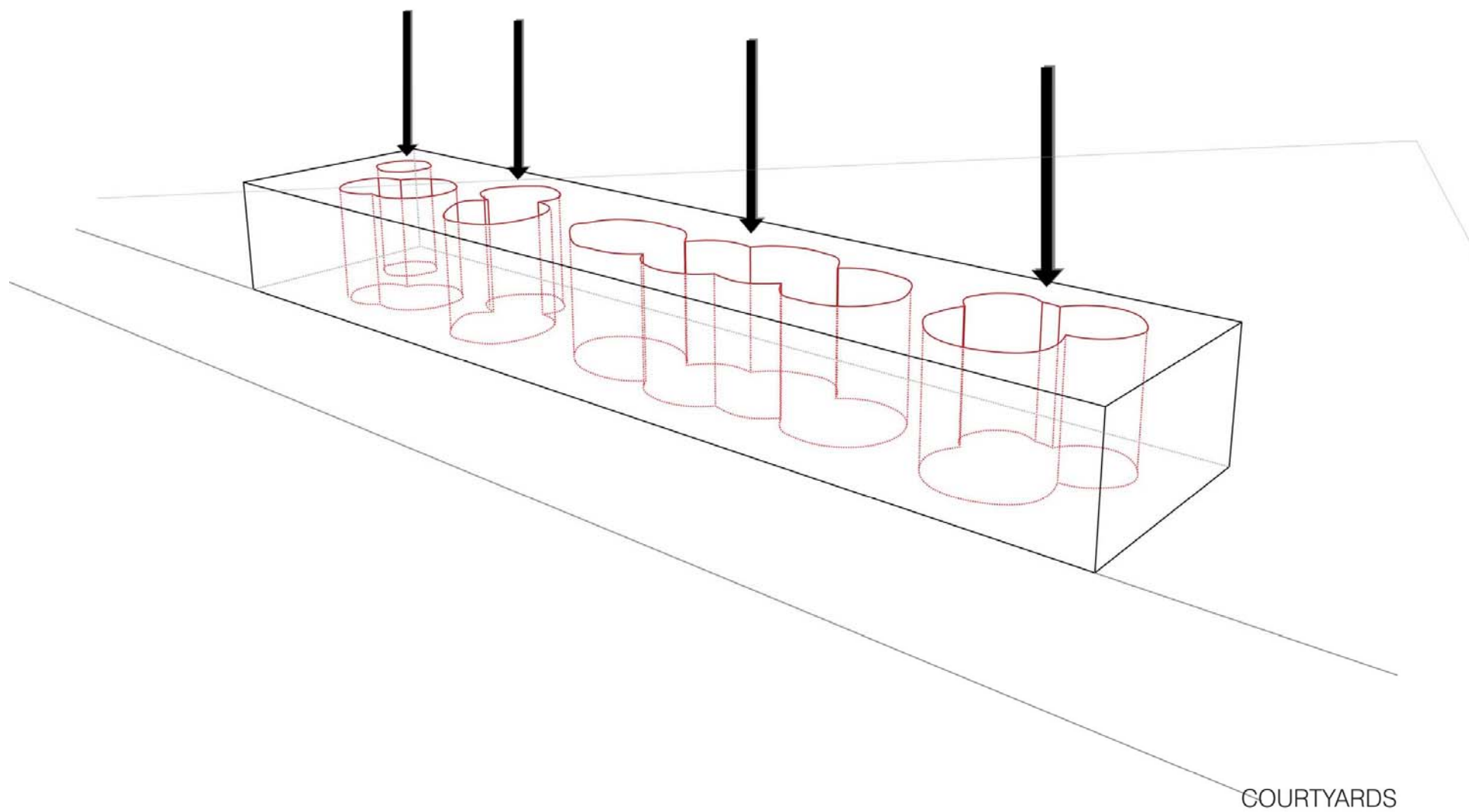


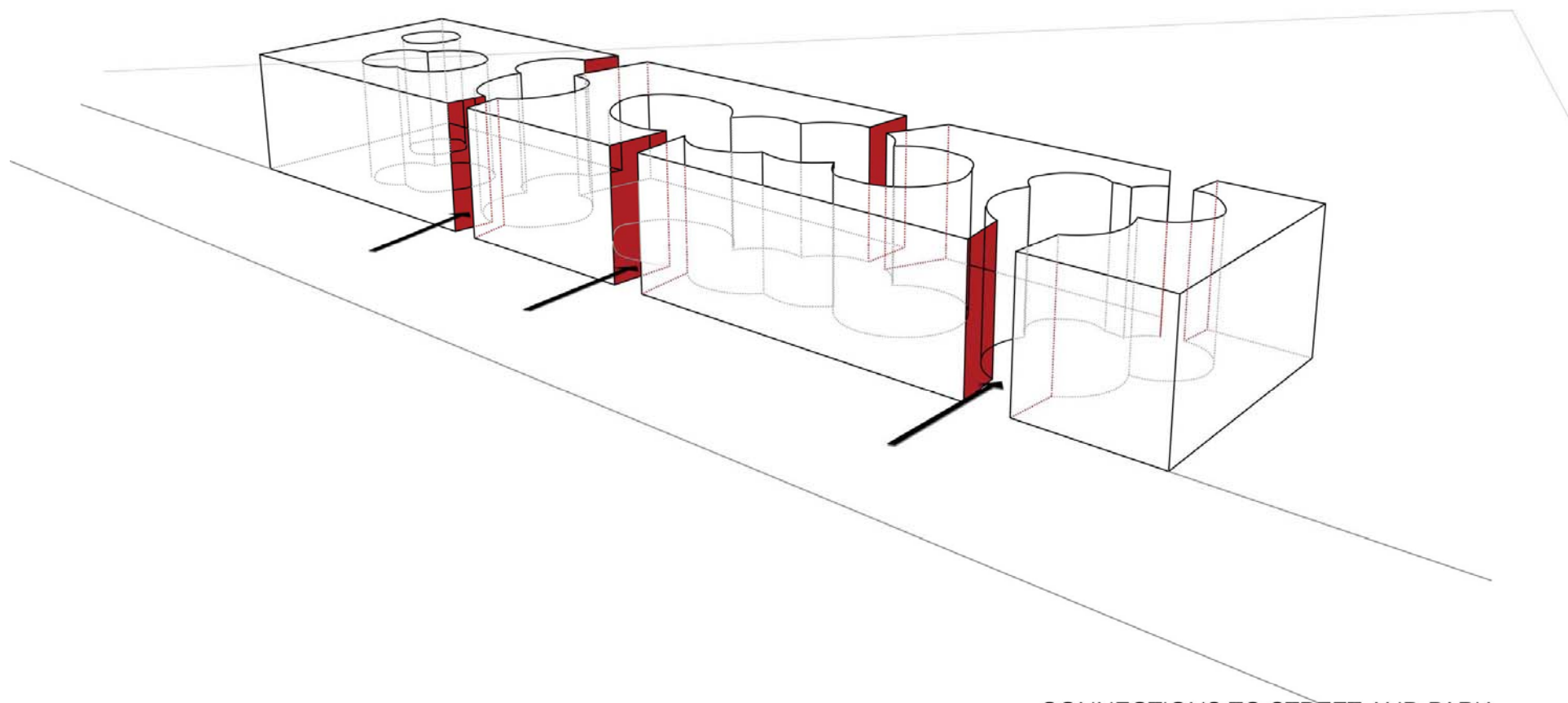






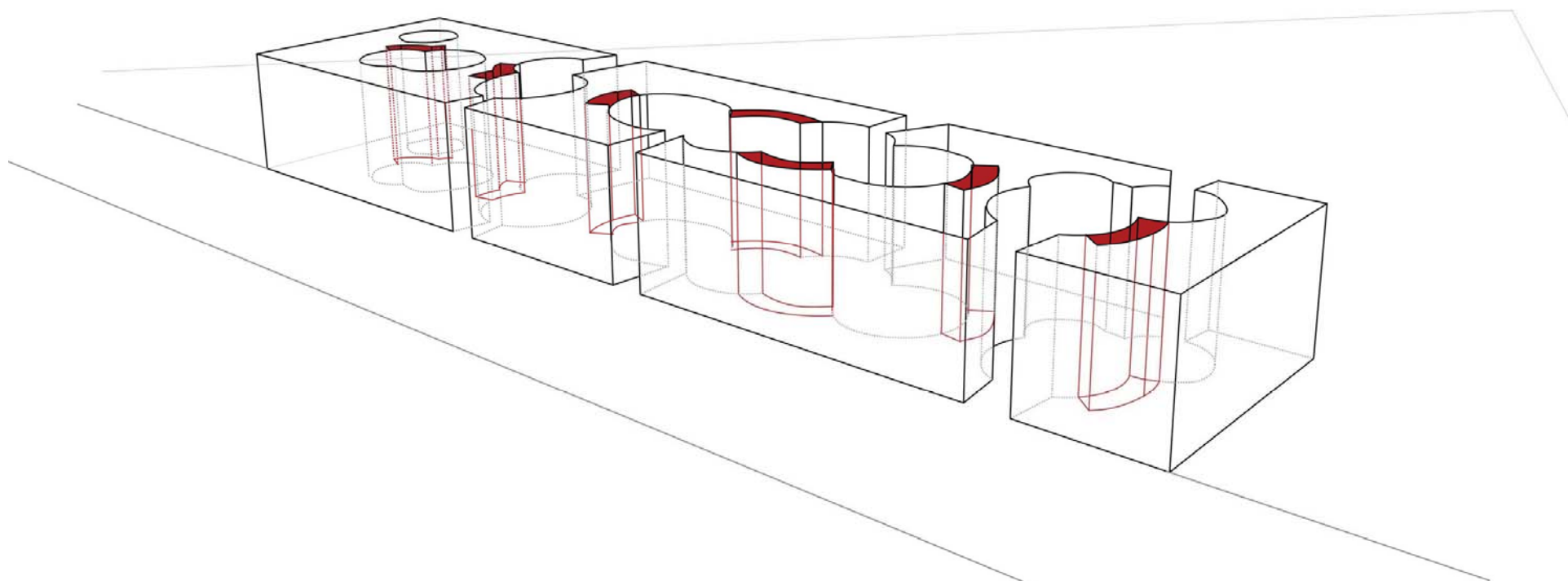






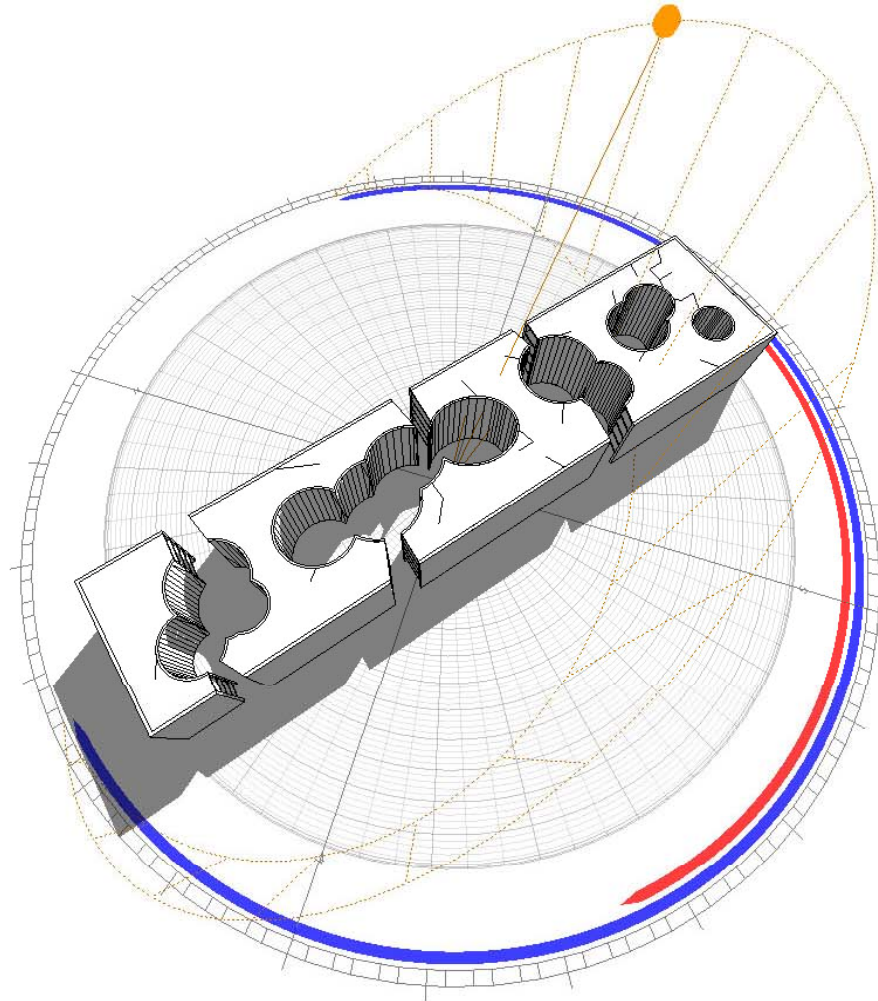
CONNECTIONS TO STREET AND PARK



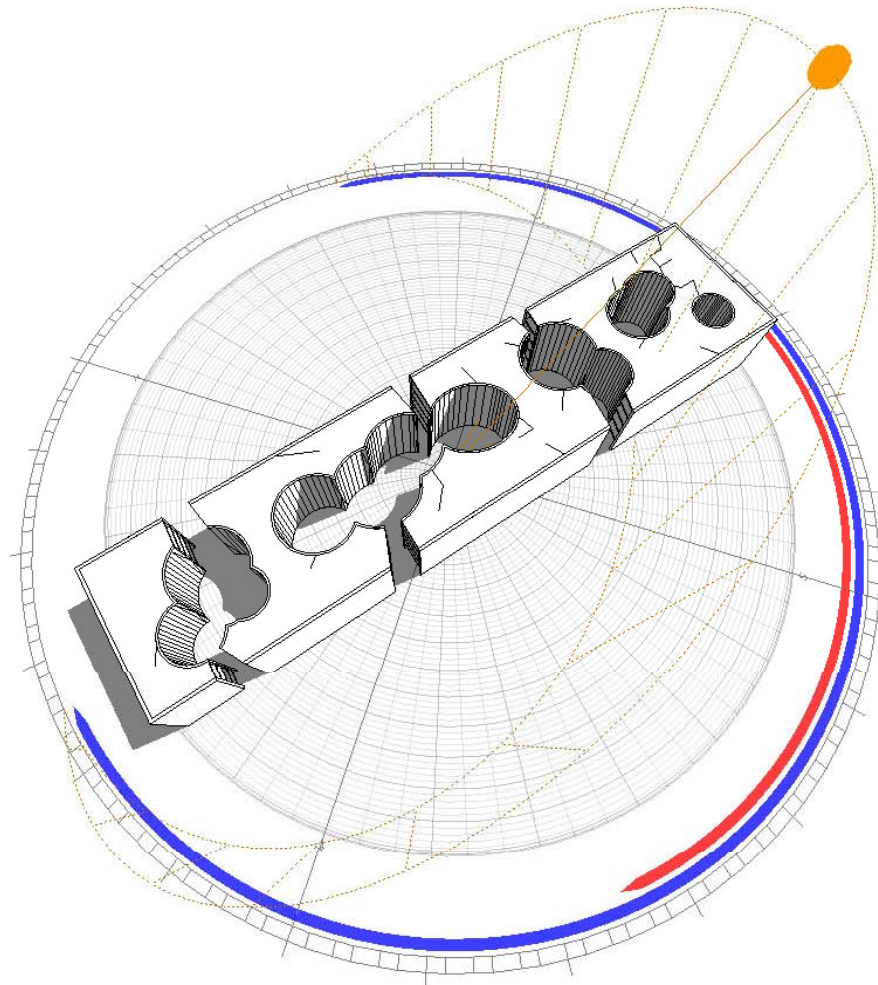


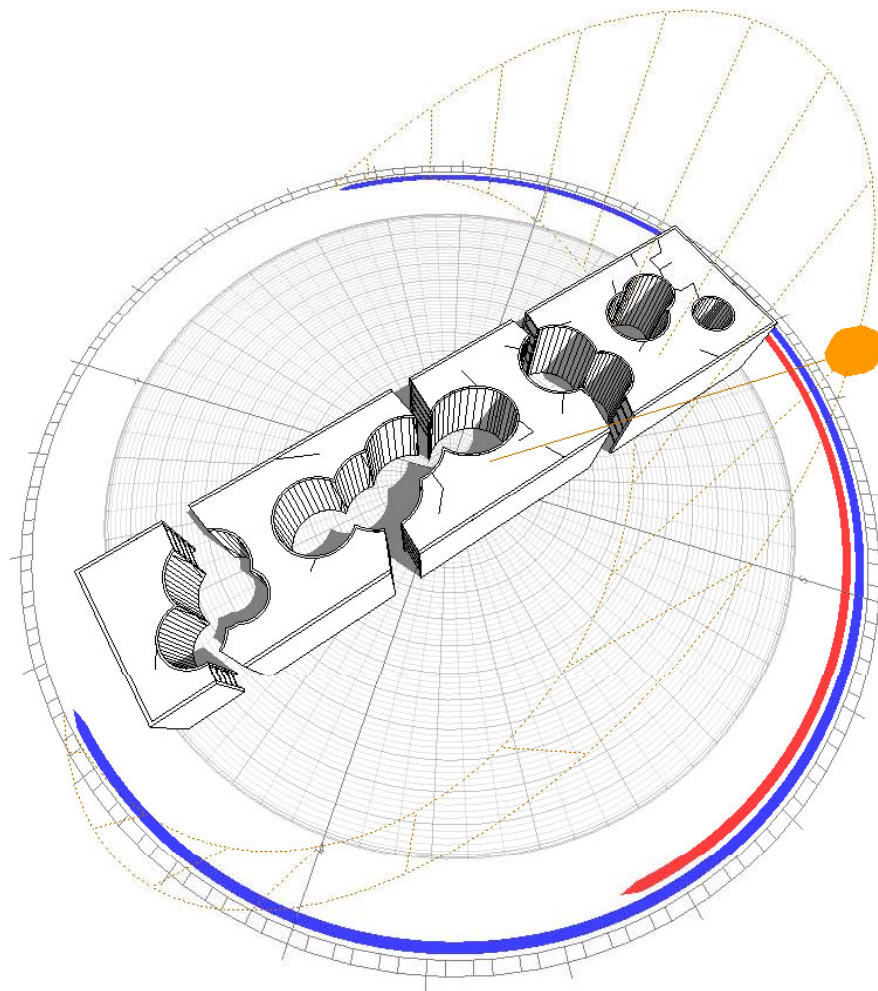
INTERNAL COMMUNICATION

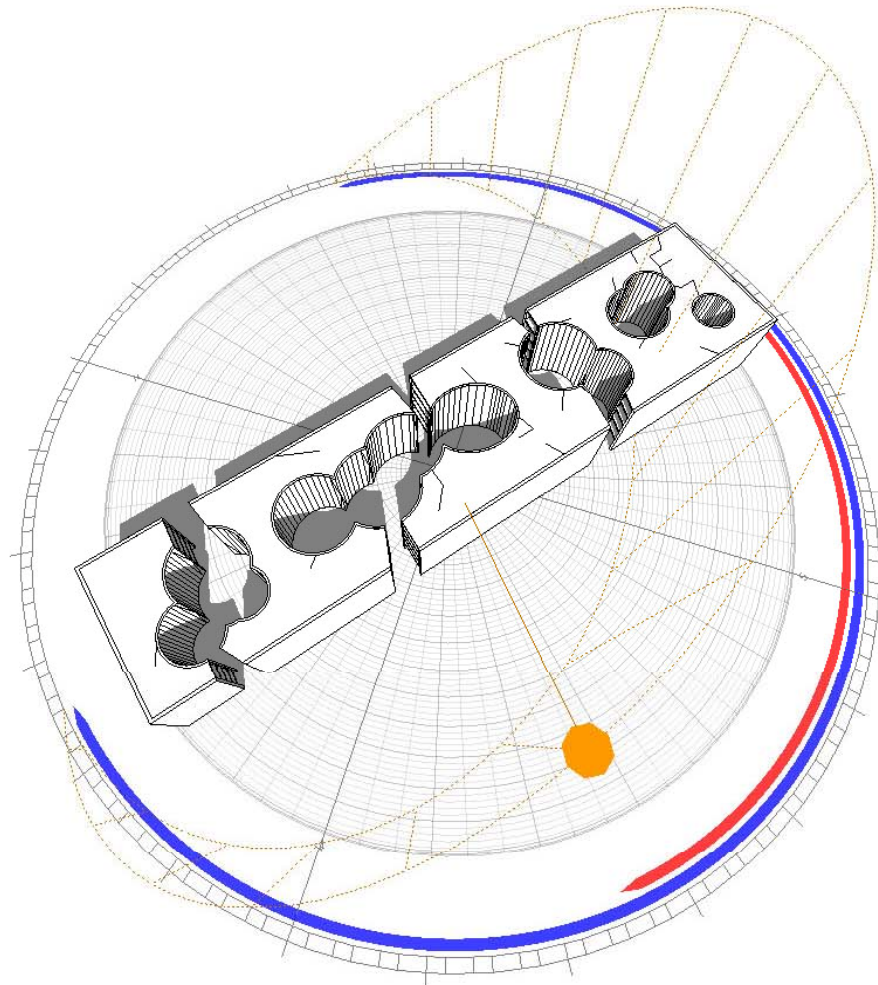




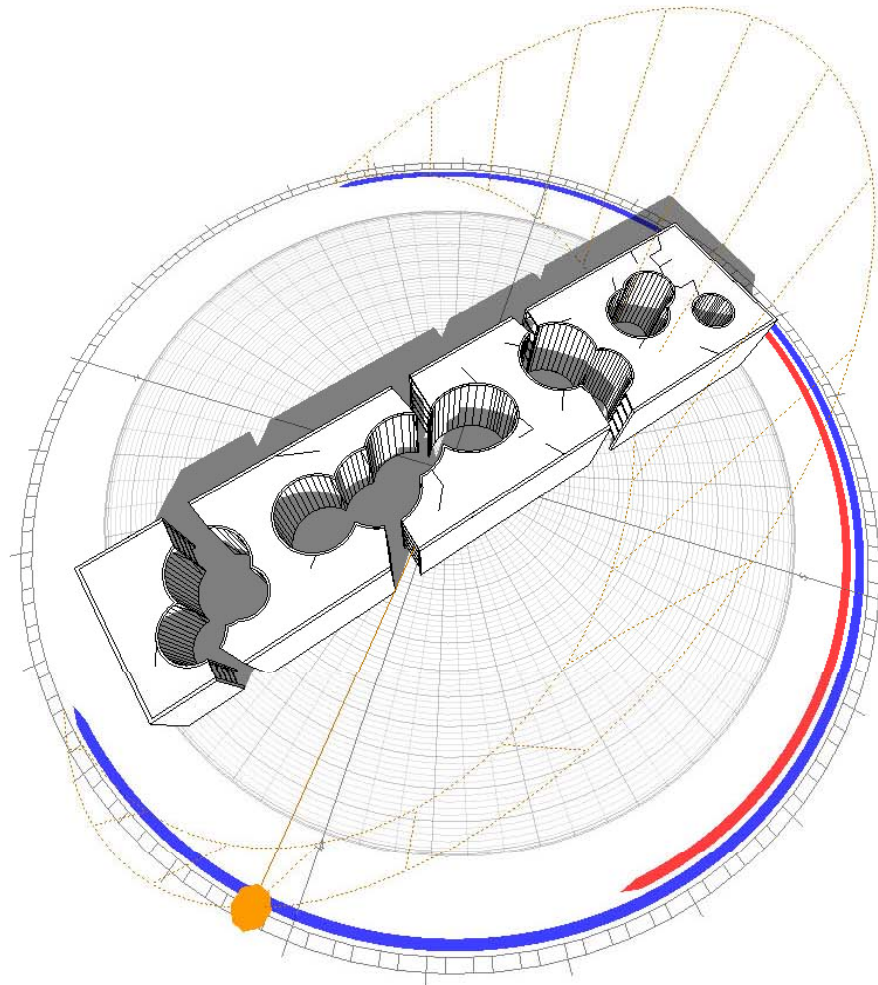




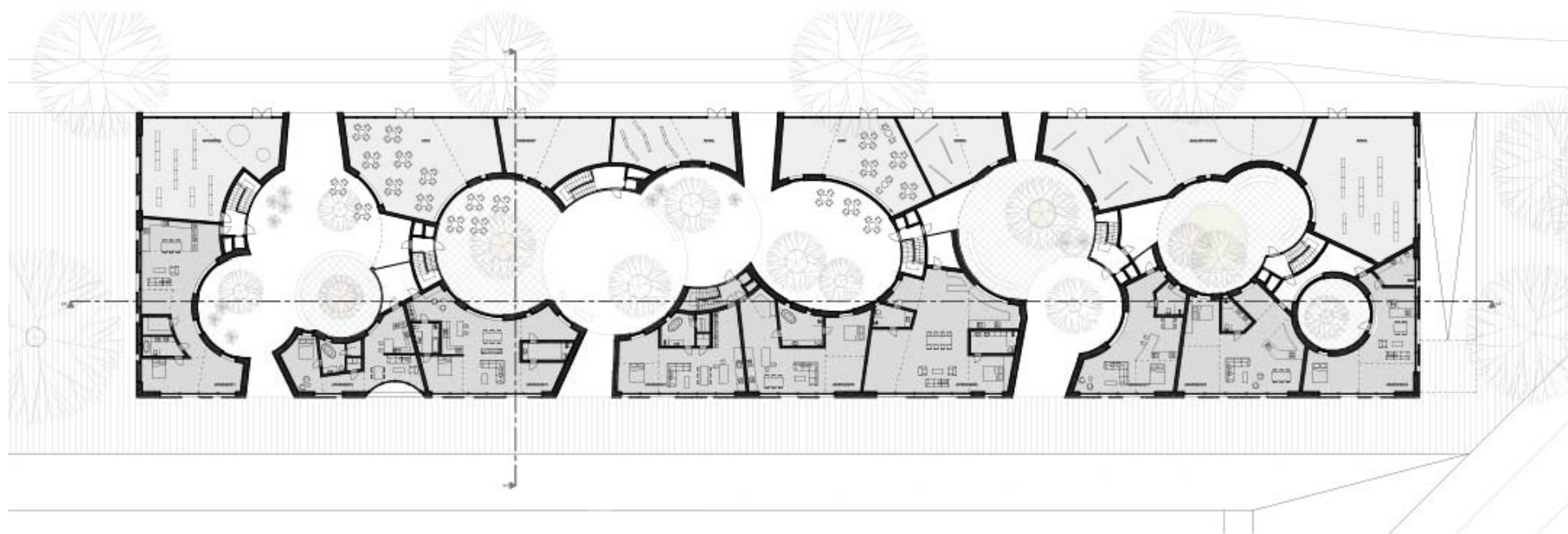






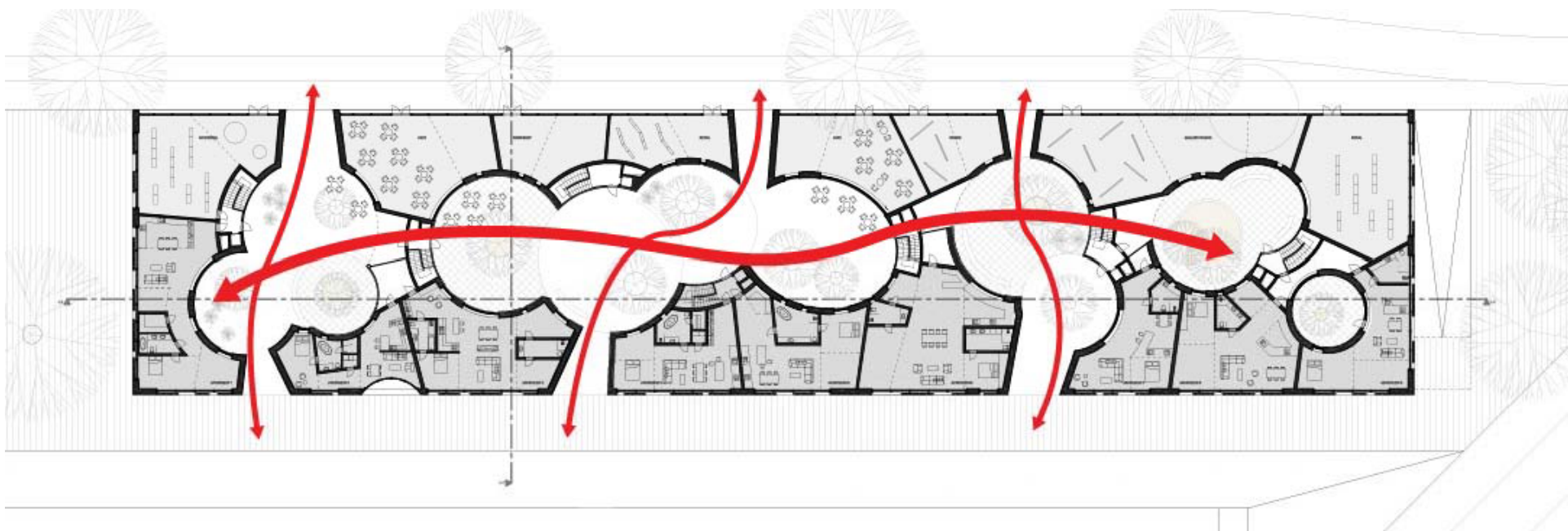


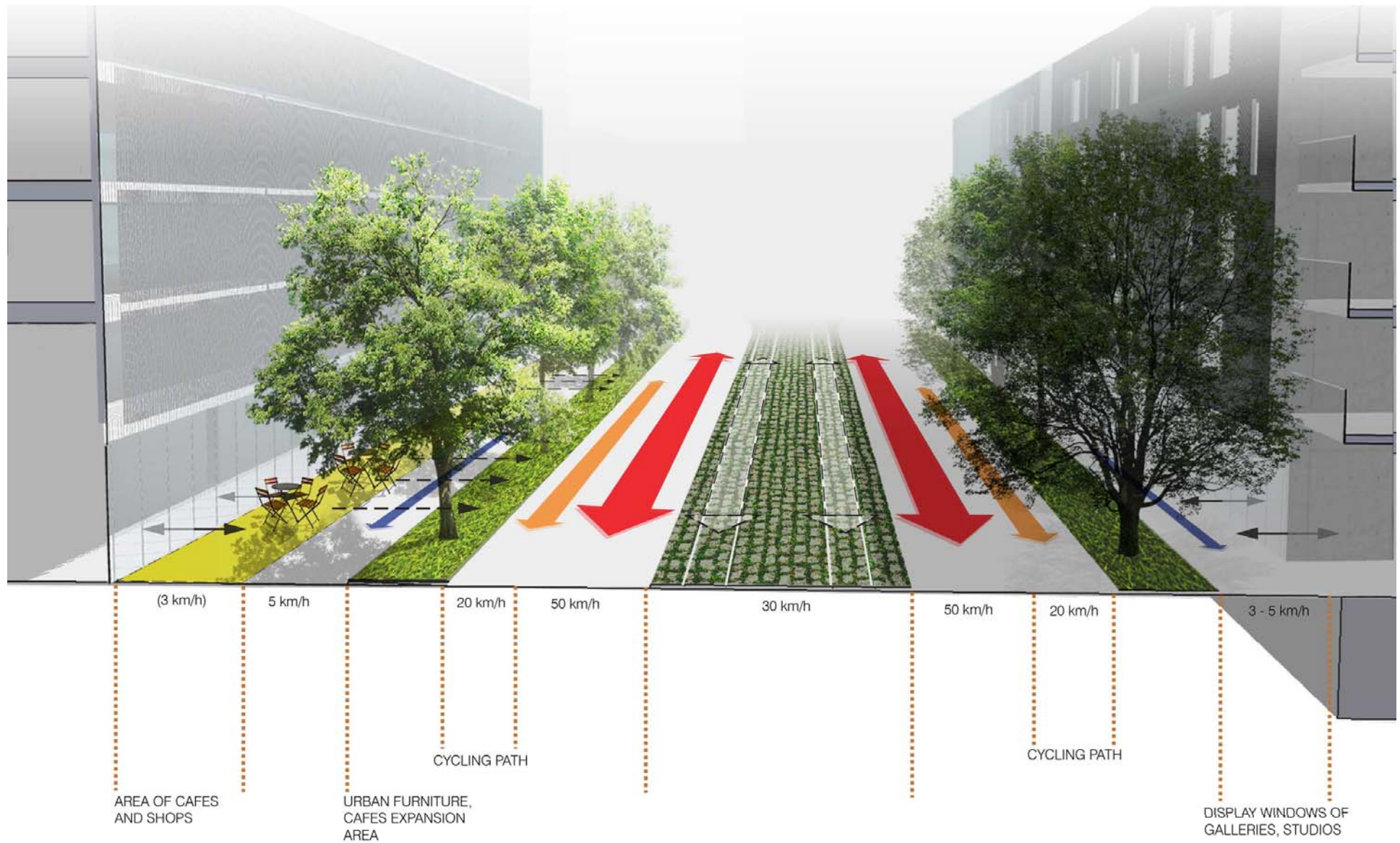
PUBLIC STREET



PUBLIC PARK



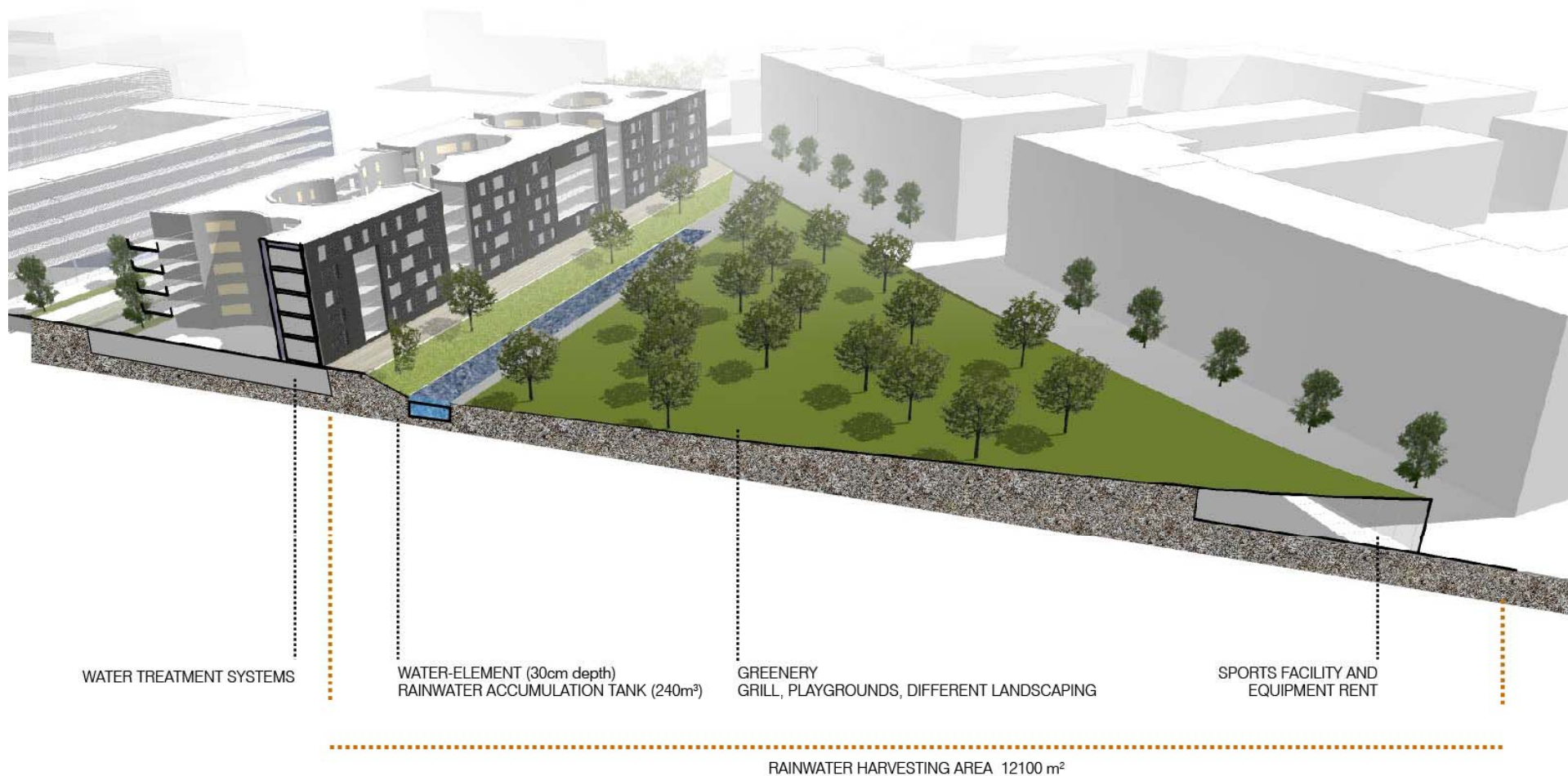












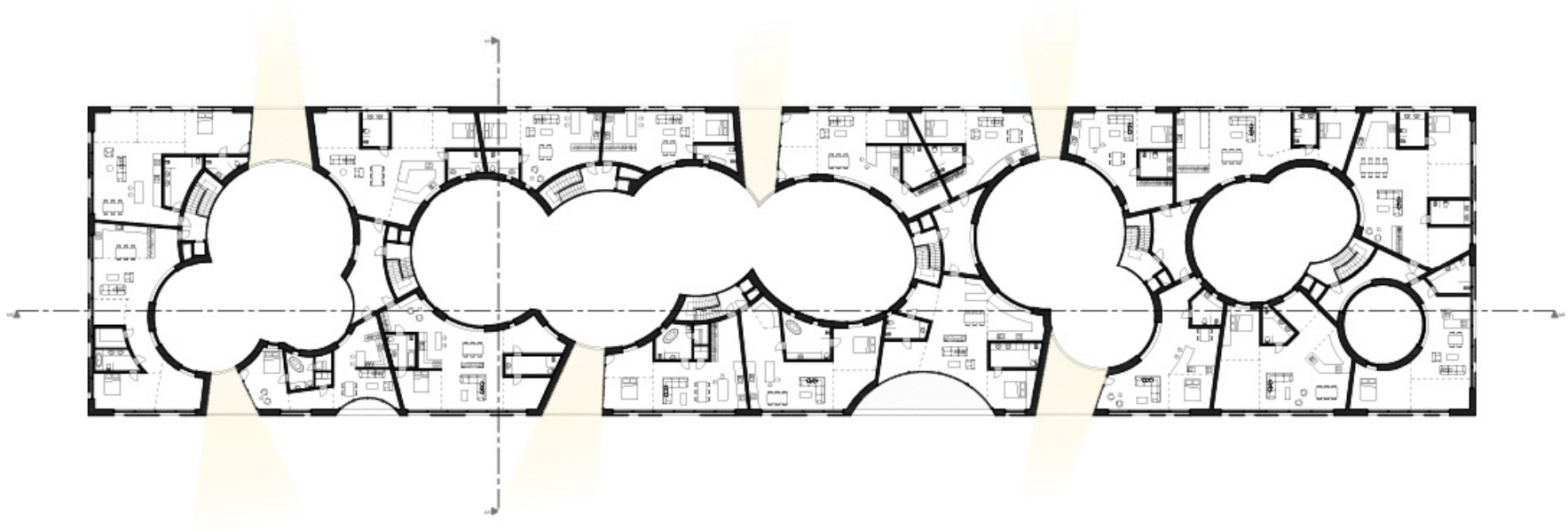
WATER TREATMENT SYSTEMS

WATER-ELEMENT (30cm depth)  
RAINWATER ACCUMULATION TANK (240m³)

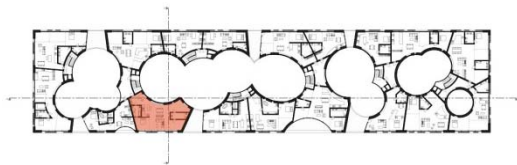
GREENERY  
GRILL, PLAYGROUNDS, DIFFERENT LANDSCAPING

SPORTS FACILITY AND  
EQUIPMENT RENT

RAINWATER HARVESTING AREA 12100 m²

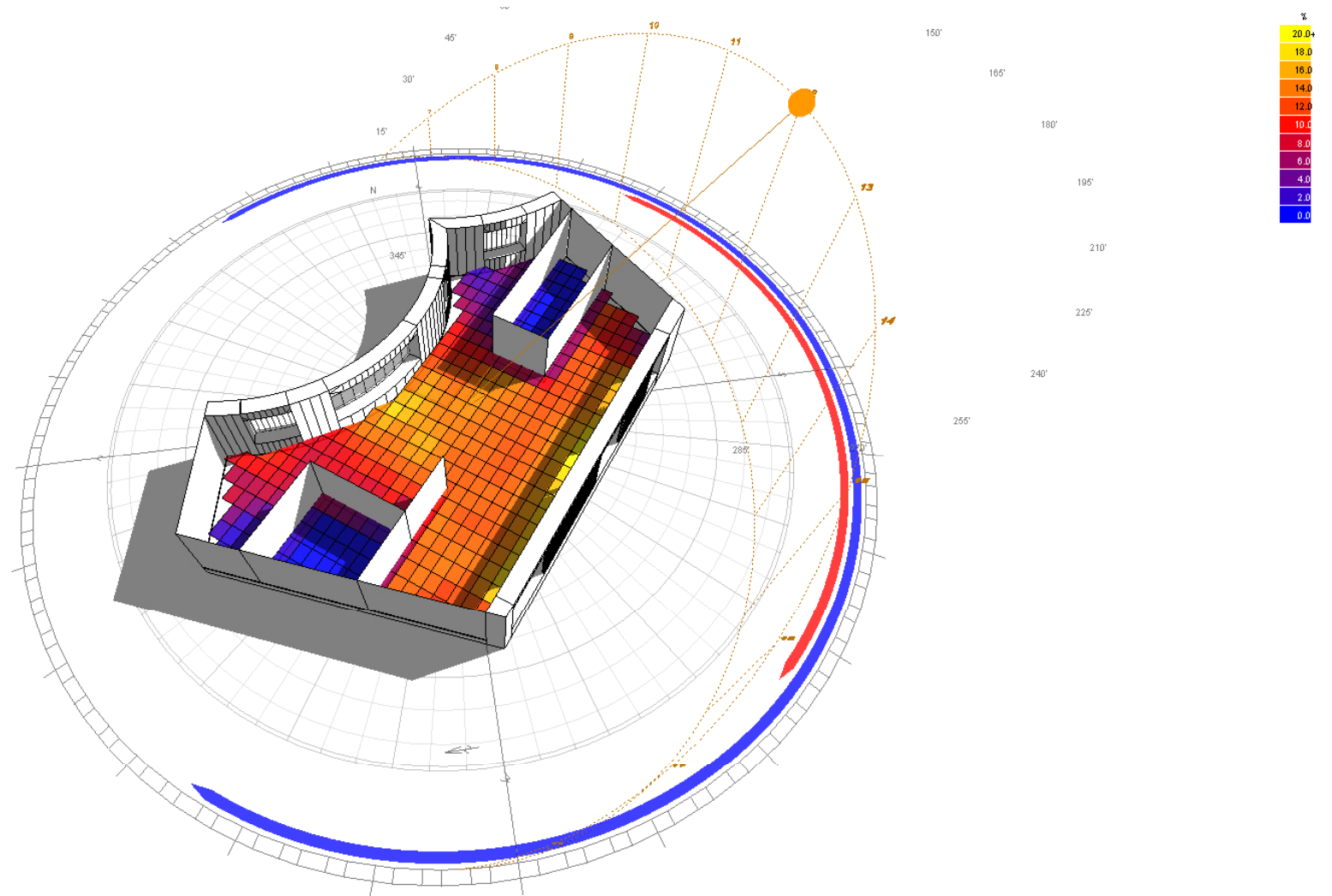


UPPER FLOORS PLAN

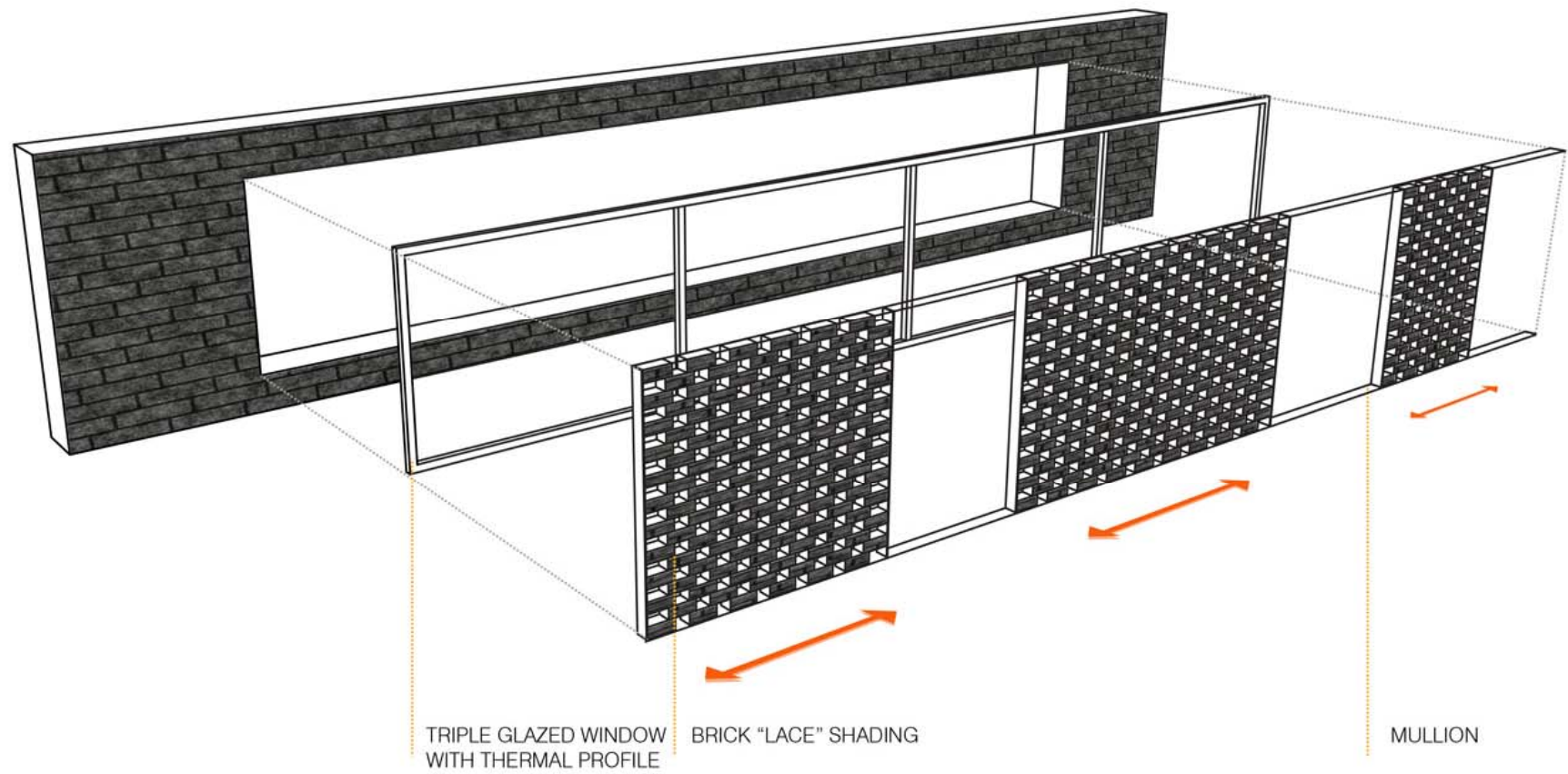


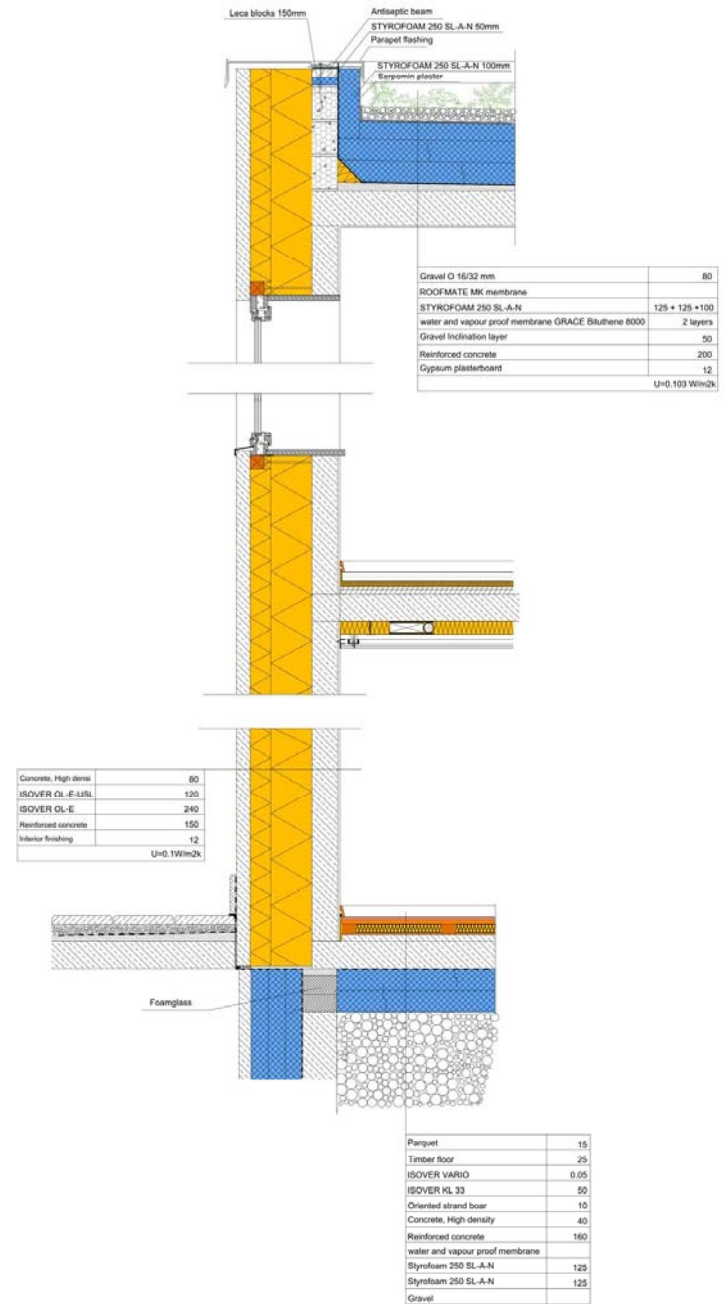
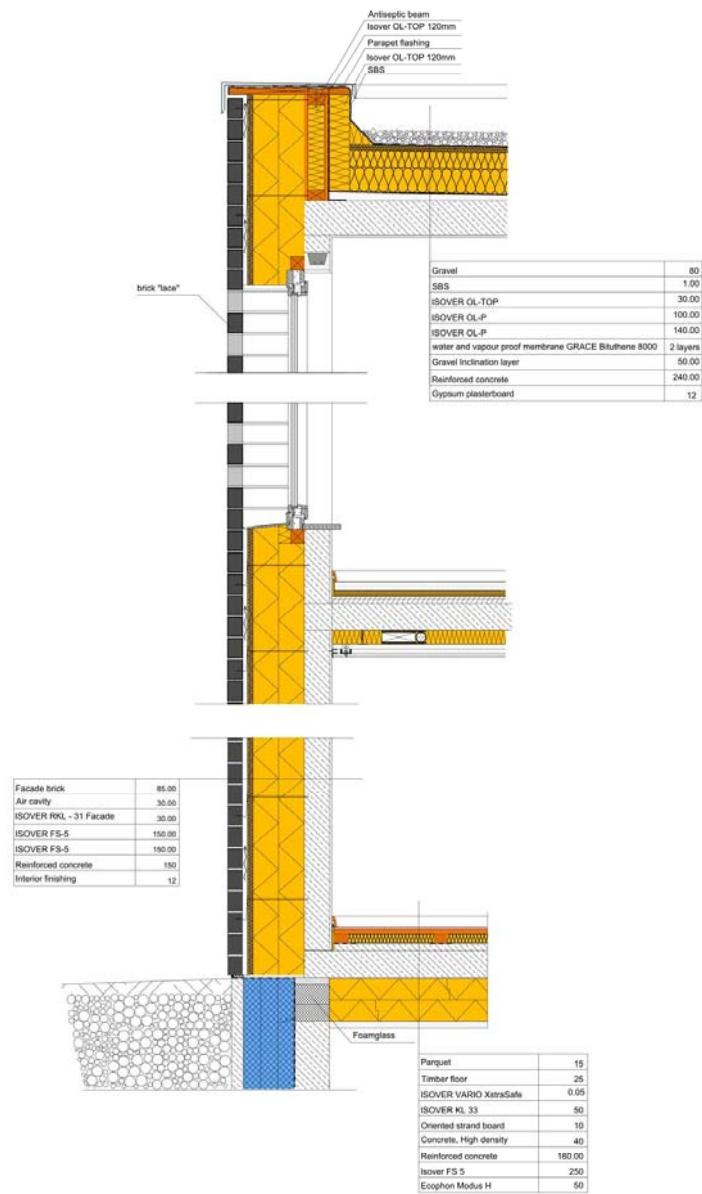
# Daylight Analysis

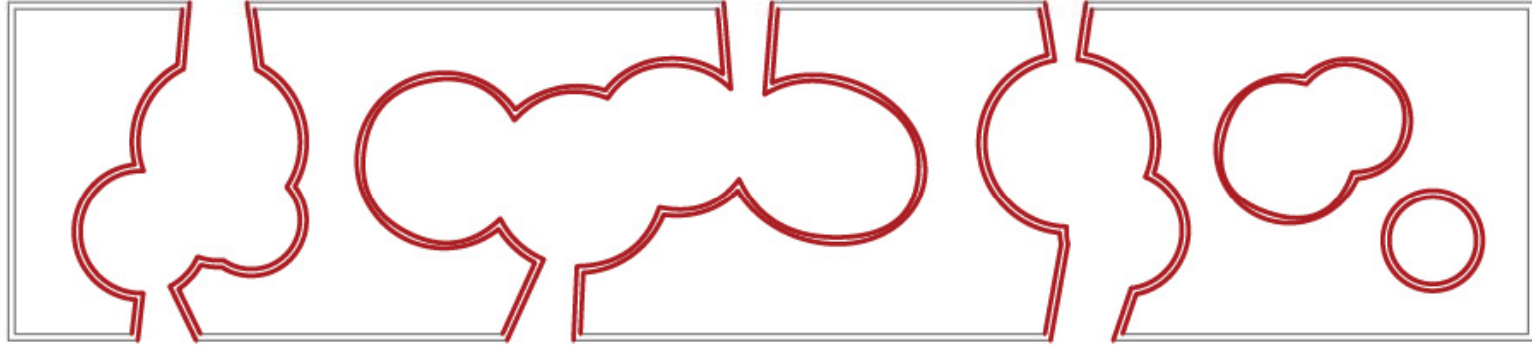
Daylight Factor  
Value Range: 0.0 - 20.0 %  
(c) ECOTECT v5





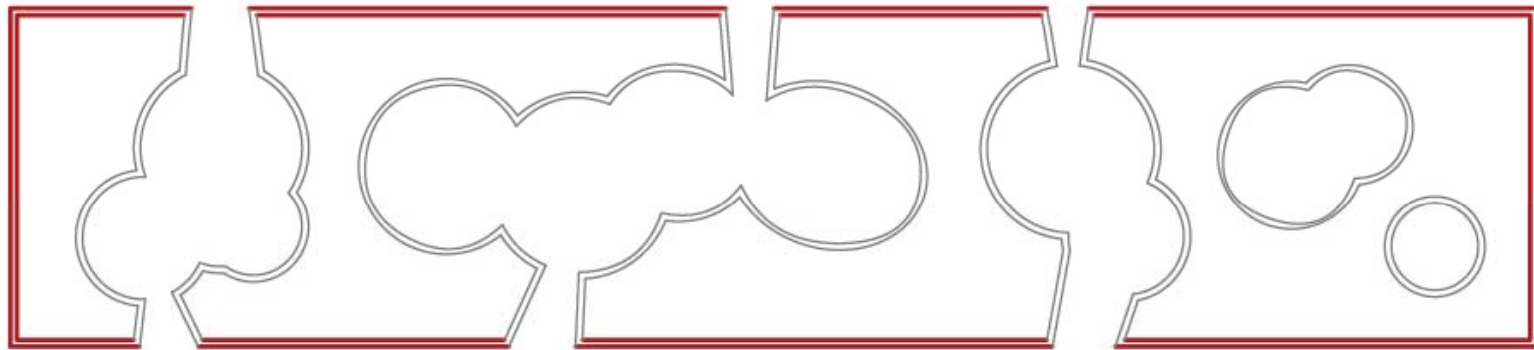






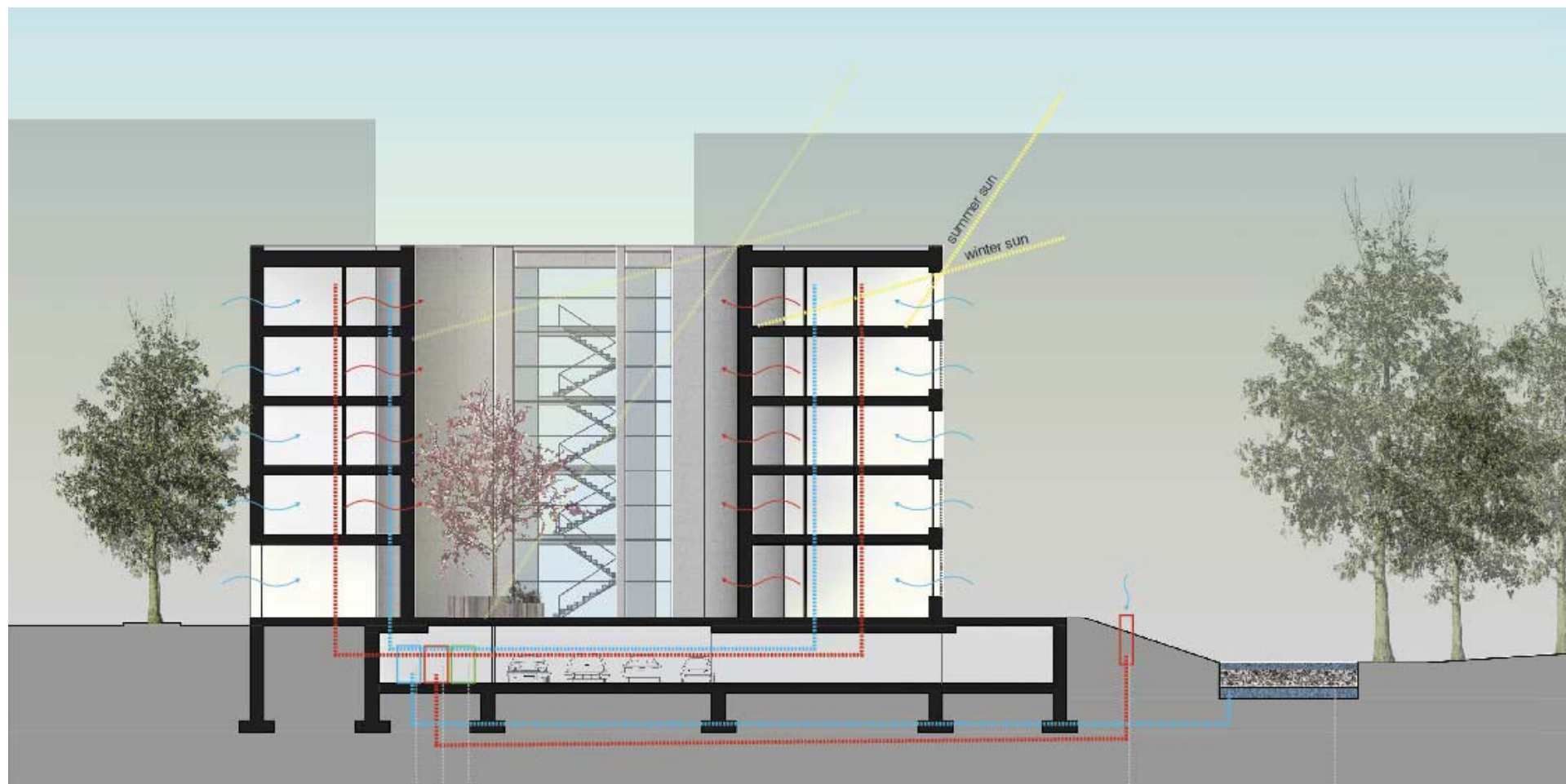
CONCRETE FINISHING





BRICK FINISHING





VENTILATION AGGREGATE  
HEATING AGGREGATE  
WATER PUMP

FRESH AIR INTAKE    RAINWATER



## QUANTITY OF RAINWATER

BUILDING'S ROOF 2200 m<sup>2</sup>

JANUARY - 90 m<sup>3</sup>



JULY - 163 m<sup>3</sup>

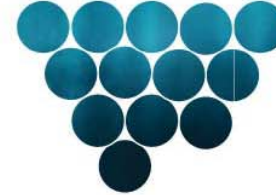


PARK AREA 14300 m<sup>2</sup>

JANUARY - 586 m<sup>3</sup>



JULY - 1087 m<sup>3</sup>



CONNECTION TO PUMP  
AND DOMESTIC WATER  
SYSTEM

FILTER MEDIA - WEBER Filtralite

RAINWATER DRAINAGE





## General project data

Name of building project: Isover 2013

Address data:

Name of developer: --  
 Street of project, house no.: --  
 ZIP or Post code, Town/City: --  
 Climatic region: DE-Mannheim  
 Planning phase: --  
 Planning serial number: --  
 Comment on planning: --

## Areas summary

	Comp. A	Comp. B	Comp. C	Total
Treated floor area:	11000.00 m <sup>2</sup>	20250.00 m <sup>2</sup>	0.00 m <sup>2</sup>	11000.00 m <sup>2</sup>
Envelope areas:				
Exterior walls:	4395.90 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	4395.90 m <sup>2</sup>
Exterior walls to ground:	711.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	711.00 m <sup>2</sup>
Roof area / top floor ceiling:	2209.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	2209.00 m <sup>2</sup>
Cellar ceiling / floor slab:	2209.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	2209.00 m <sup>2</sup>
Window/doors:				
Windows facing east:	1155.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	777.00 m <sup>2</sup>
Windows facing south:	777.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	777.00 m <sup>2</sup>
Windows facing west:	1092.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	1092.00 m <sup>2</sup>
Windows facing north:	829.50 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	829.50 m <sup>2</sup>
Horizontal window area:	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>
Exterior door:	37.80 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	37.80 m <sup>2</sup>
Total of all building envelope areas:	13416.20 m <sup>2</sup>	0.00 m <sup>2</sup>	0.00 m <sup>2</sup>	13416.20 m <sup>2</sup>

## Summary of constructional U-values

	AF 1 (m <sup>2</sup> )	U-value 1 (W/m <sup>2</sup> K)	AF 2 (m <sup>2</sup> )	U-value 2 (W/m <sup>2</sup> K)	AF 3 (m <sup>2</sup> )	U-value 3 (W/m <sup>2</sup> K)	Mean U-value (W/m <sup>2</sup> K)
EW - AA:	4395.90	0.09	0.00	0.00	0.00	0.00	0.090
EW - G:	711.00	0.29	0.00	0.00	0.00	0.00	0.290
RA / TFC:	2209.00	0.10	0.00	0.00	0.00	0.00	0.100
CC / FF:	2209.00	0.10	0.00	0.00	0.00	0.00	0.100

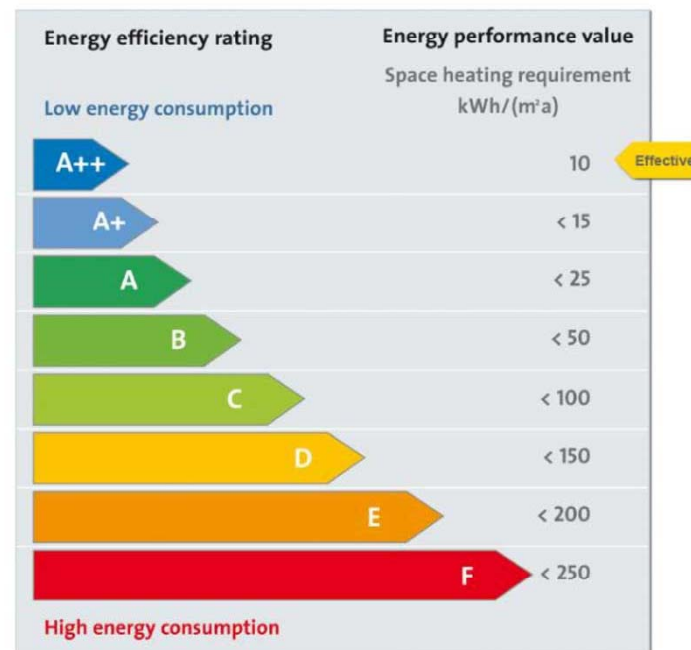
## Calculations:

Heat Losses:

1. Transmission Heat Losses per m <sup>2</sup> and year:	26.96 kWh/(m <sup>2</sup> a)
2. Ventilation Heat Losses per m <sup>2</sup> and year:	5.97 kWh/(m <sup>2</sup> a)
3. Total Heat Losses per m <sup>2</sup> and year:	32.93 kWh/(m <sup>2</sup> a)

Heat Gains:

4. Internal Heat Gains per m <sup>2</sup> and year:	11.34 kWh/(m <sup>2</sup> a)
5. Available Solar Heat Gains per m <sup>2</sup> and year:	17.11 kWh/(m <sup>2</sup> a)
6. Total Heat Gains (Free Heat) per m <sup>2</sup> and year:	25.26 kWh/(m <sup>2</sup> a)

Annual Heat Demand (kWh/m<sup>2</sup>): 84362.21 kWh/m<sup>2</sup>Specific Annual Heat Demand (kWh/m<sup>2</sup>): 7.67 kWh/(m<sup>2</sup>a)Specific Annual Heat Demand < 15 kWh/(m<sup>2</sup>a) achieved: YES





THANK YOU!