

Monterey Peninsula Water Supply Project

Marina, California

Derek Holloway

Danton Spina

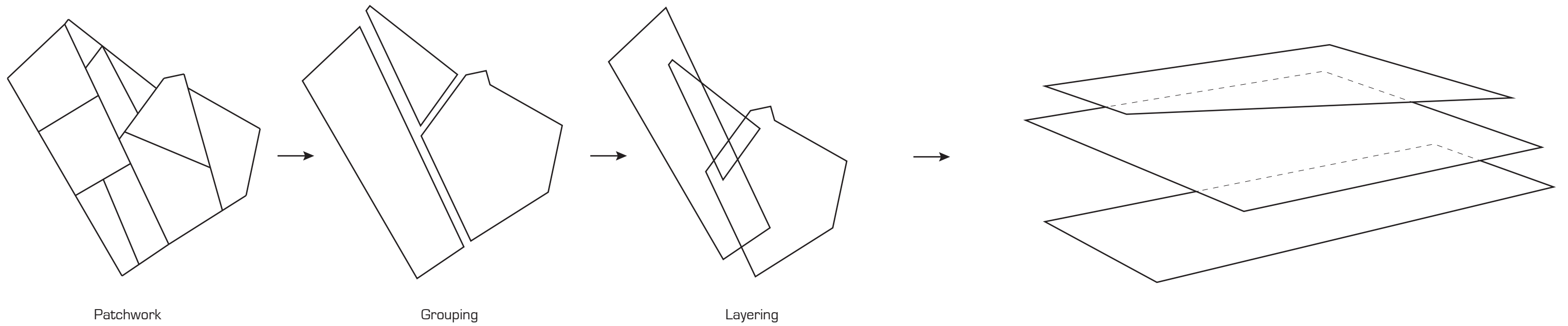
Smita Naik

Kevin Pitzer

Concept



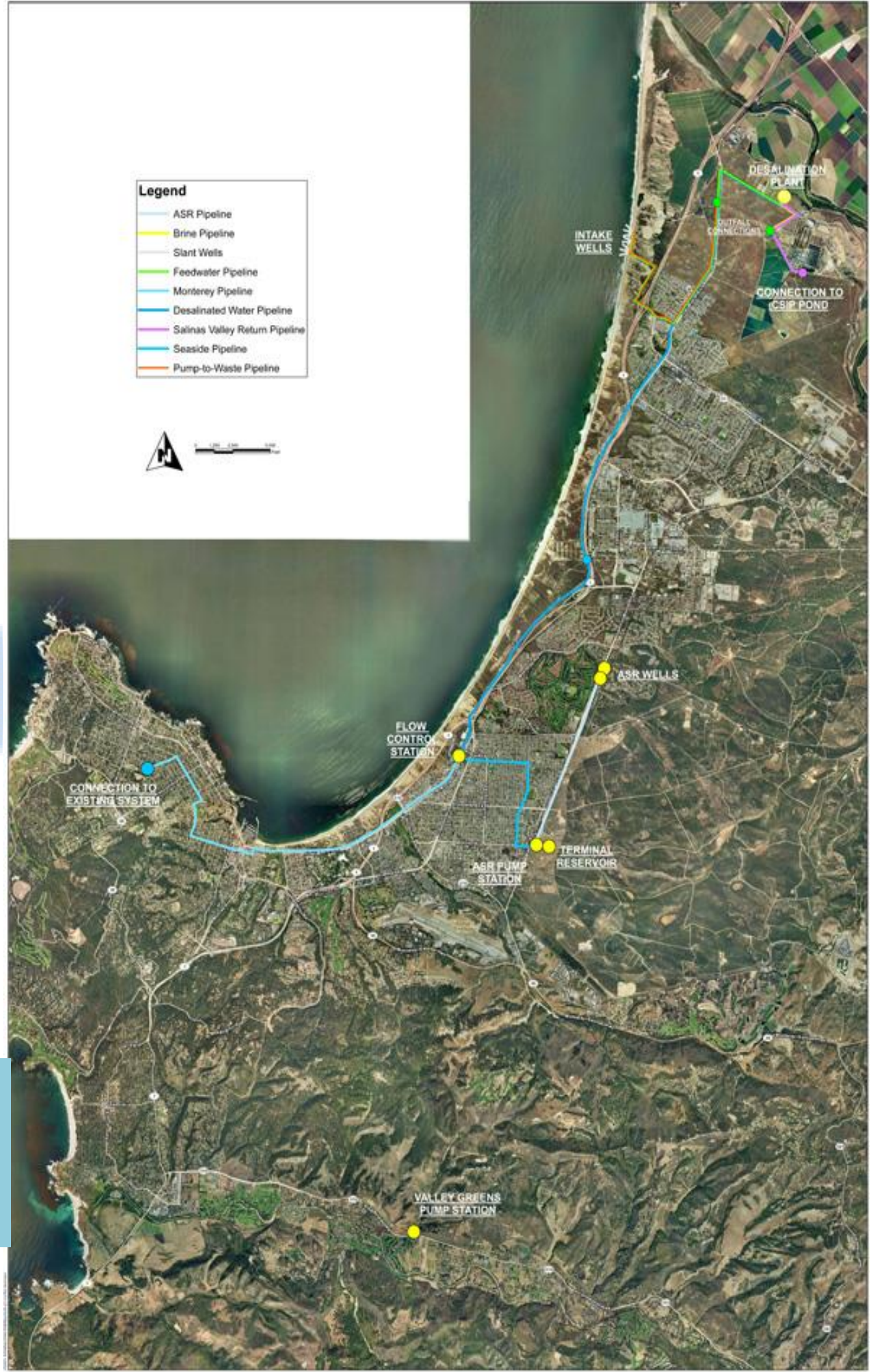
Concept



Project Goals



Sustainable development is maintaining a delicate balance between the **human** need to improve, preserving **natural resources** while optimizing the **cost efficiency**.



Project Goals

ENGINEERING

Resource efficiency
Cost efficiency
Functionality+Aesthetics

SUSTAINABILITY

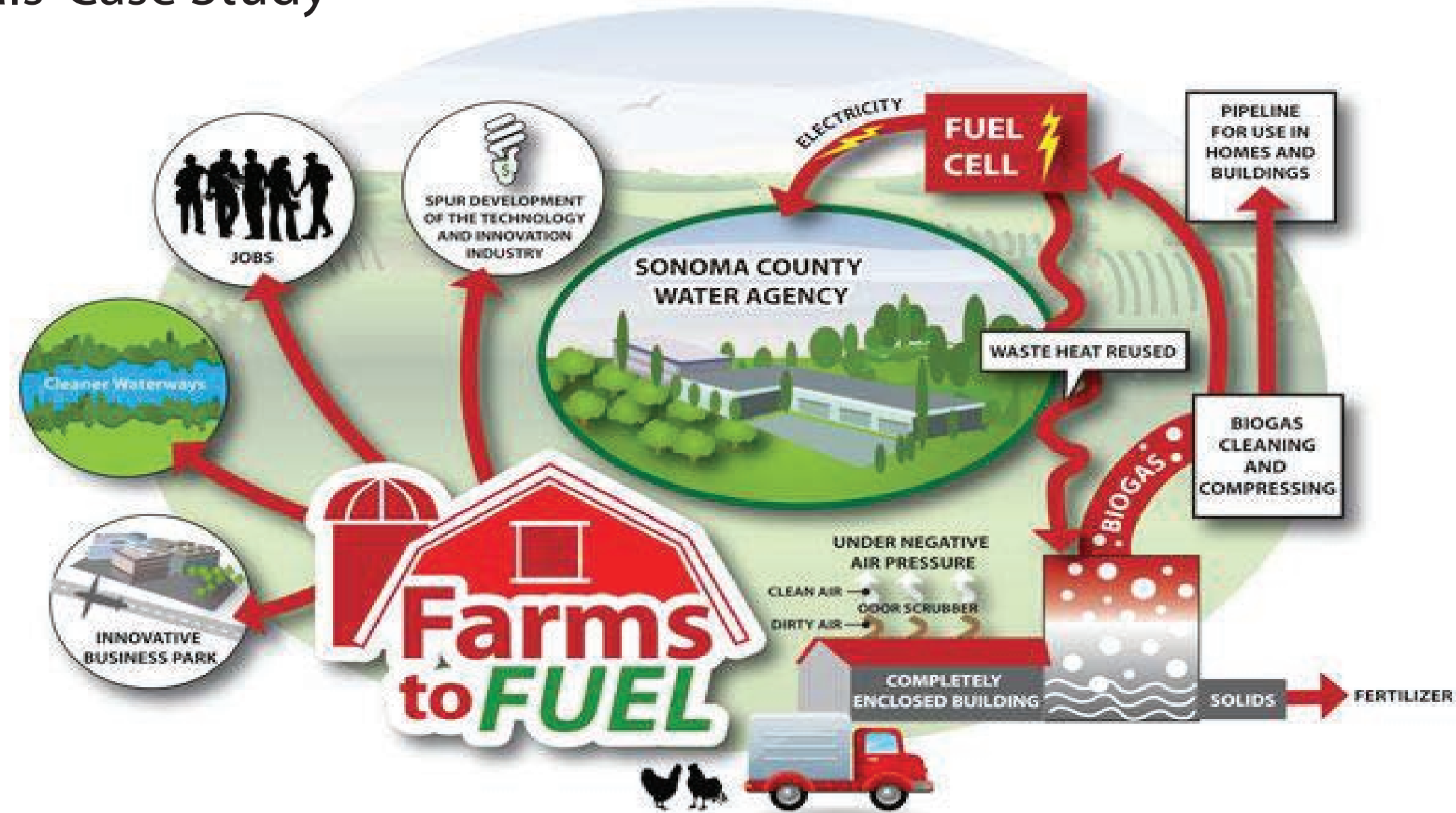
Min Environmental impact
Energy efficiency
Xeroscaping
Net zero admin building
LEED like design
Hybrid/Electric vehicles
Photovoltaic system
Recycling program

COMMUNITY

Education
Volunteer opportunities



Project Goals-Case Study

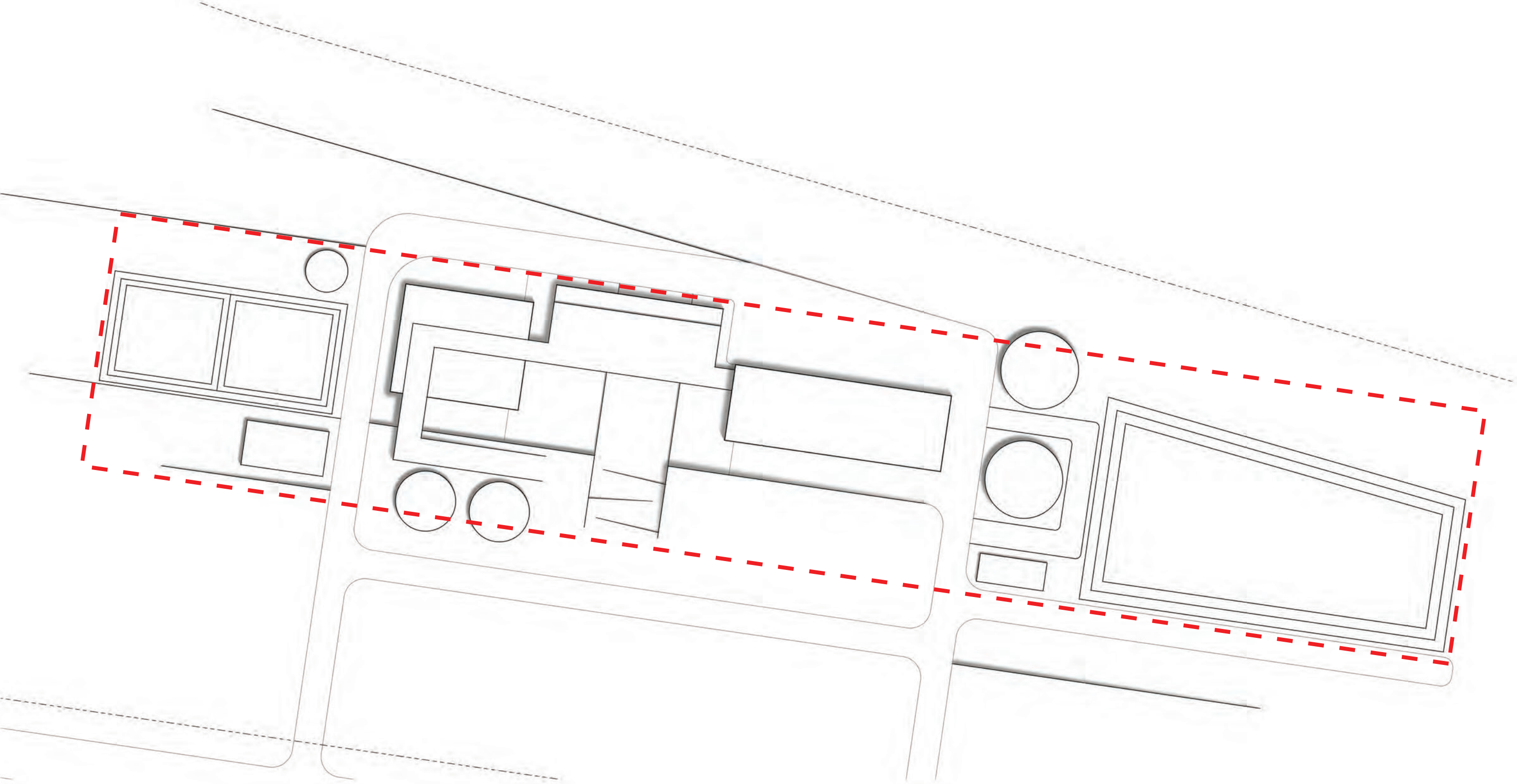


Farms to Fuels

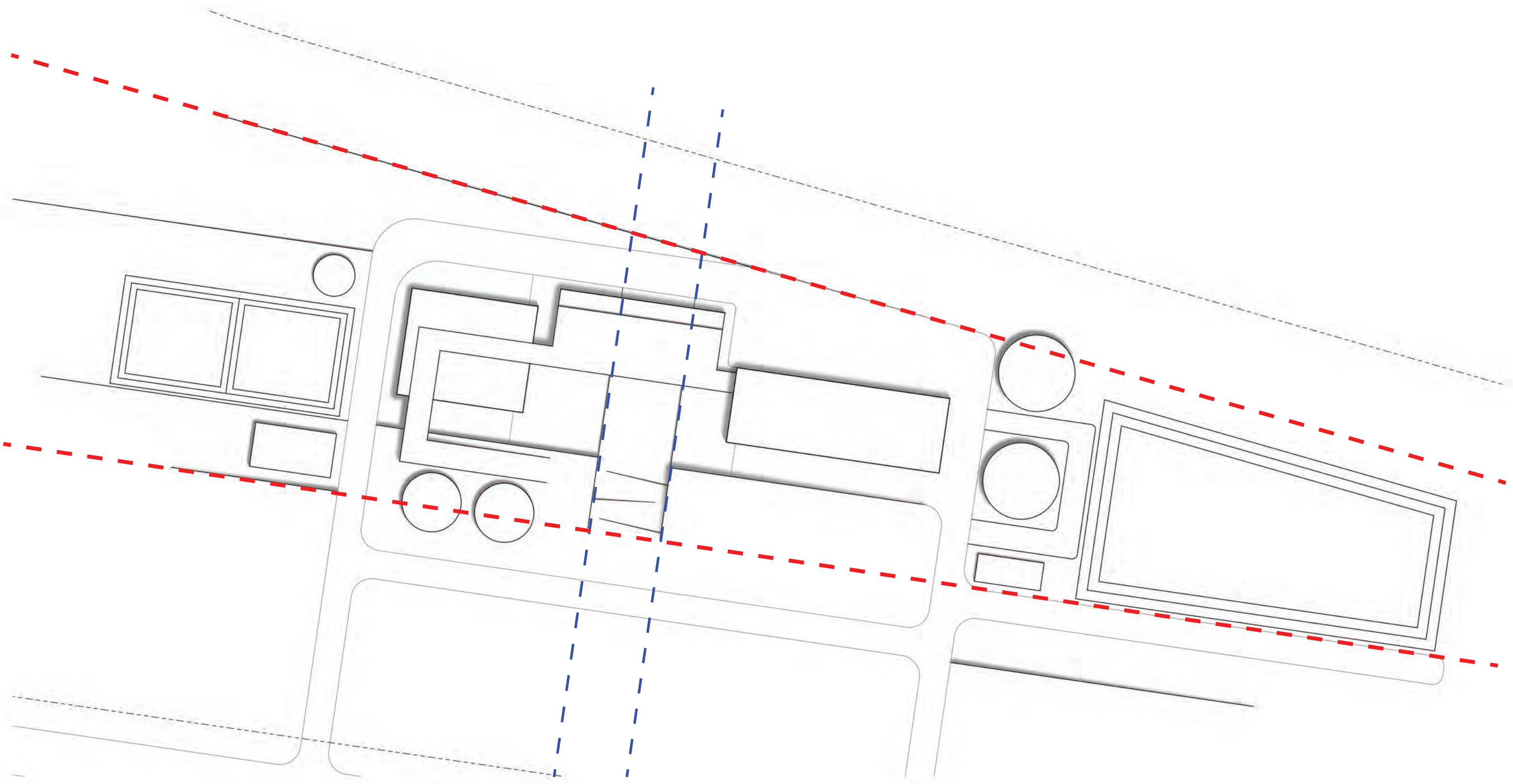
A proposed project to generate power through the digestion of manure local chicken farmers. A 1.4 MW fuel cell will convert some of the biogas to clean electricity while the remaining biogas will be sold for use elsewhere

This innovative technology reduces Water Agency's dependence on fossil fuels by producing 1.4 MW of power meeting 25 – 33% of Water Agency's total base needs.

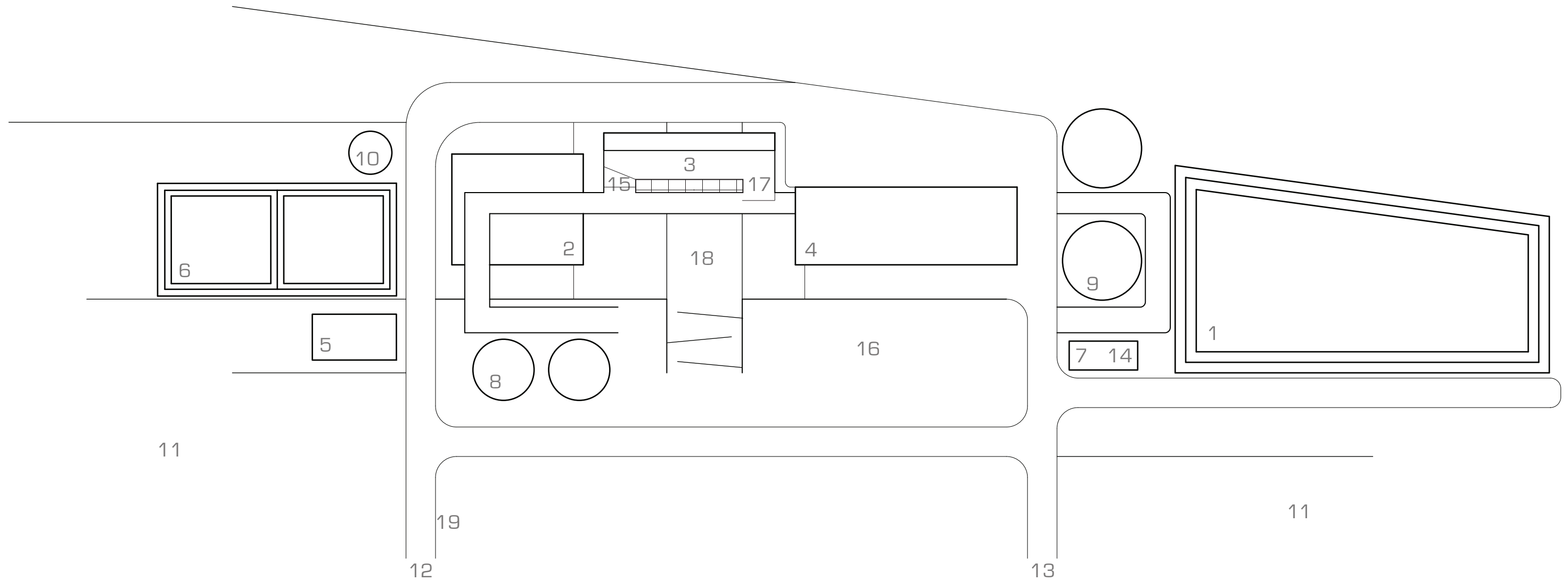
Site Layout



Site Layout

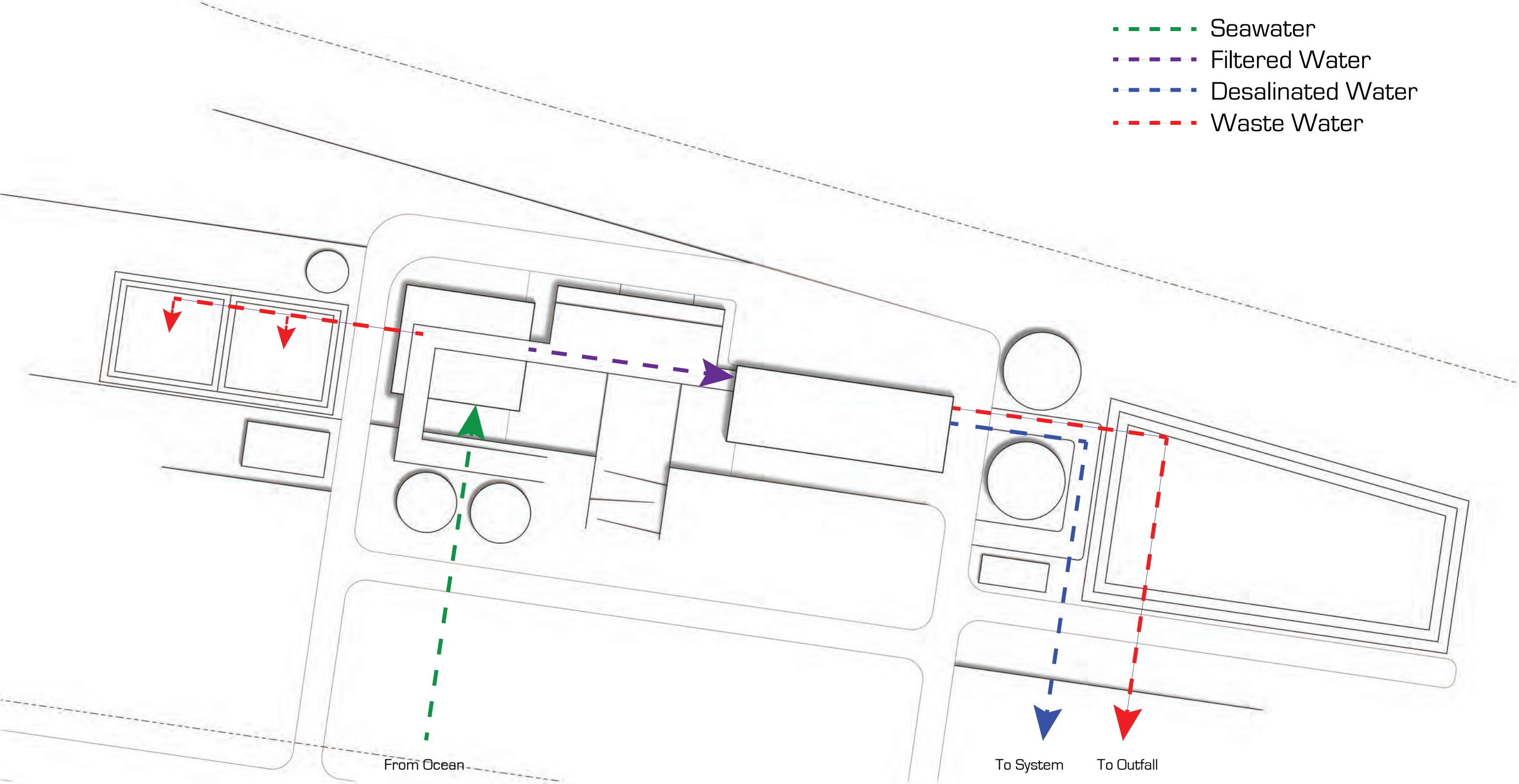


Site Plan

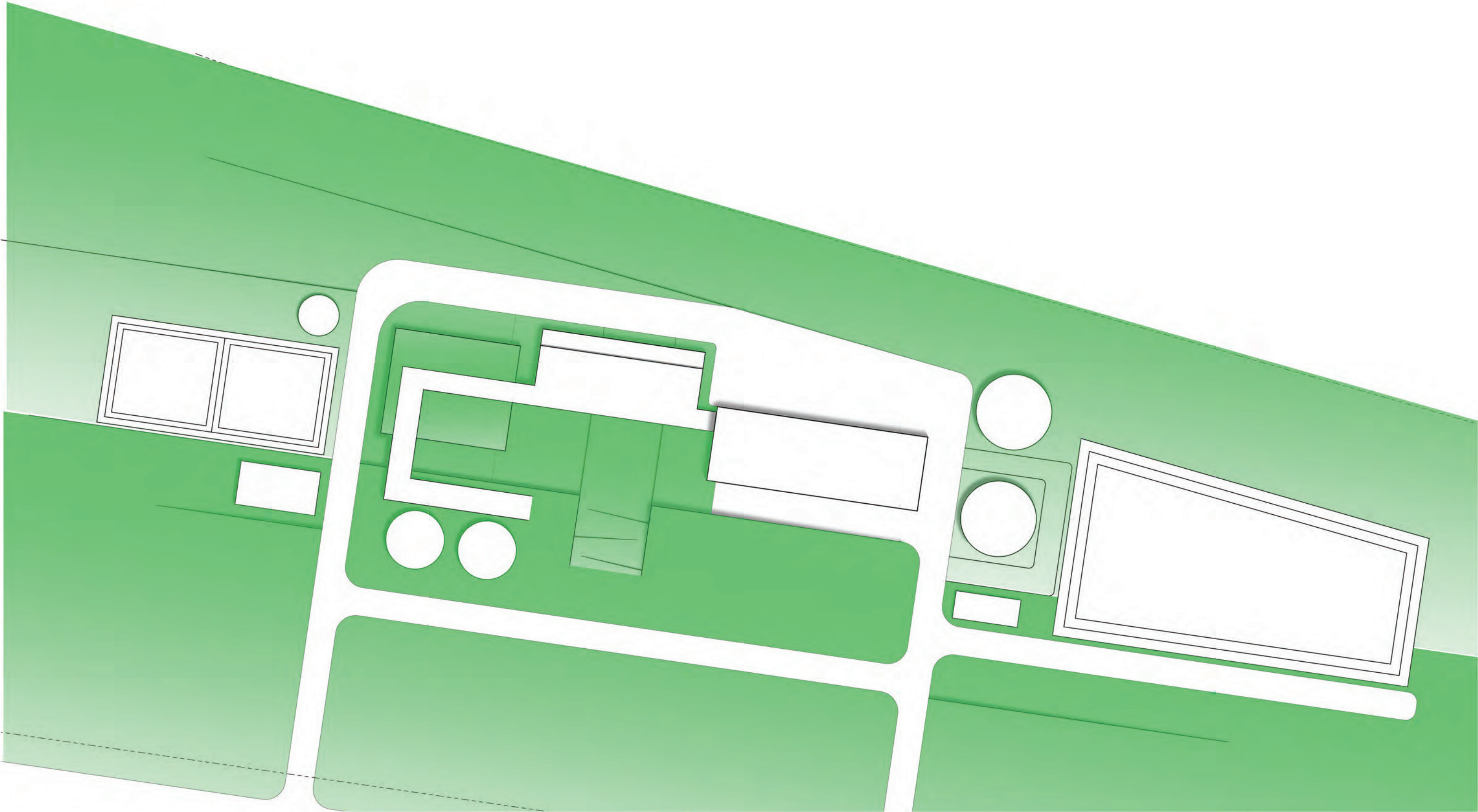


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|--------------------------------|-----------------------------------|--------------------------|-------------------|--------------------|
| 1. Brine Storage Pond | 5. Electrical Substation | 9. Clearwells | 13. Exit | 17. Control Room |
| 2. Multi Media Filters | 6. Backwash Wastewater Ponds | 10. Backwash Supply Tank | 14. Generator | 18. Main Courtyard |
| 3. Administration | 7. Desalinated Water Pump Station | 11. Open Space | 15. Electrical | 19. Security |
| 4. RO/Post-Treatment/ Chemical | 8. Feedwater Receiving Tanks | 12. Entrance | 16. Guest Parking | |

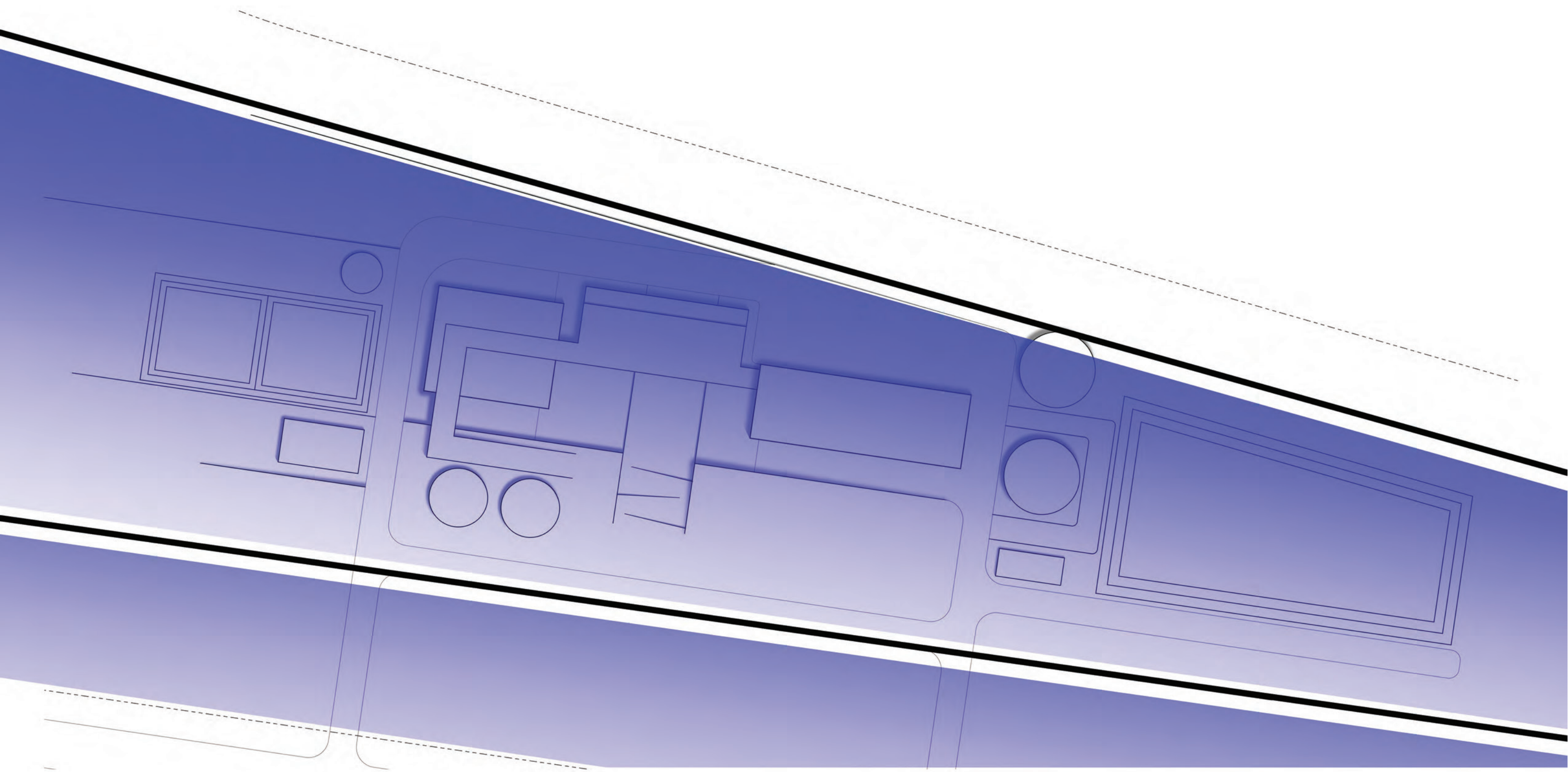
Water Circulation



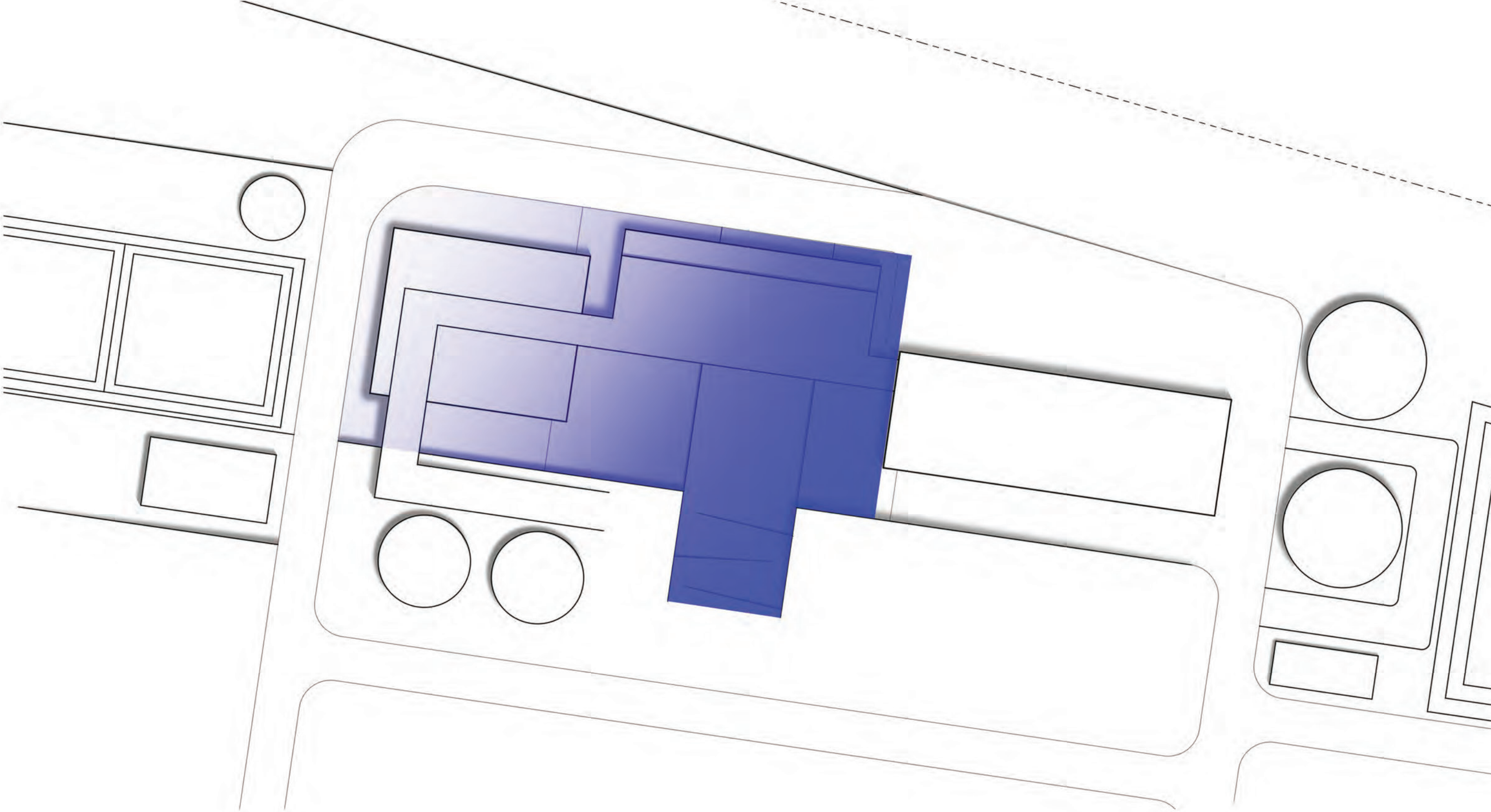
Permeable Surfaces



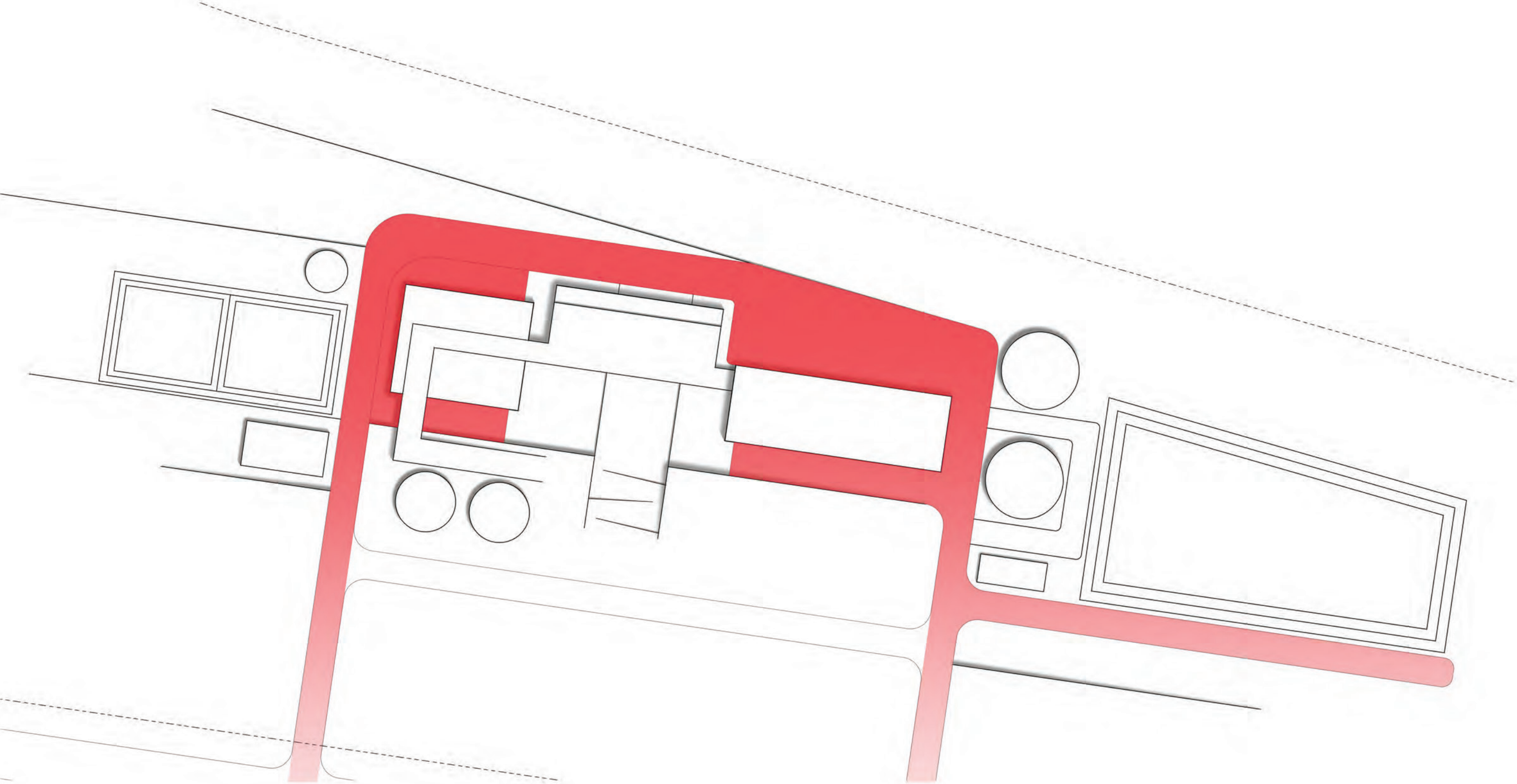
Stormwater



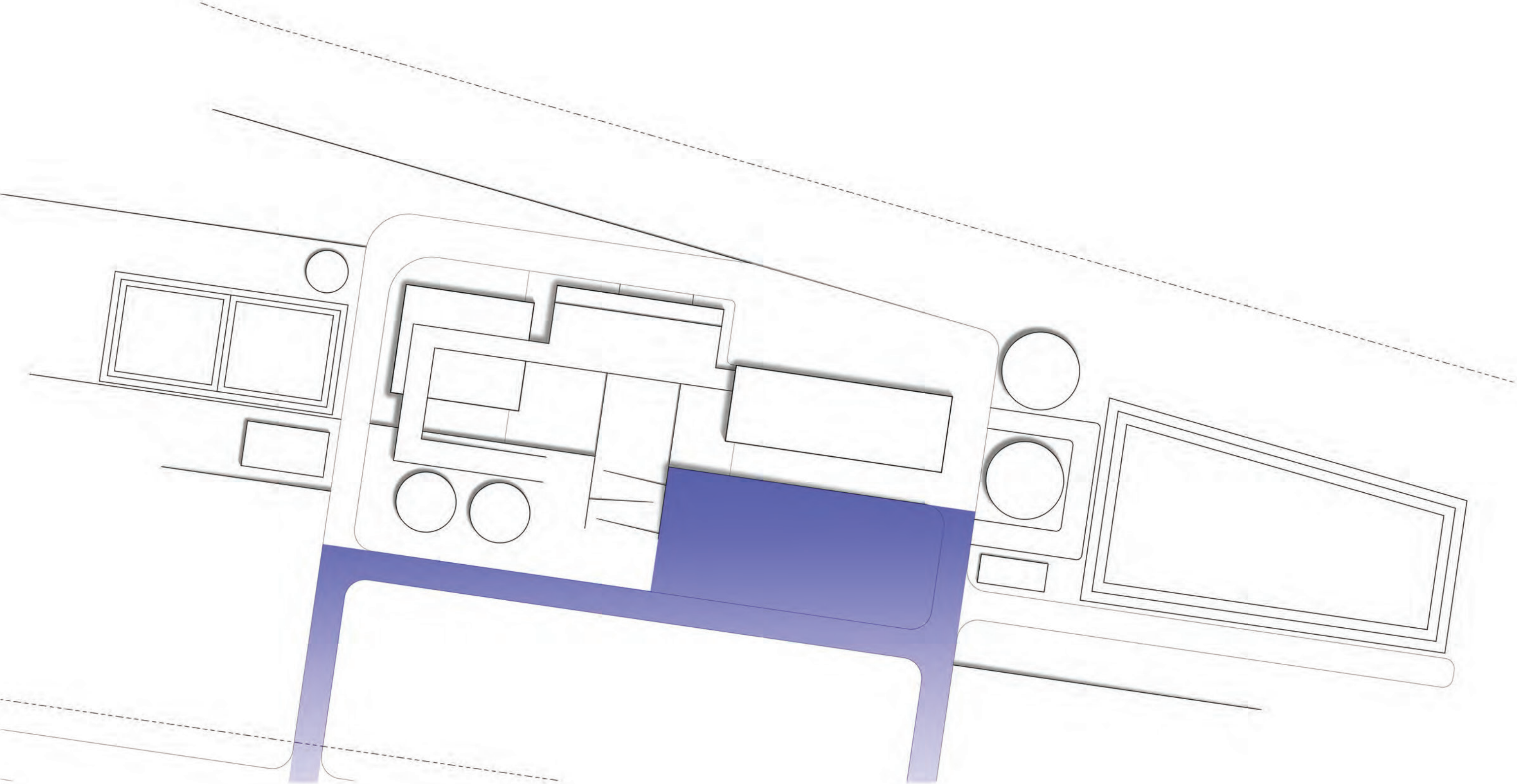
Stormwater



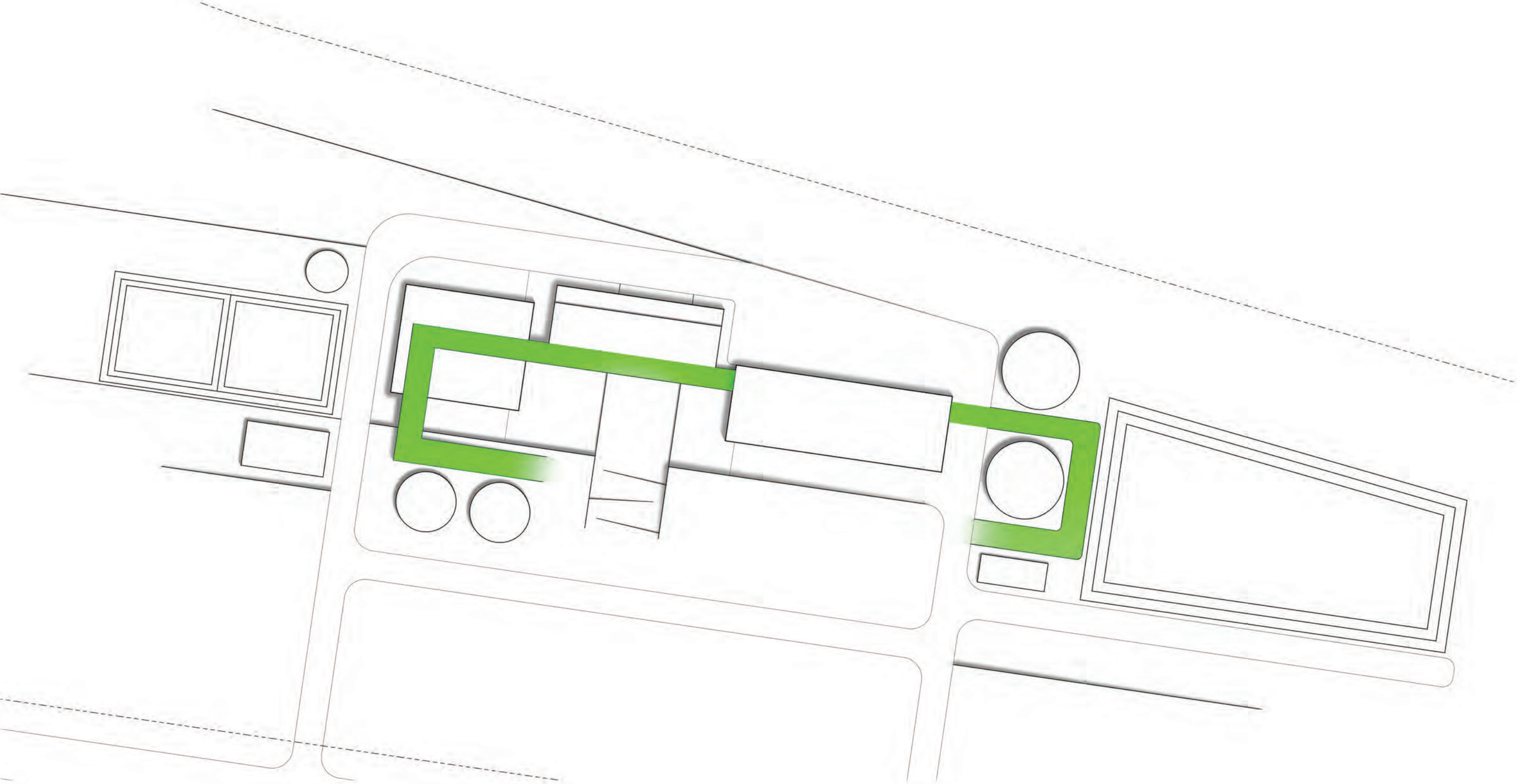
Service Circulation



Public Circulation

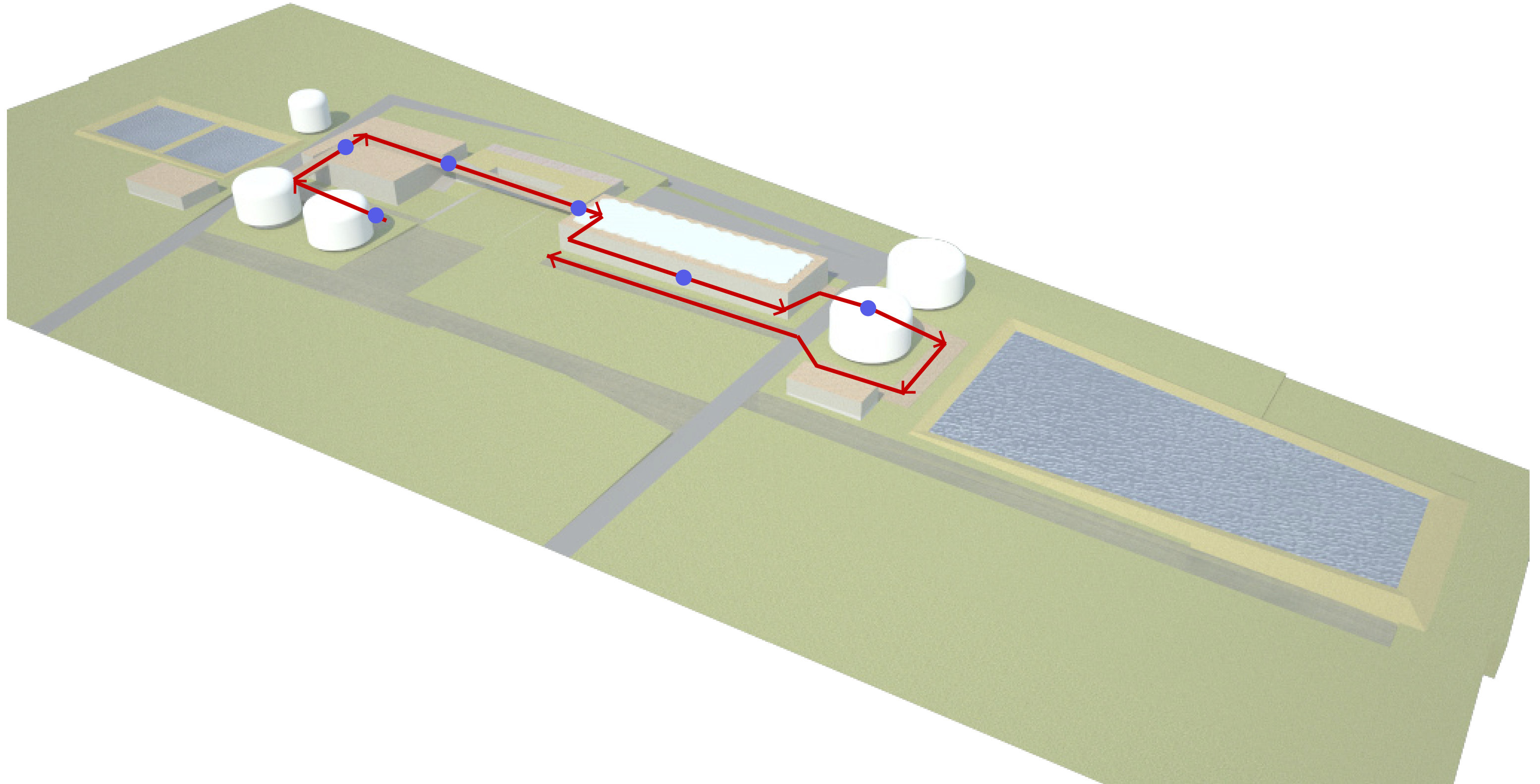


Education Circulation



Circulation

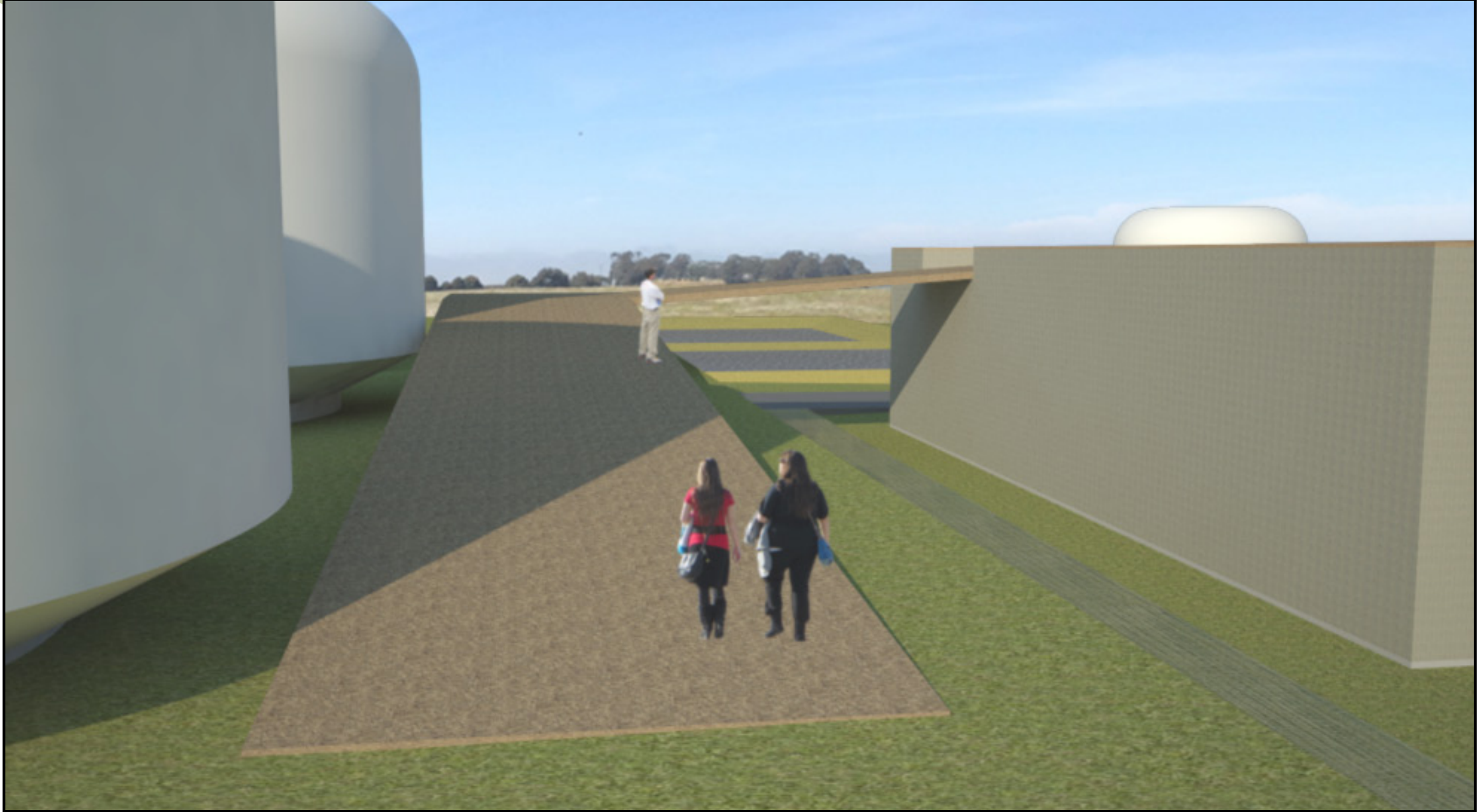
Tour Path



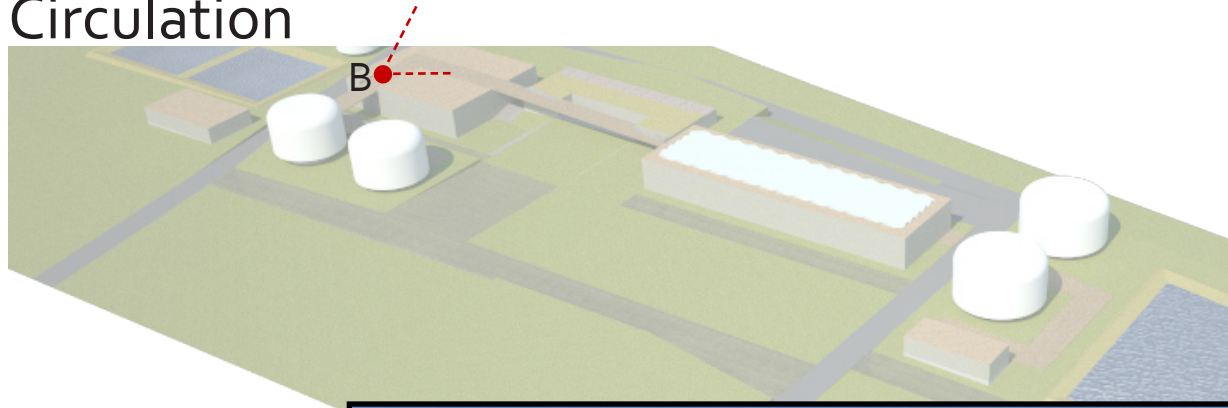
Circulation



Tour Path



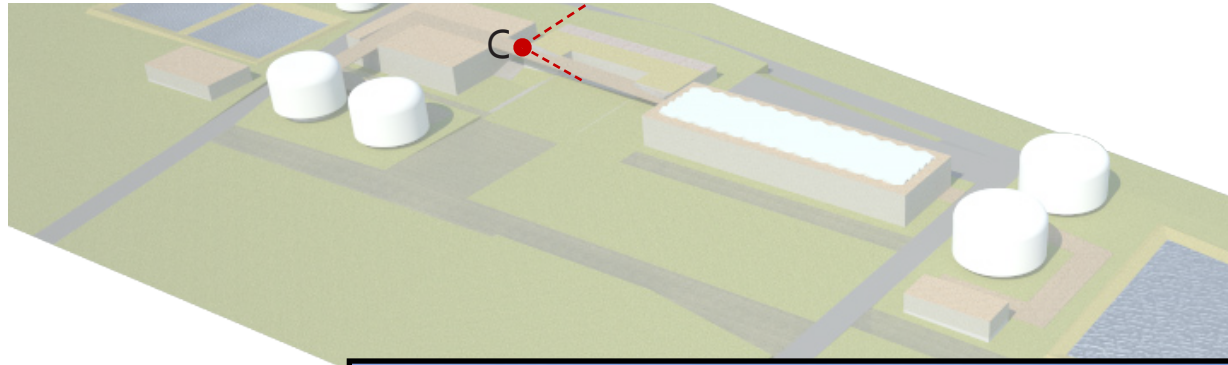
Circulation



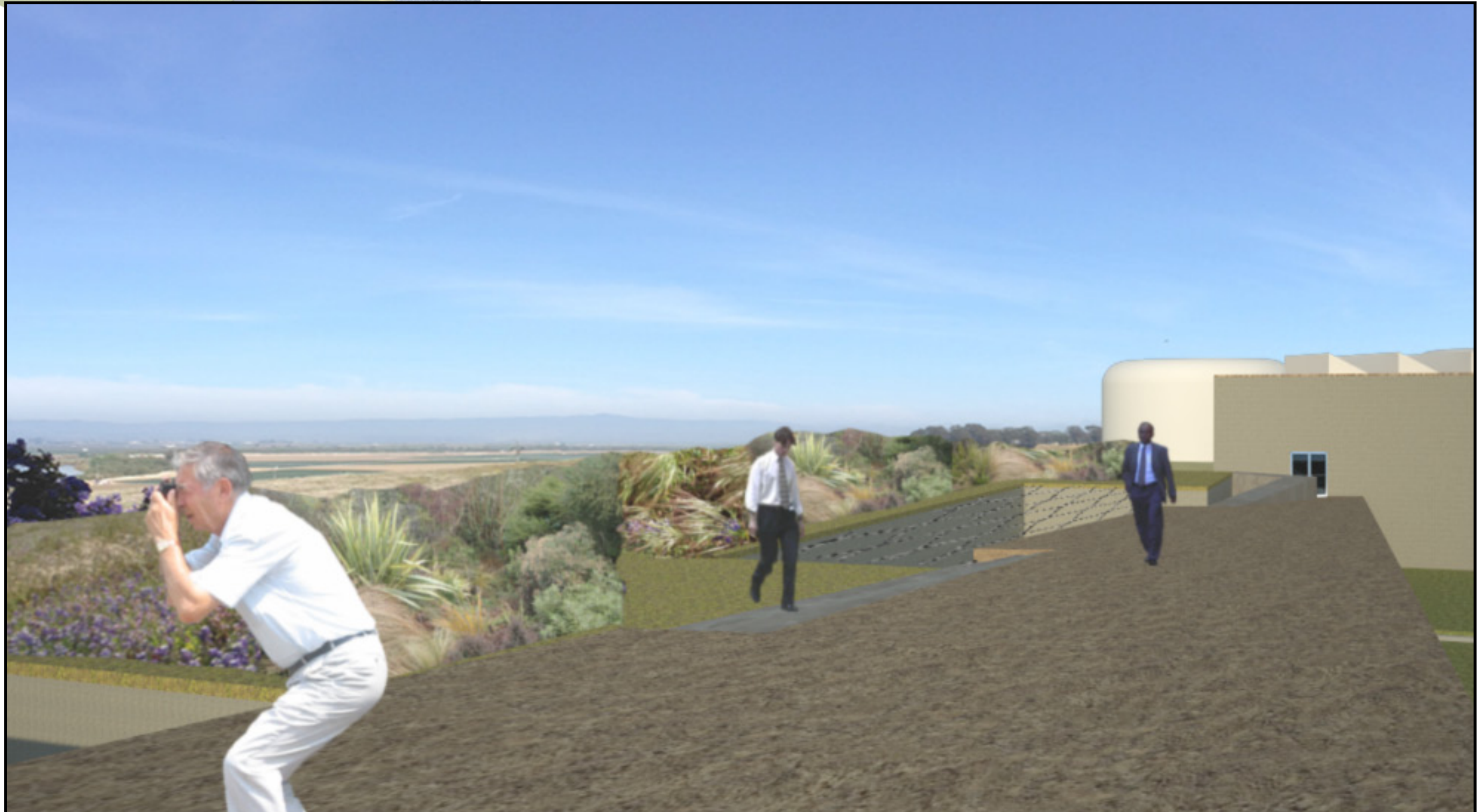
Tour Path



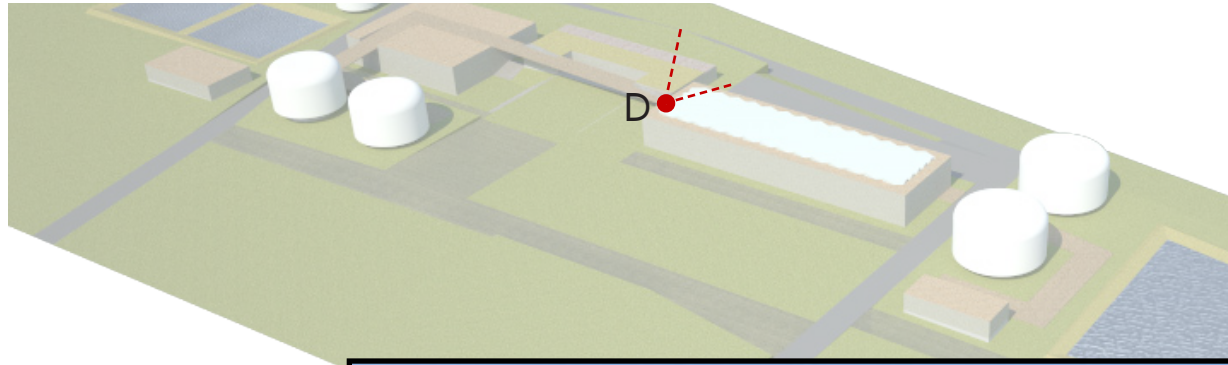
Circulation



Tour Path



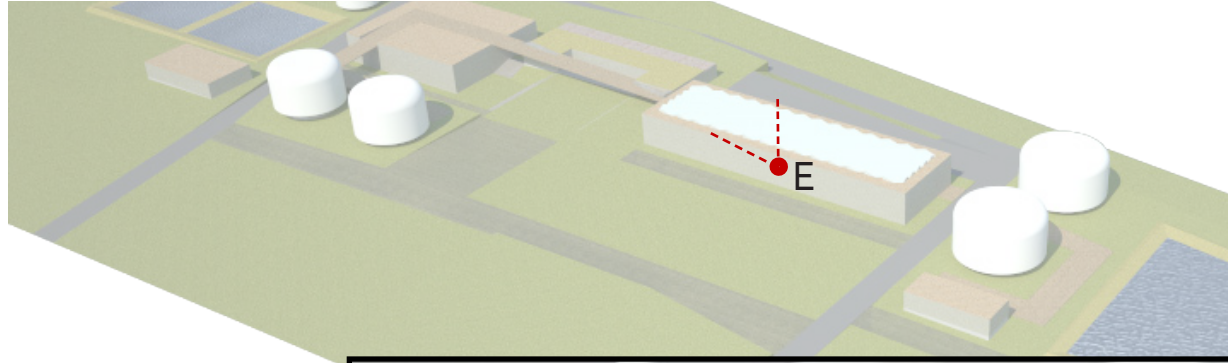
Circulation



Tour Path



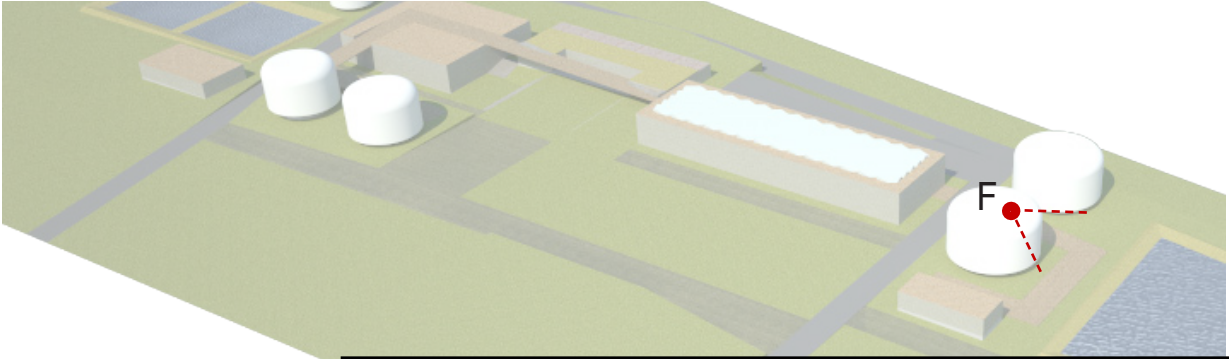
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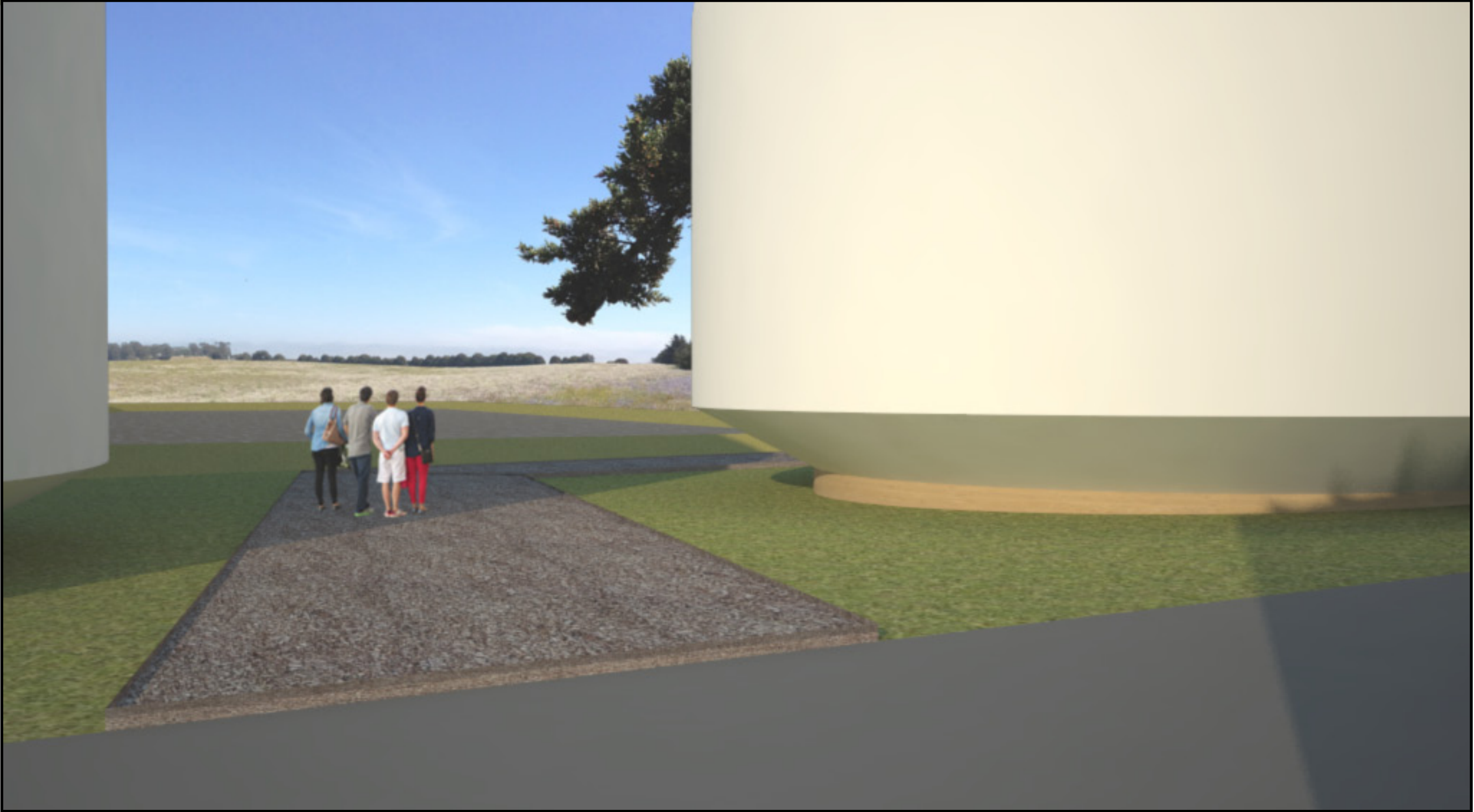
Tour Path



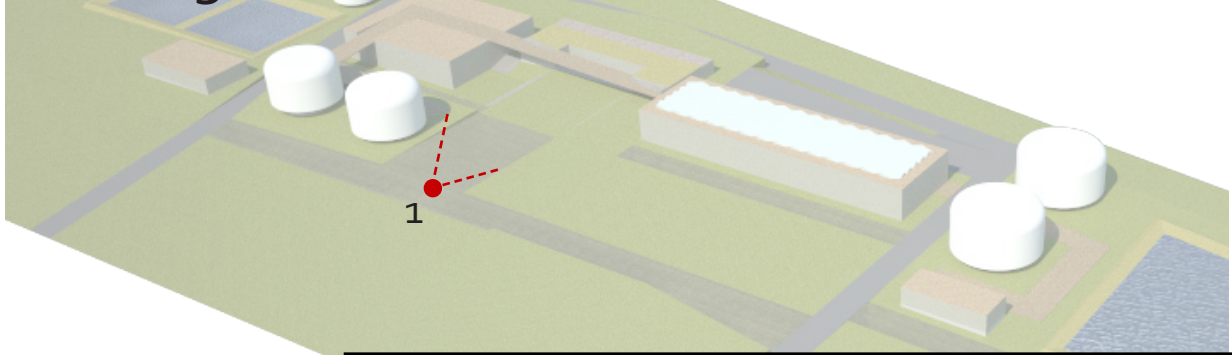
Circulation



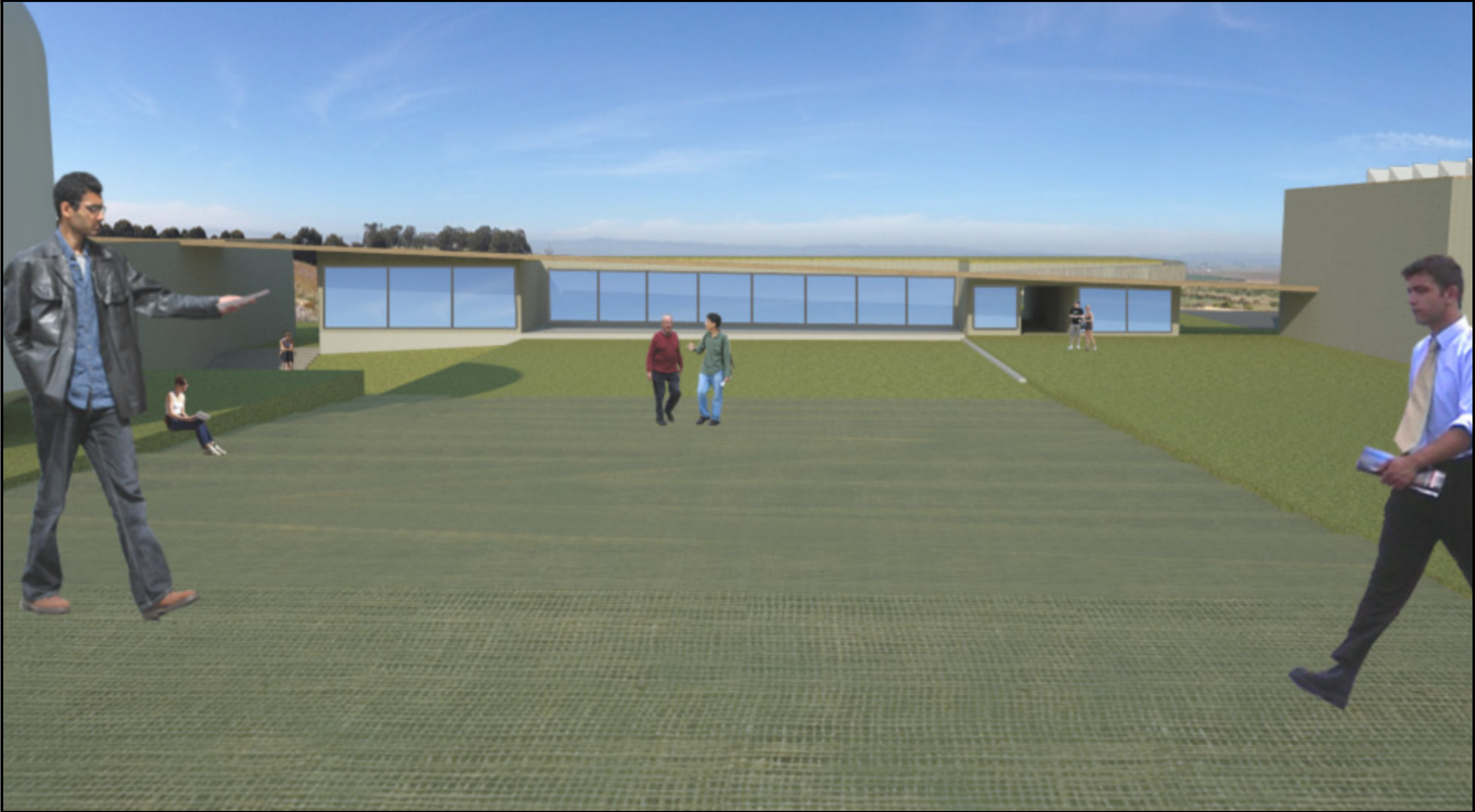
Tour Path



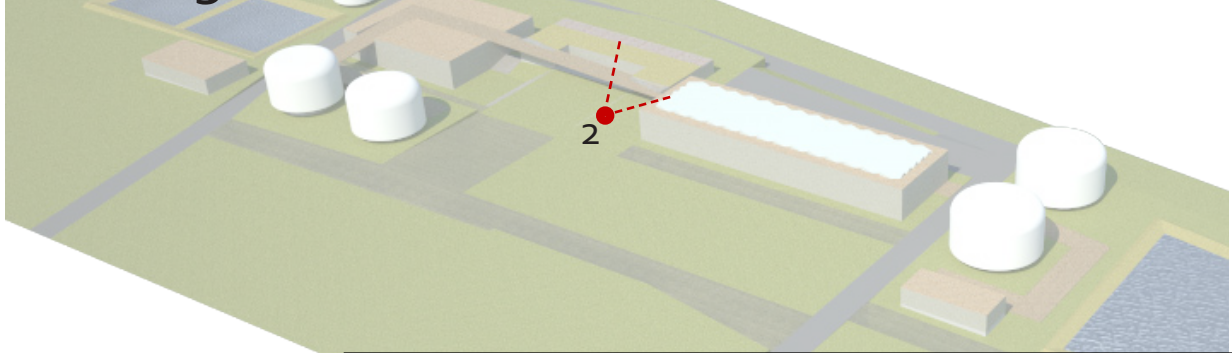
Framing the View



View 1



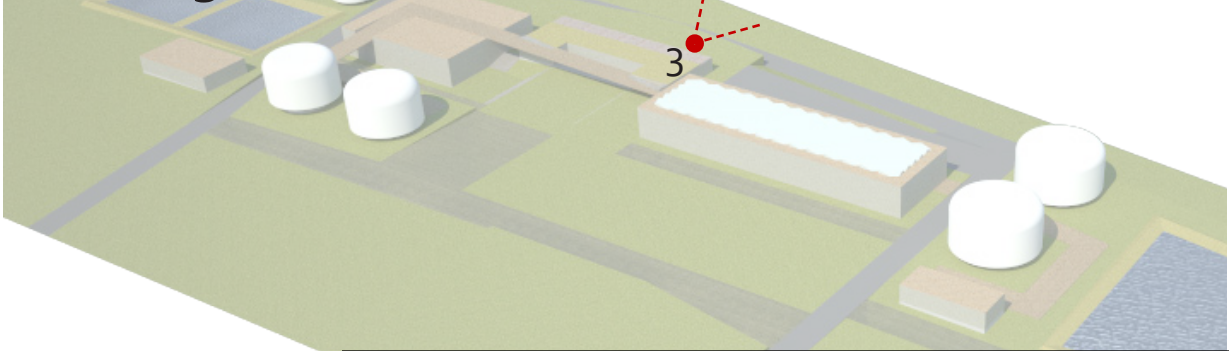
Framing the View



View 2



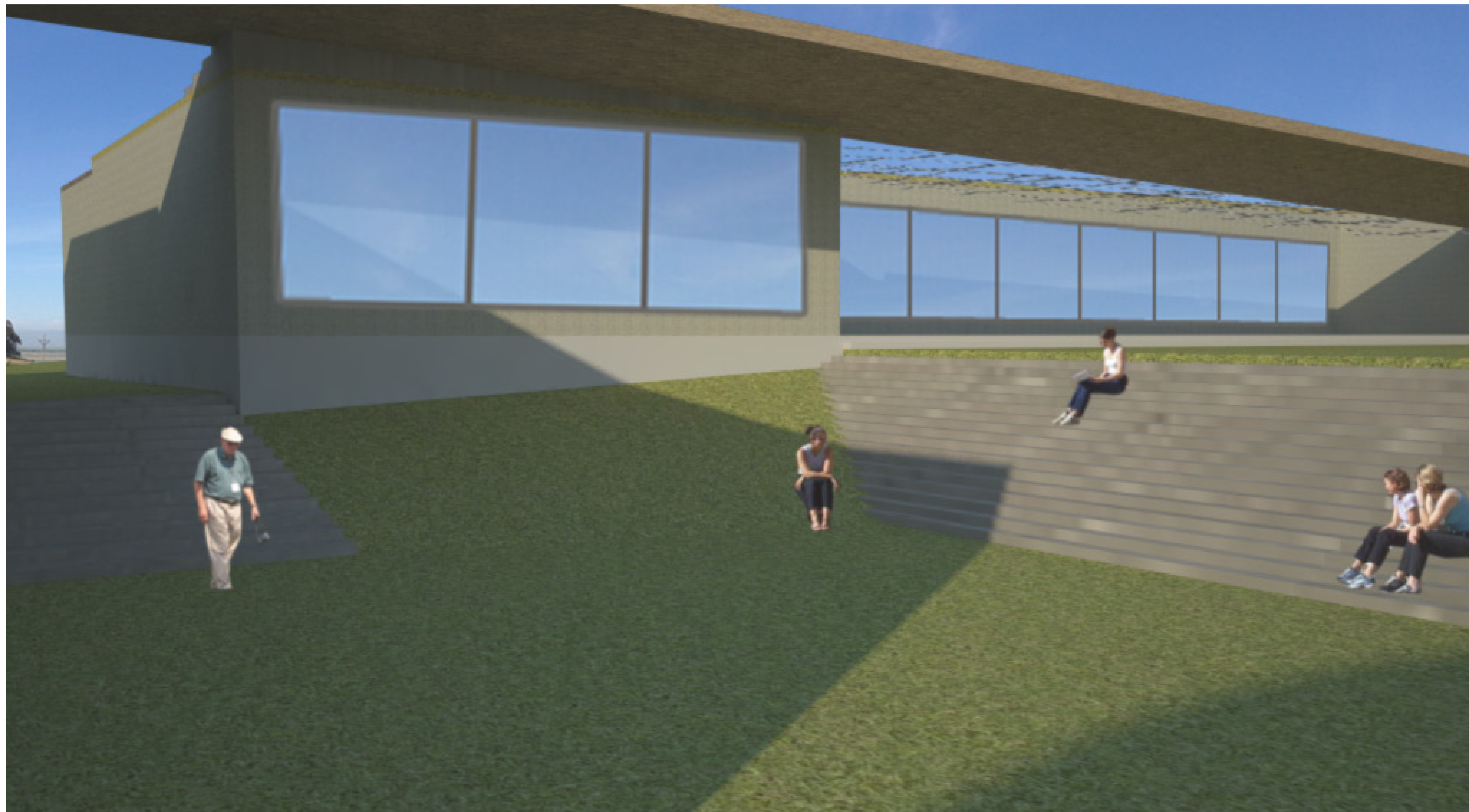
Framing the View



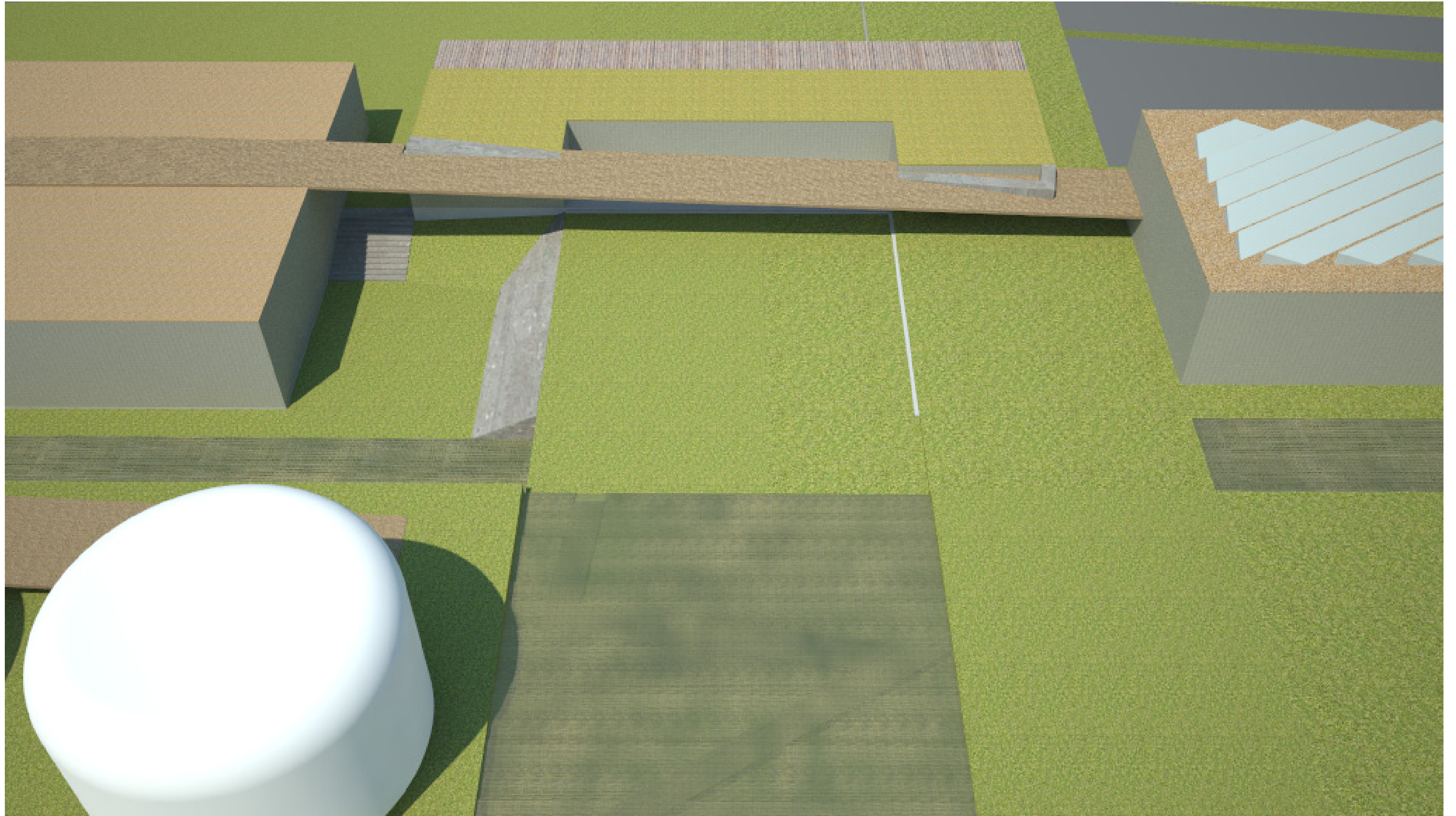
View 3



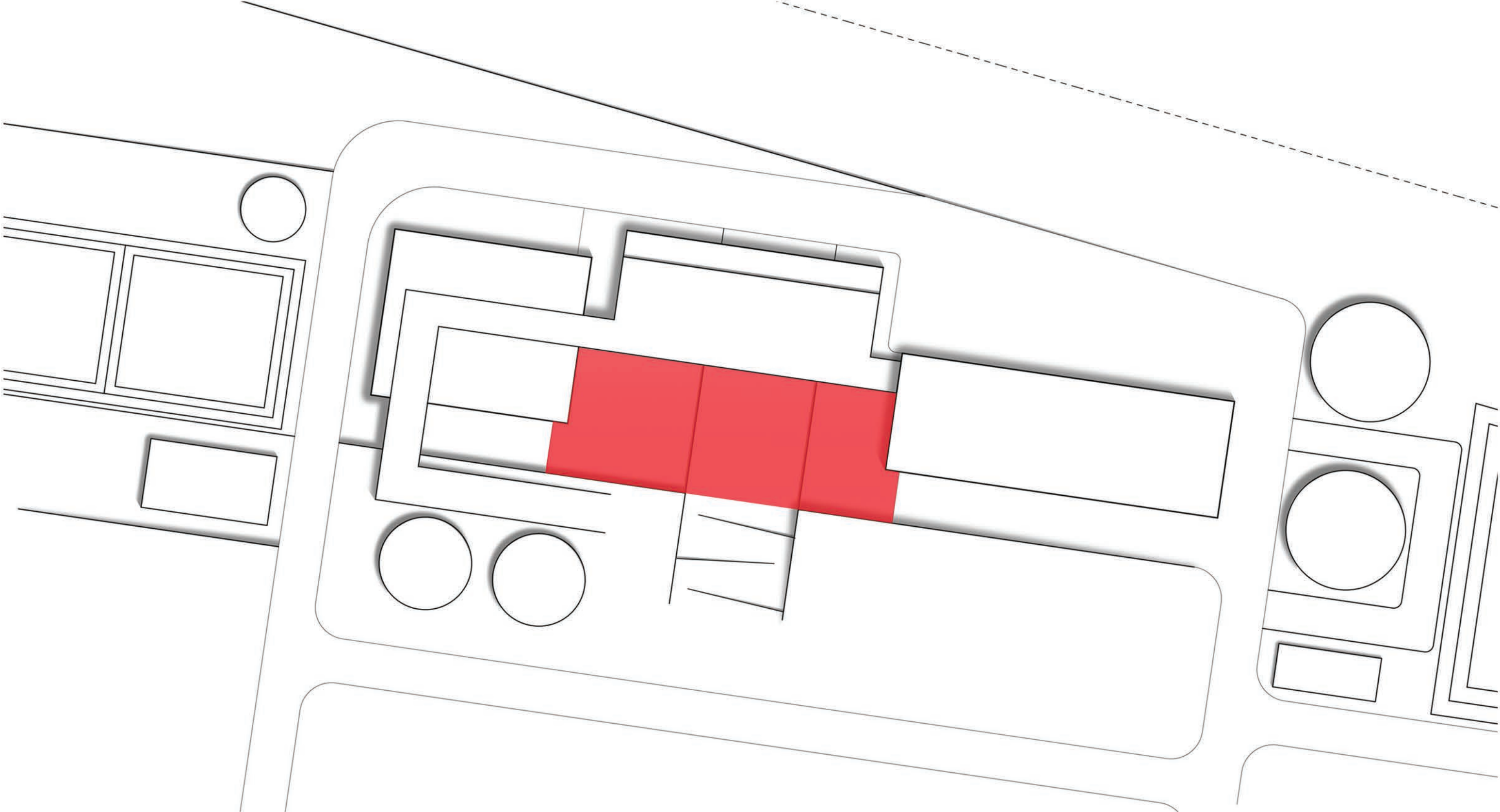
Gathering Space - Theater



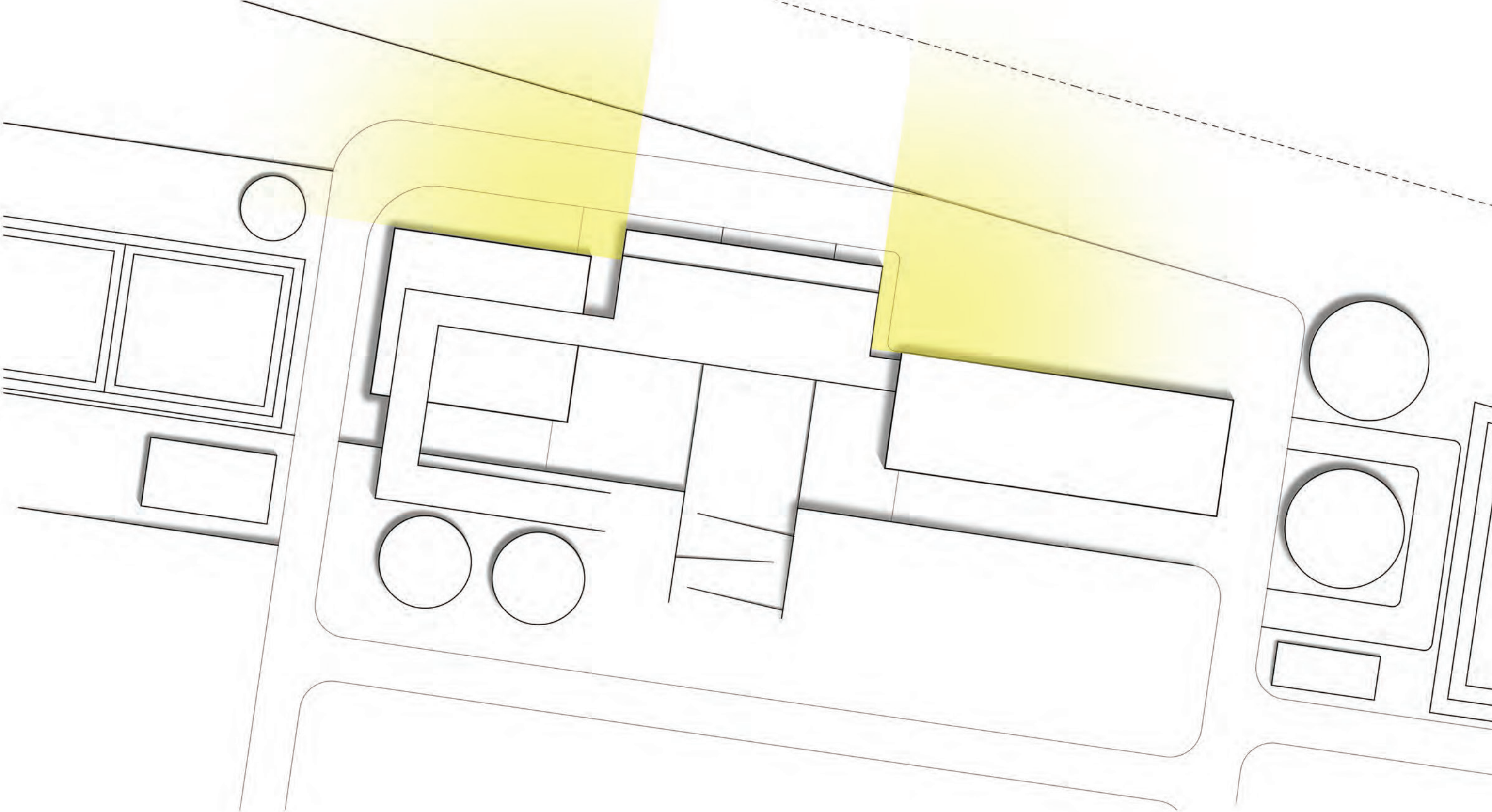
Courtyards



Main Courtyard

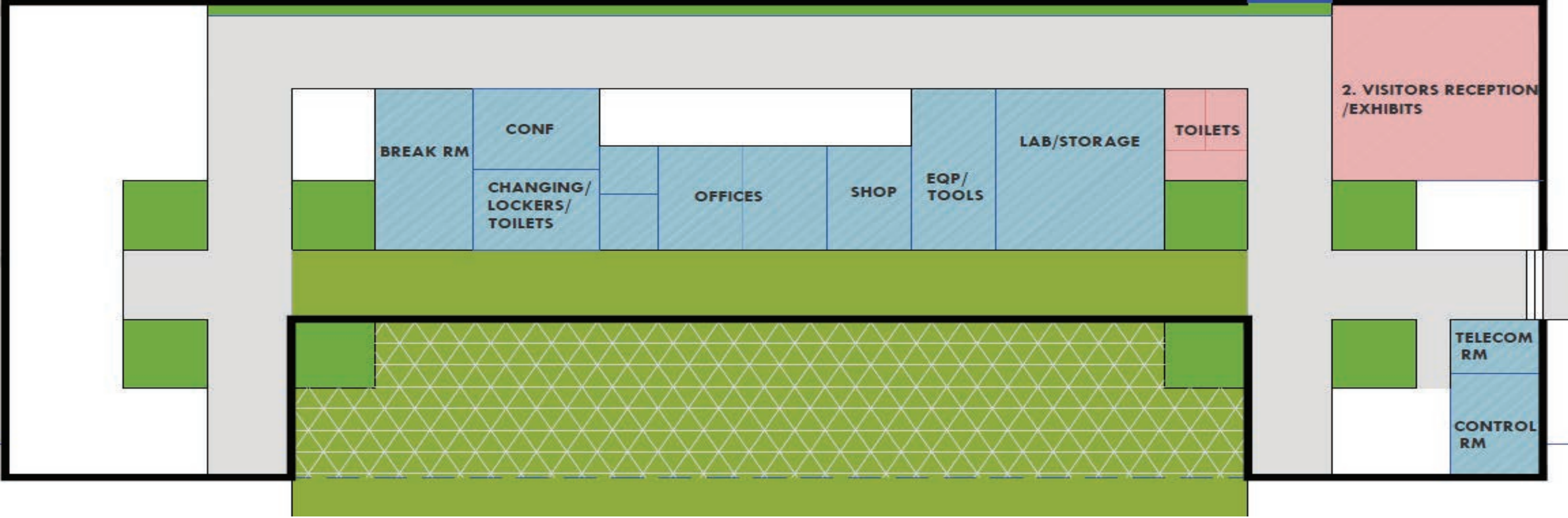


Discover Views



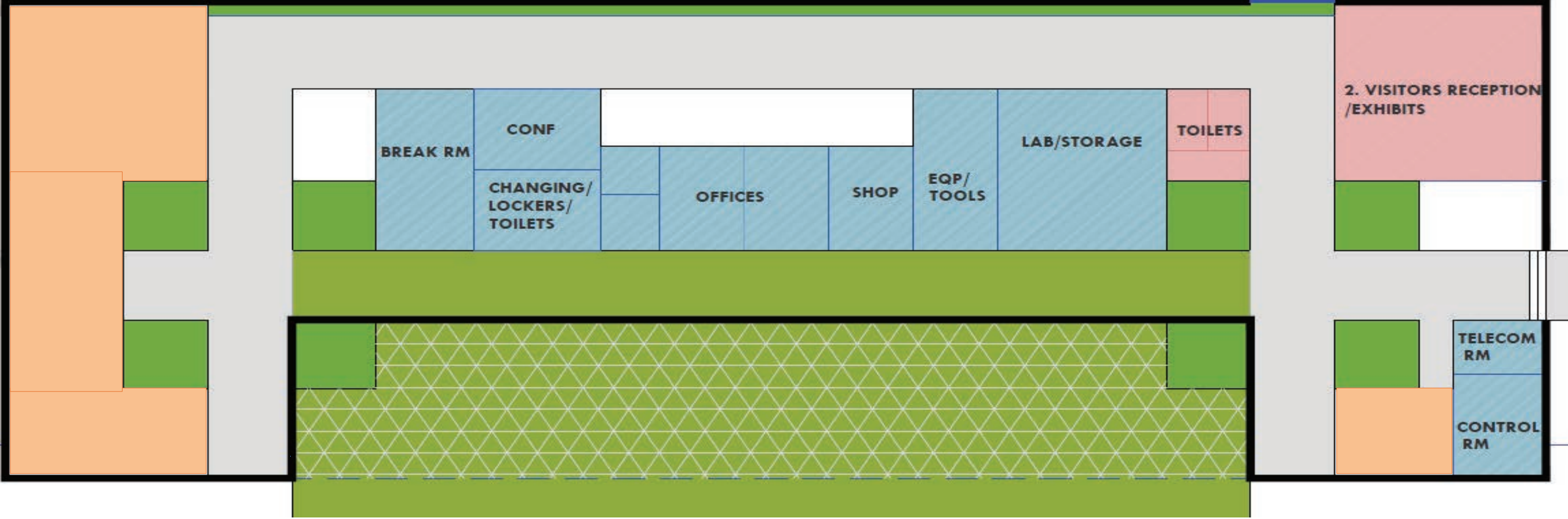
Administration-Interior Spaces

V I E W P R E S E R V A T I O N
Λ I E M Ъ В E 2 E B Λ V T I O И



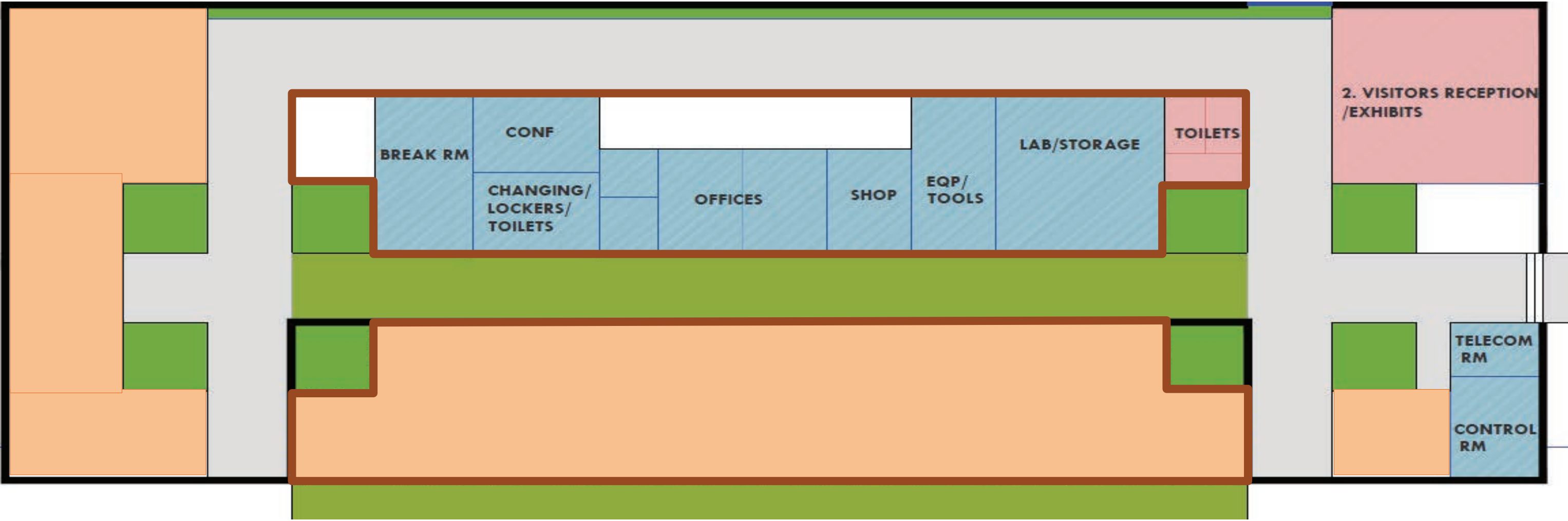
Administration-Minor expansion

V I E W P R E S E R V A T I O N
Λ I E M Ъ В E 2 E B Λ V T I O H



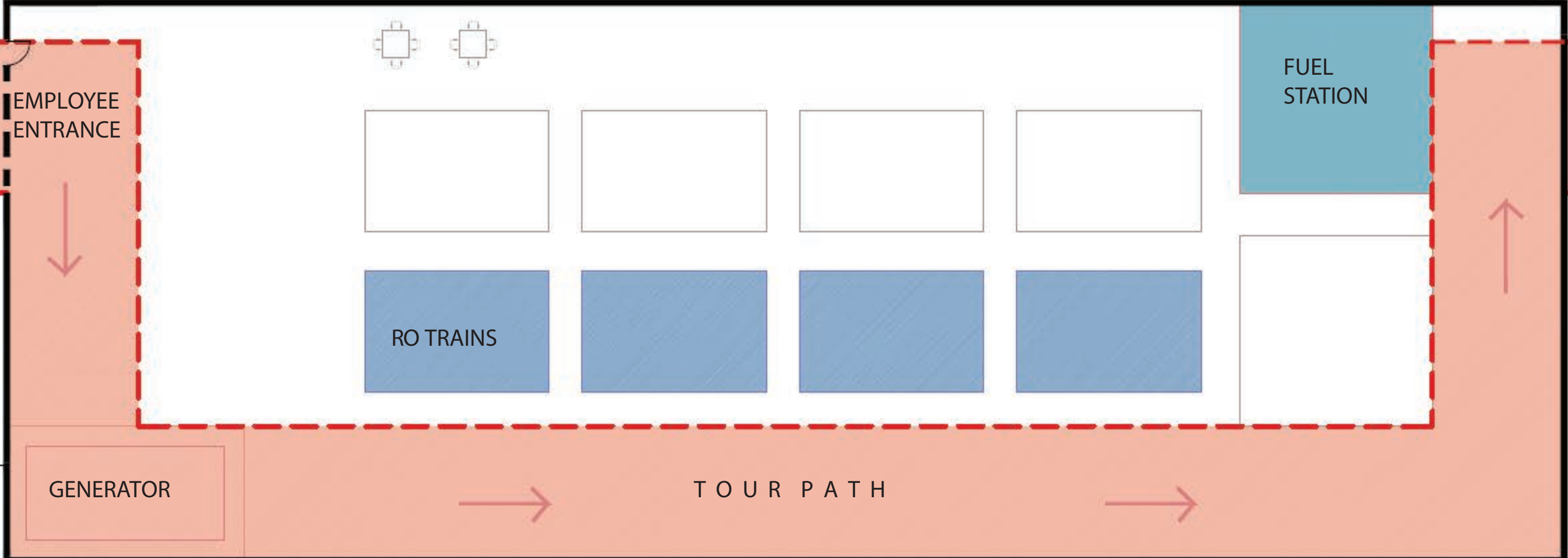
Administration-Major expansion

V I E W P R E S E R V A T I O N
Λ I E M Ъ В E 2 E B Λ V I O И



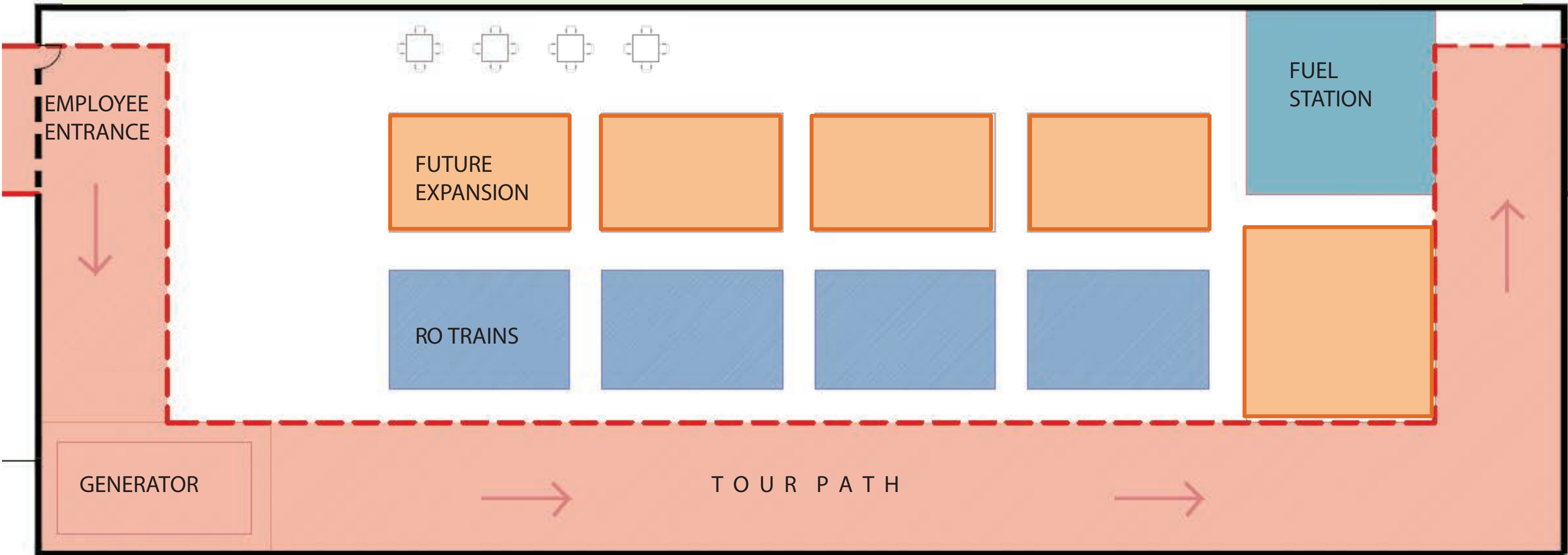
RO Building

VIEW PRESERVATION



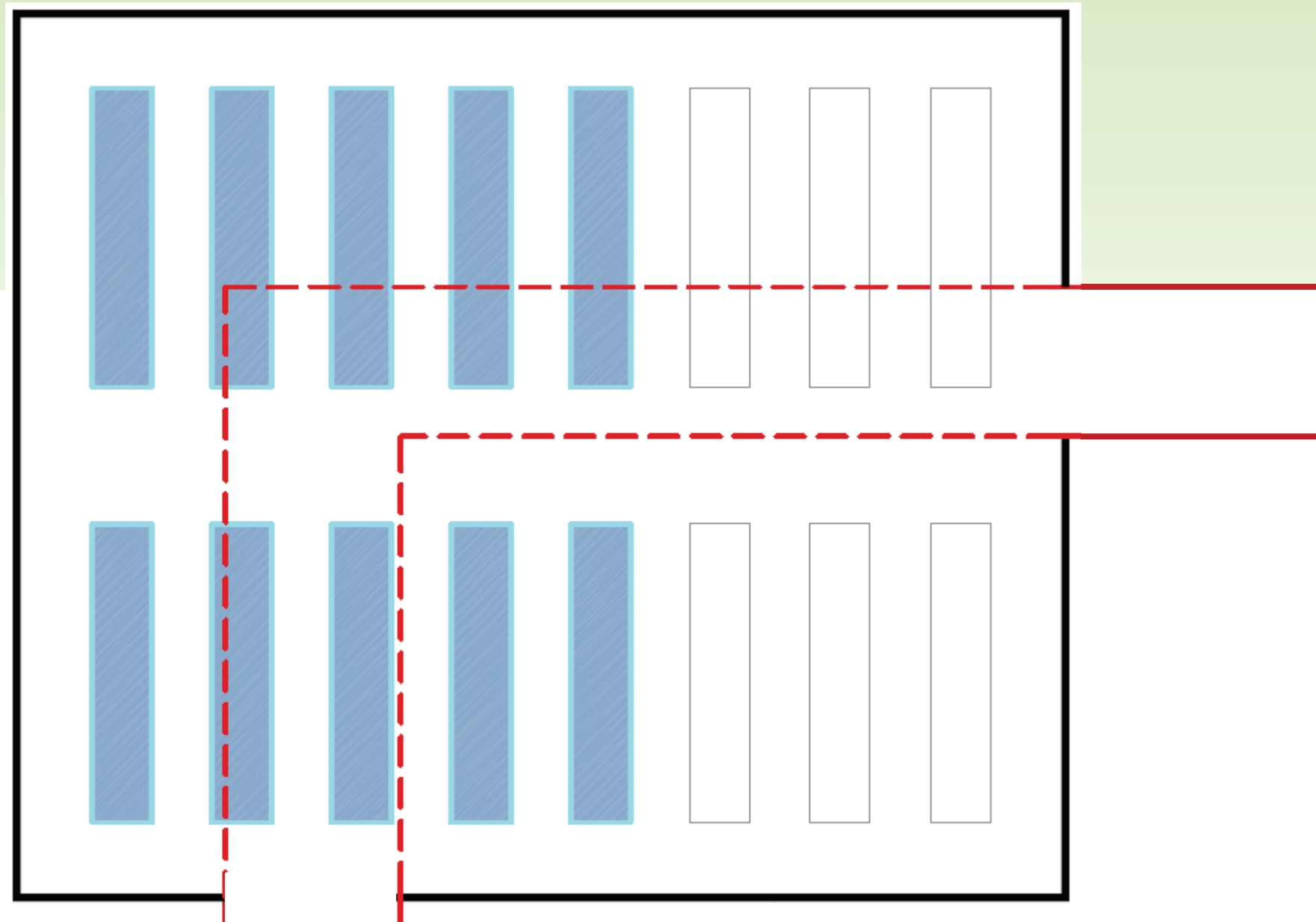
RO Building- Future expansion

V I E W P R E S E R V A T I O N N
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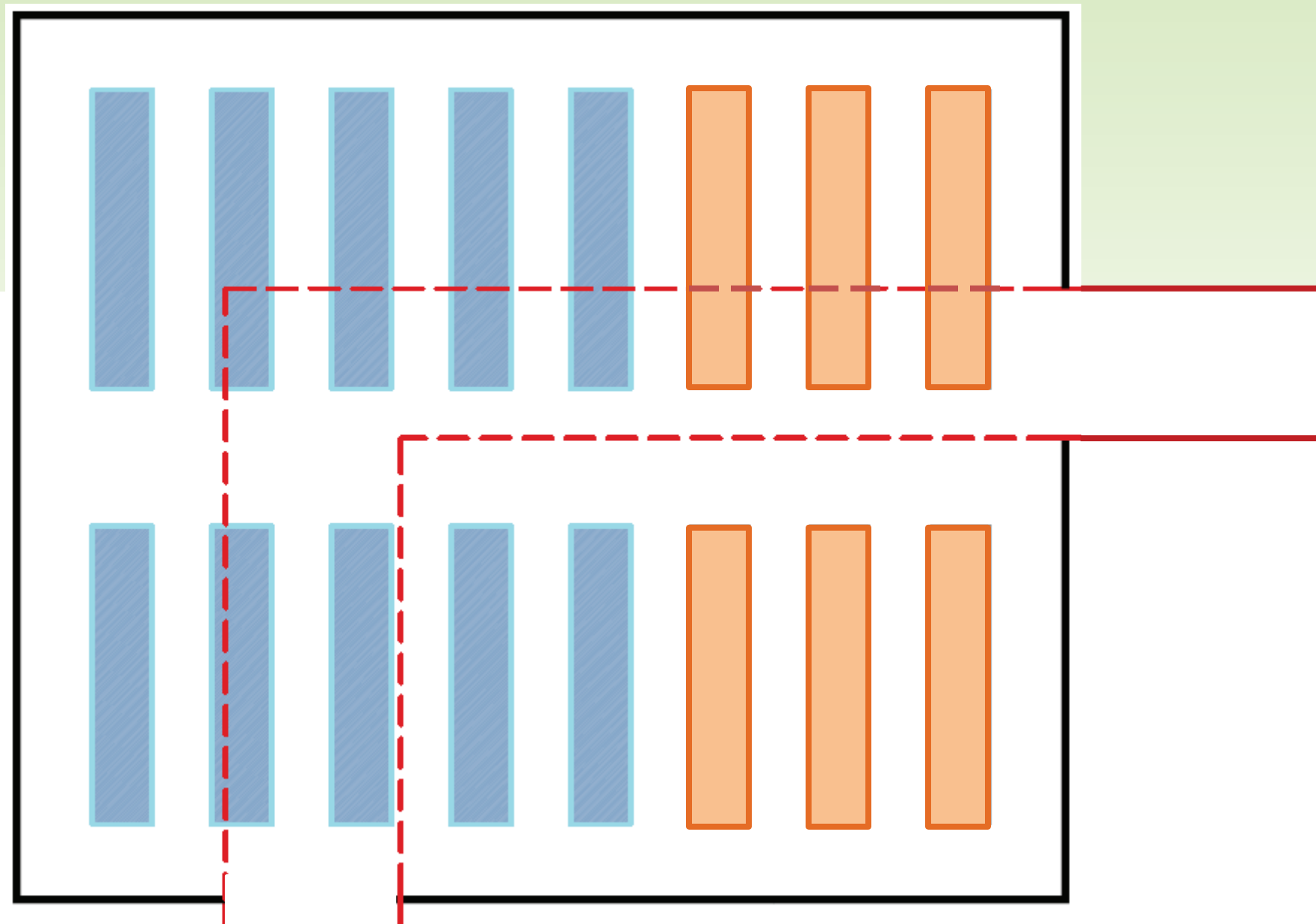
Media Filters

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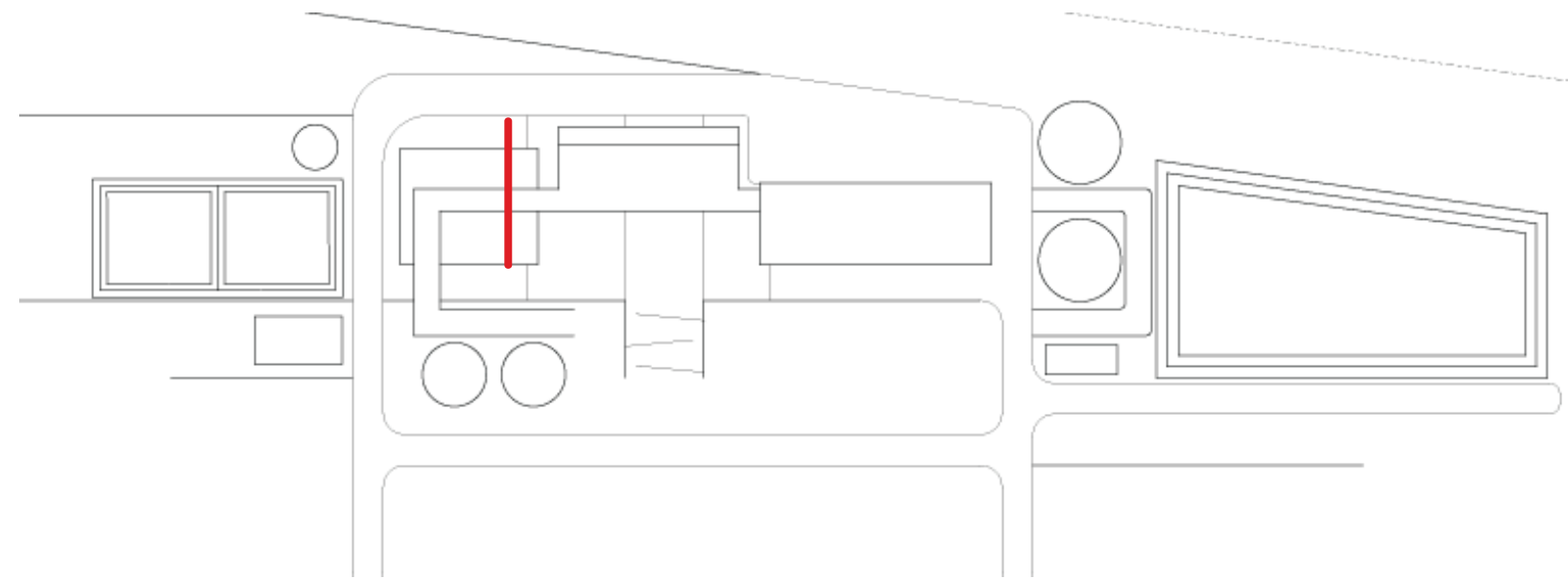
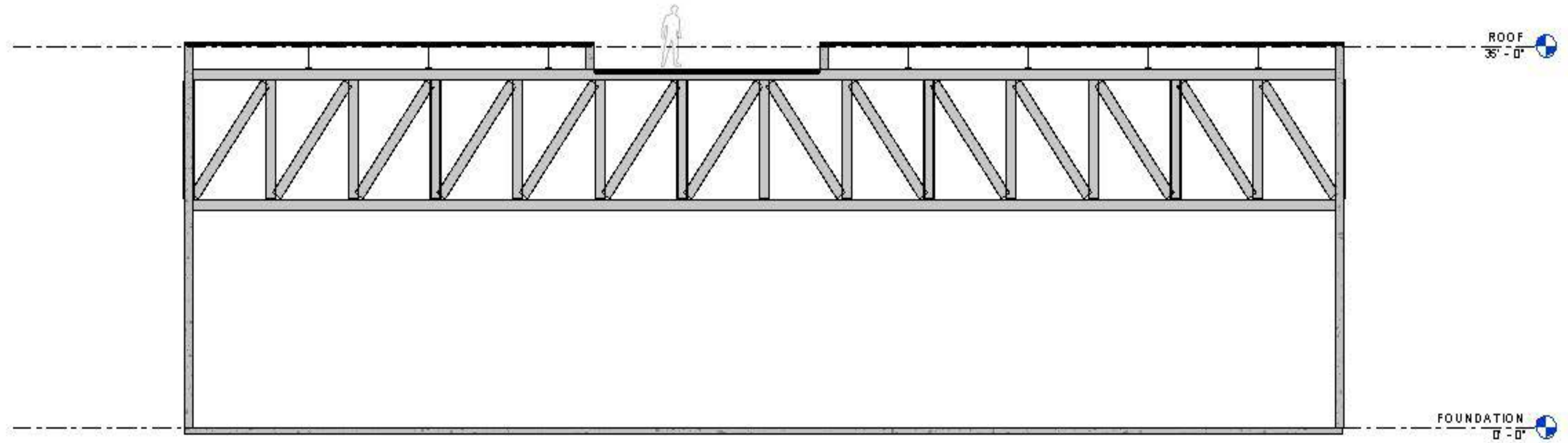


Media Filters - Future expansion

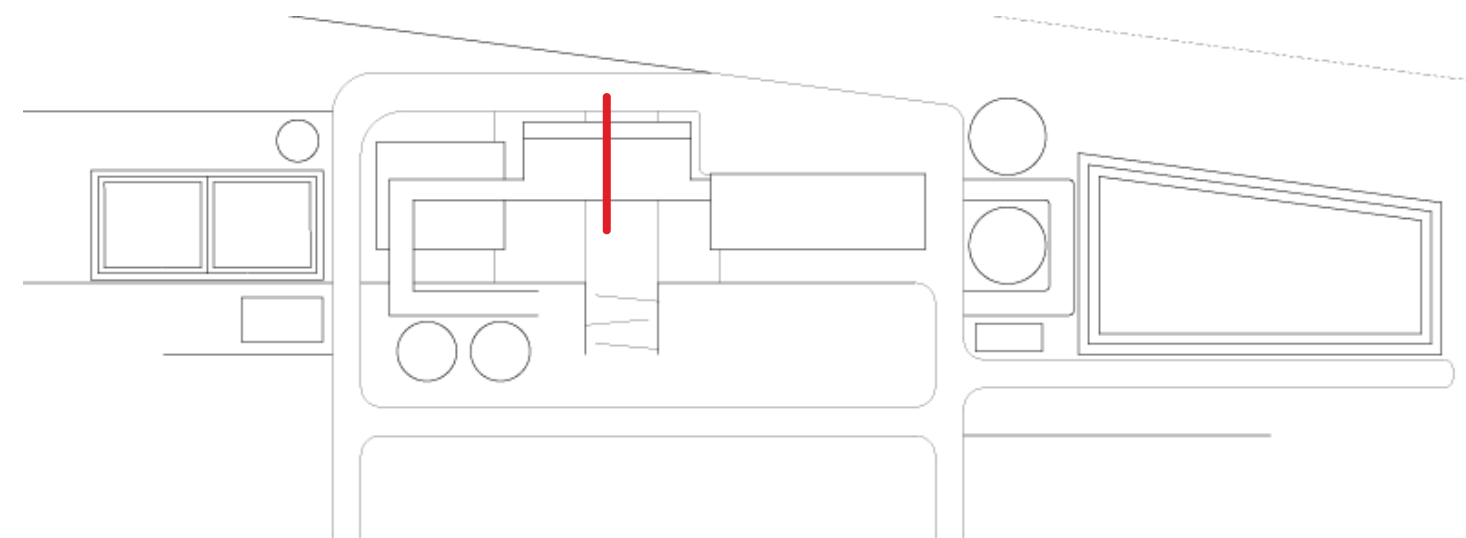
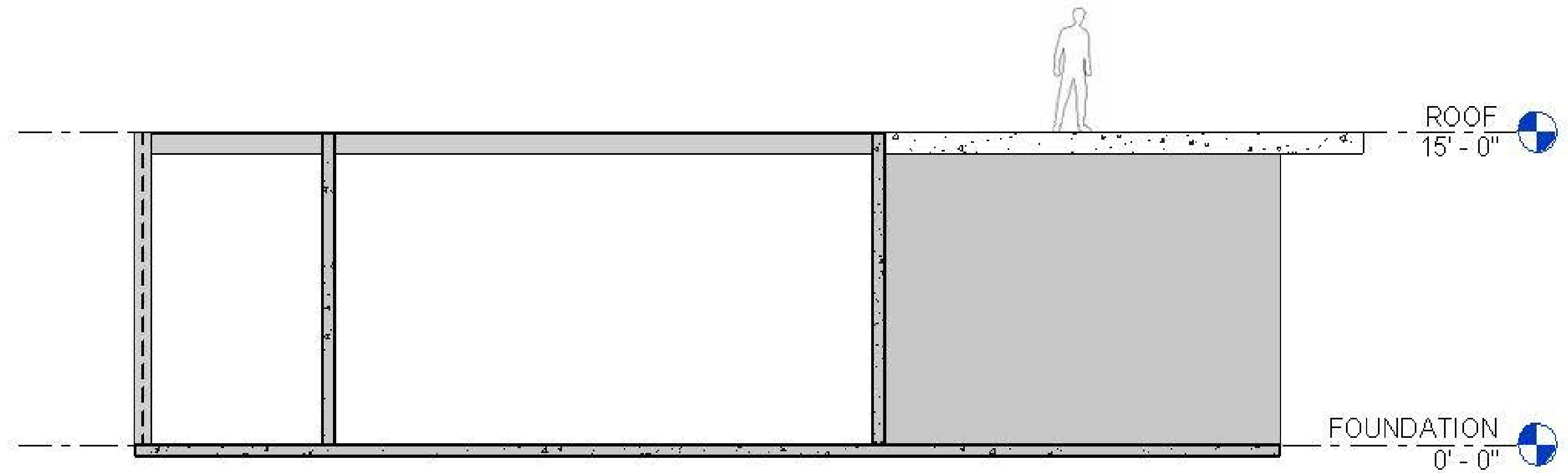
V I E W P R E S E R V A T I O N N
Λ I E M Ъ В Е 2 E В Λ V L I O И



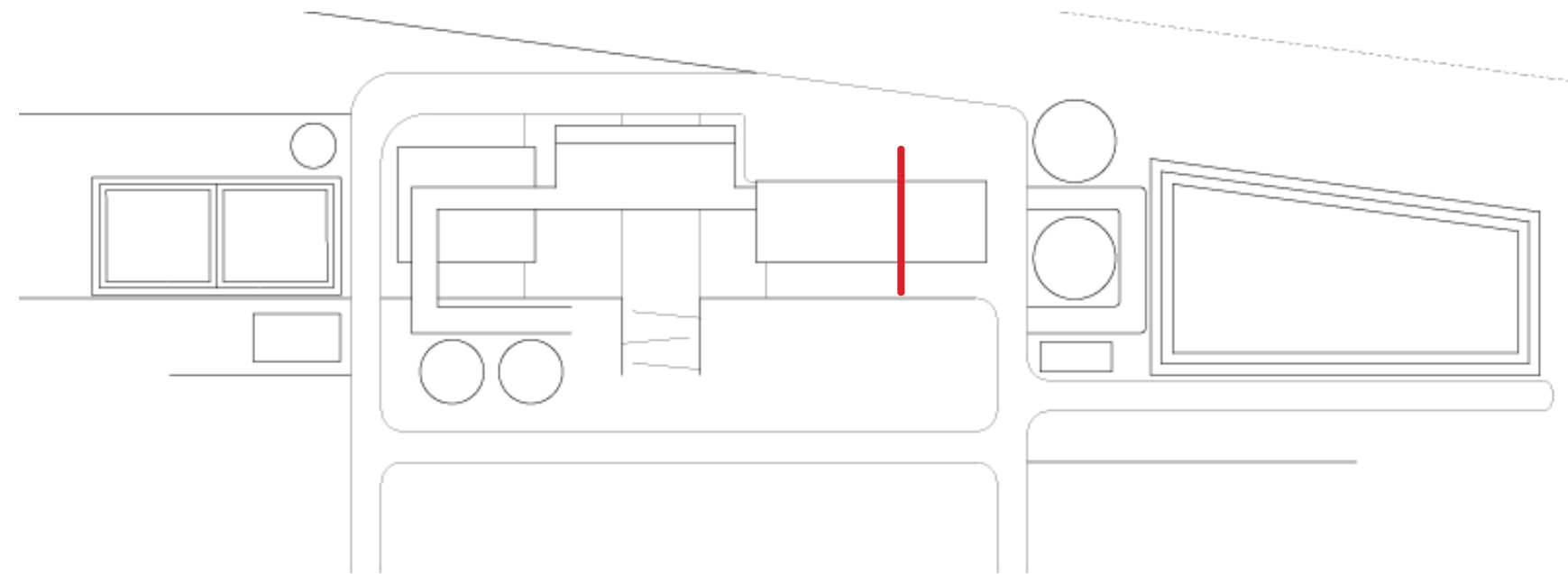
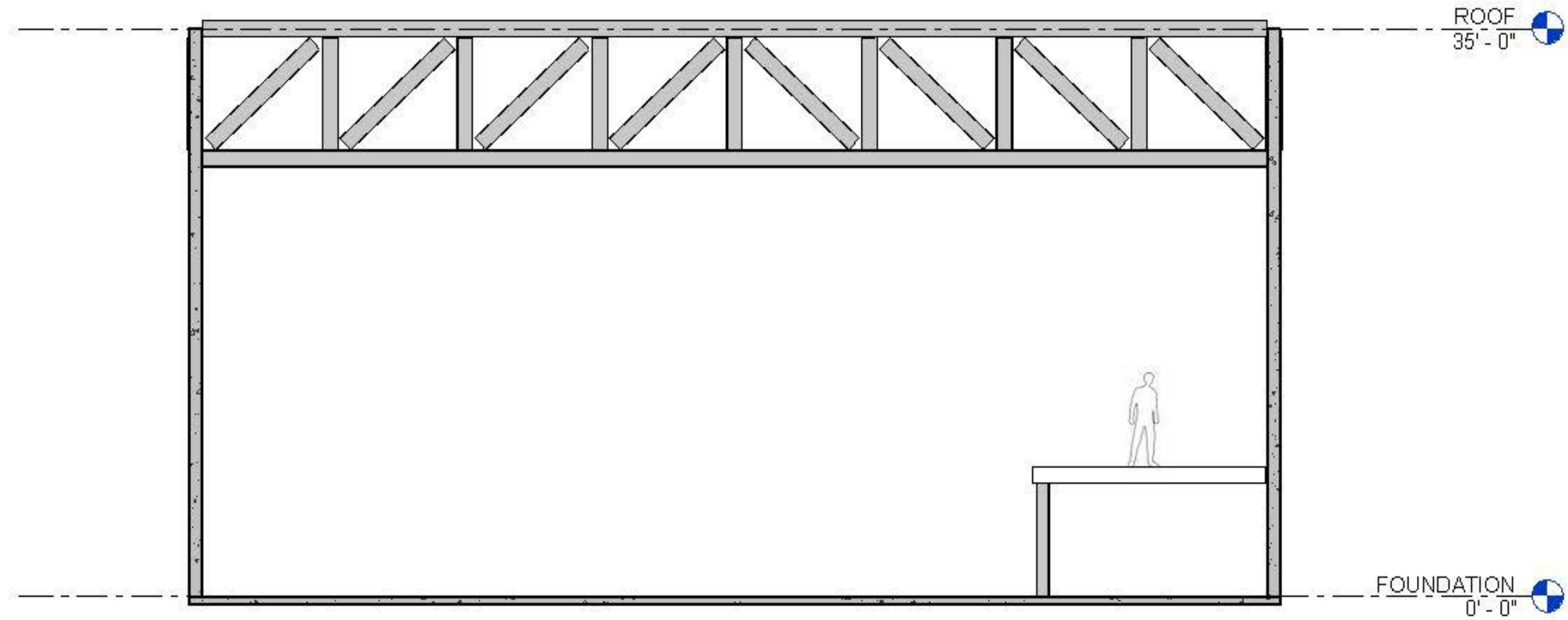
Media Filtration



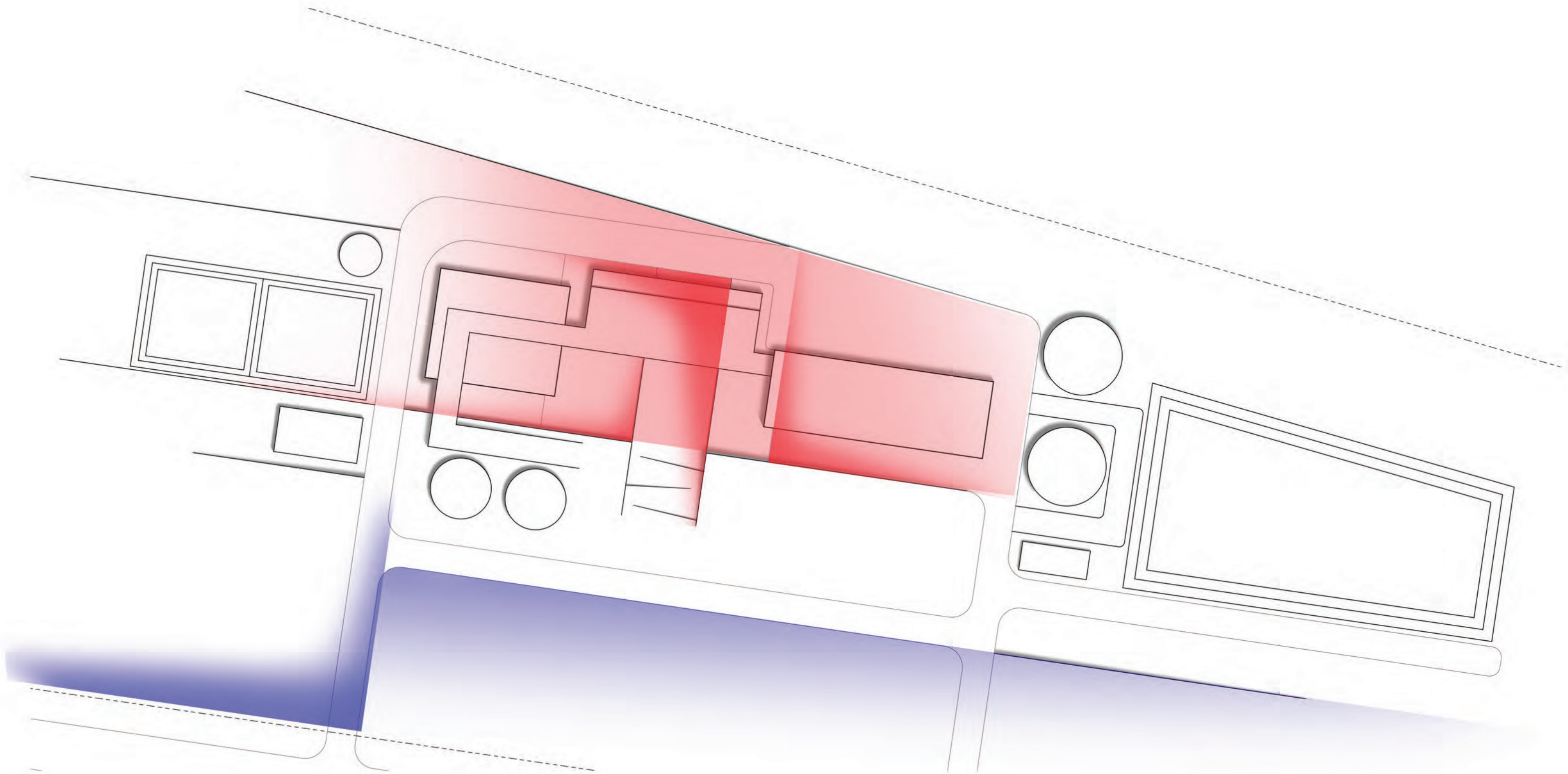
Administration



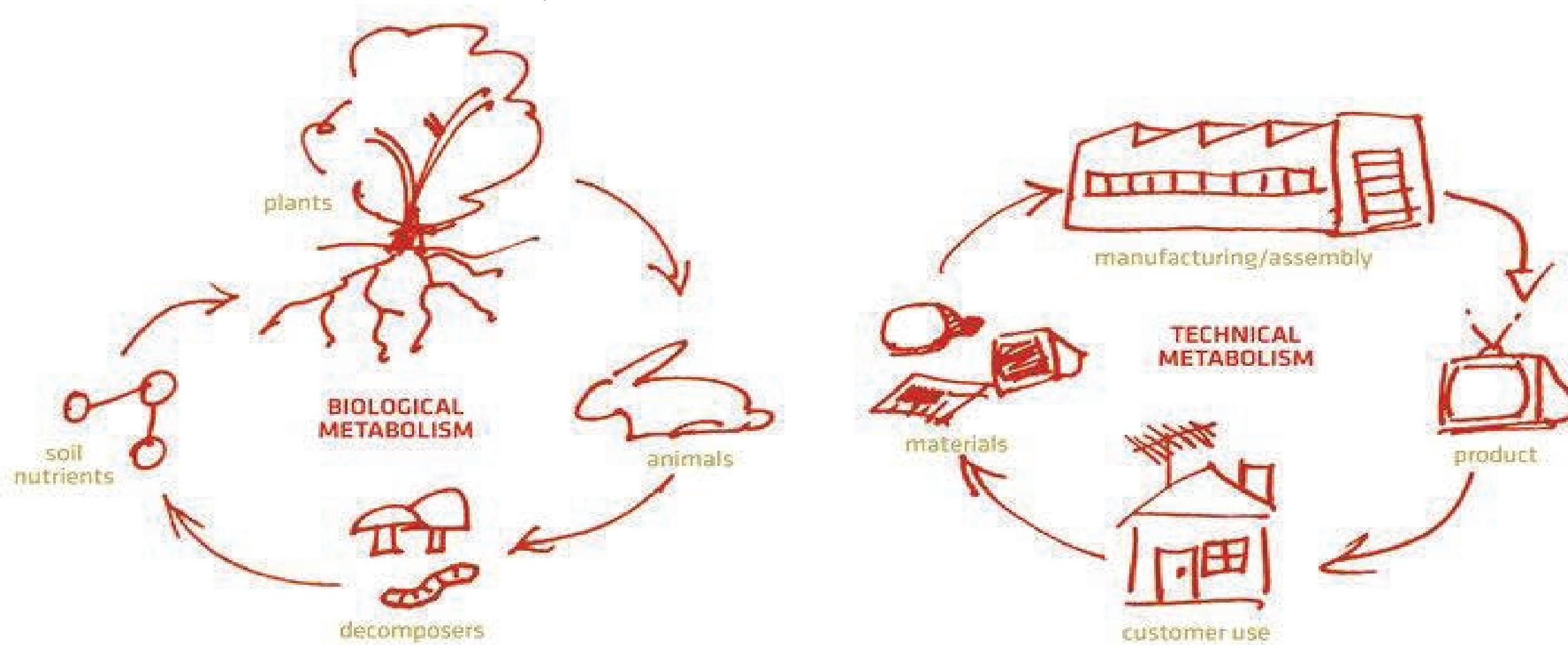
Reverse Osmosis



Site Definition



Materials and Building systems



Cradle to cradle is an innovative sustainable industrial model that focuses on design of products and a production cycle that strives to produce no waste or pollutants at all stages of the material's lifecycle.

Selection criteria's

Cost effective

Locally available

Minimum environmental impact

Reduced maintenance/replacement costs over the life of the building

Energy conservation-Resulting in minimum operation cost

Improved occupant health and productivity

Materials



Fit the color palette



Fly ash content concrete

Cork flooring

Permeable paving



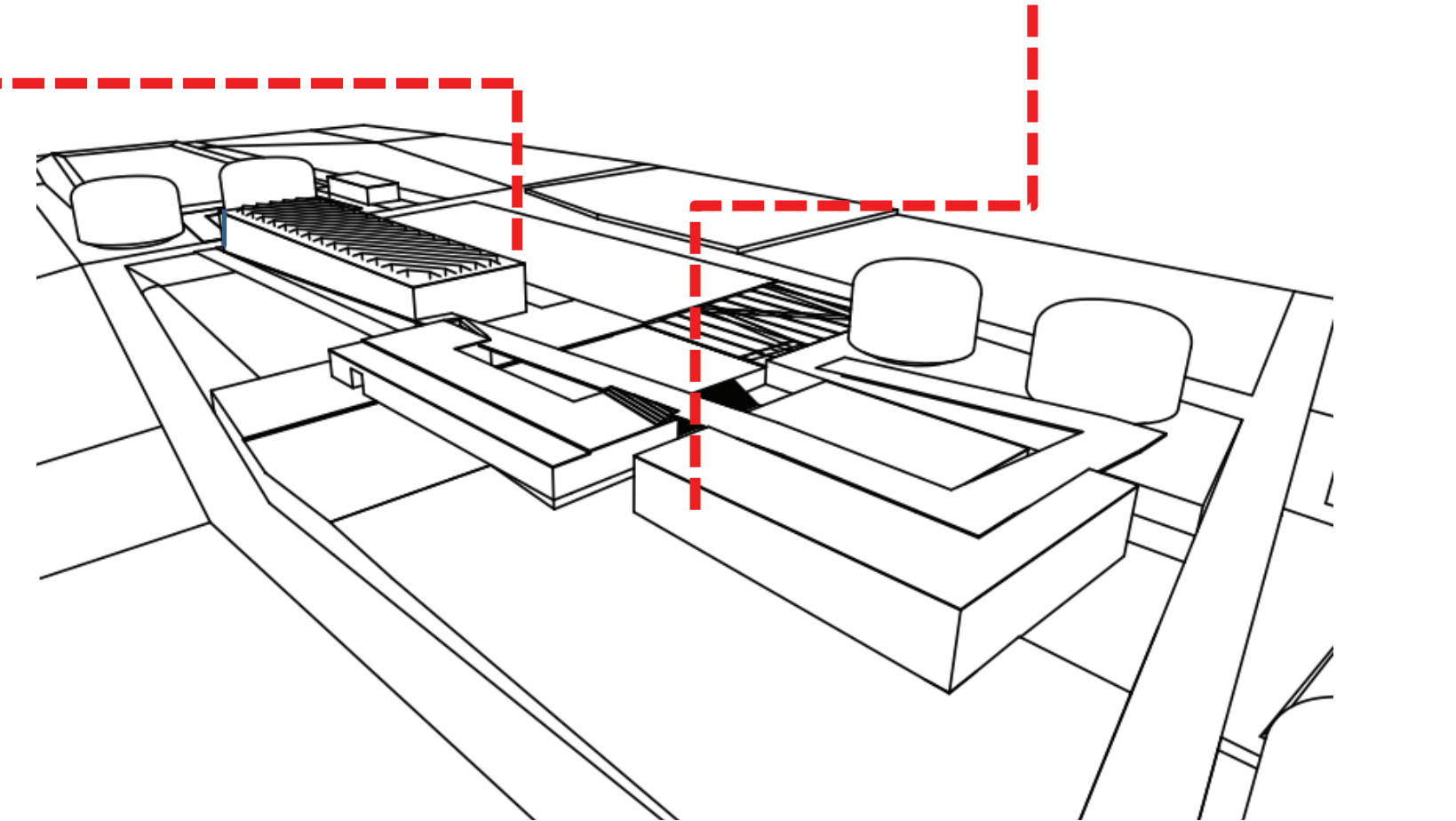
No VOC paints

Bamboo cabinetry

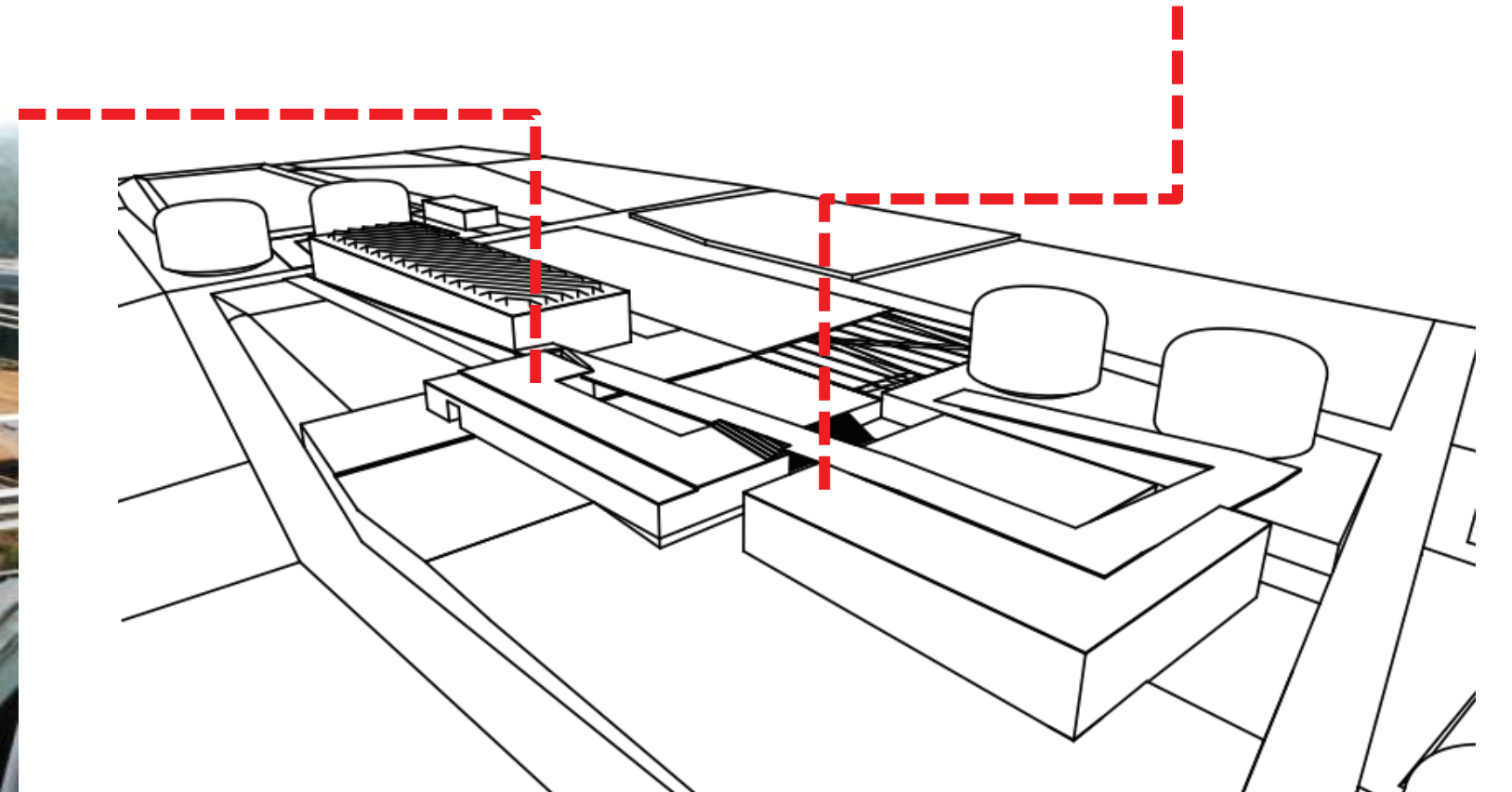
Dual flush toilets

Motion sensor lights

Materials and Building systems



Materials and Building systems



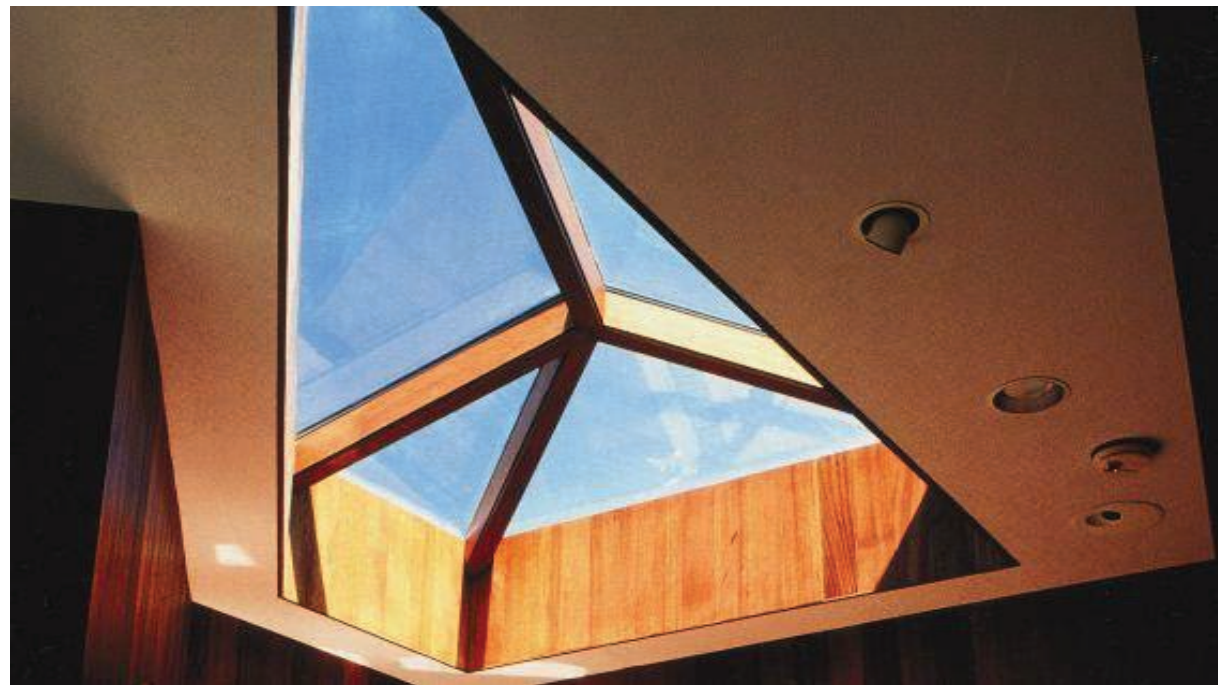
Materials and Building systems



Inner courtyards



Reclaimed materials

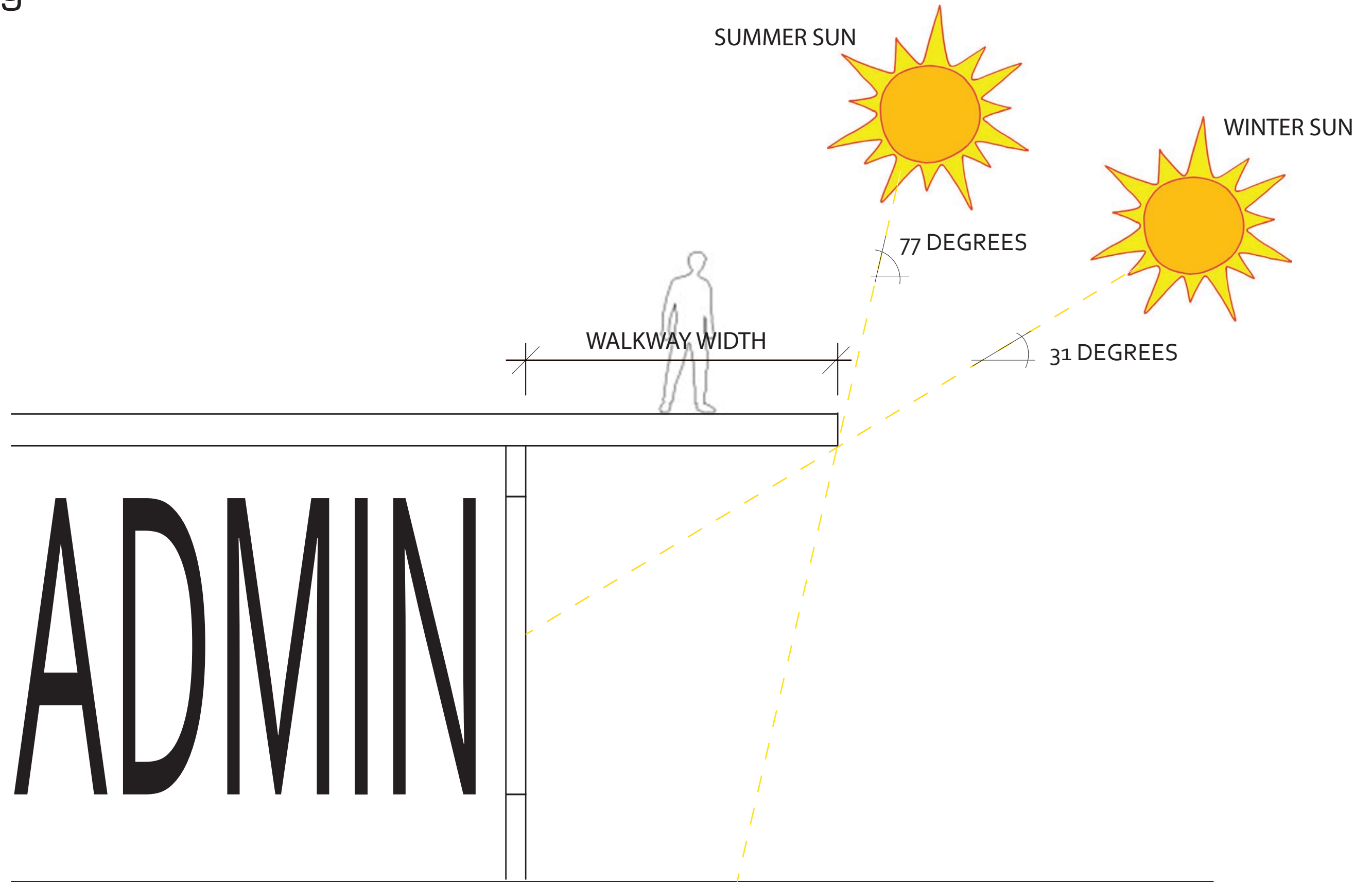


Minimum artificial lighting

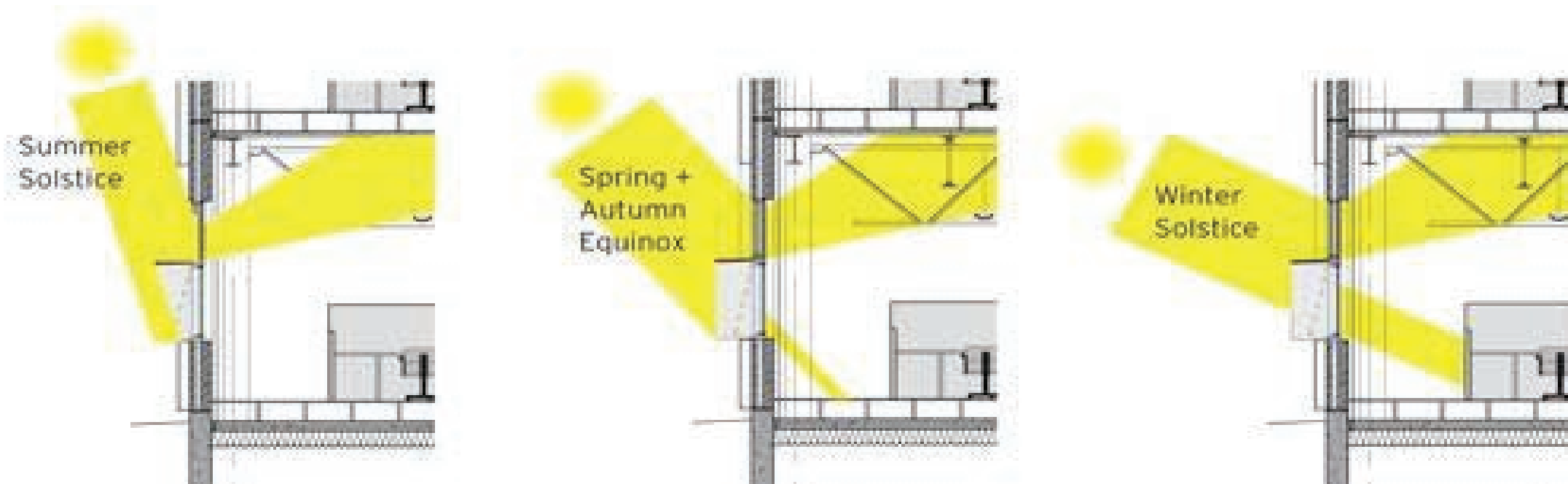


Renewable materials- Bamboo Cabinetry

Shading



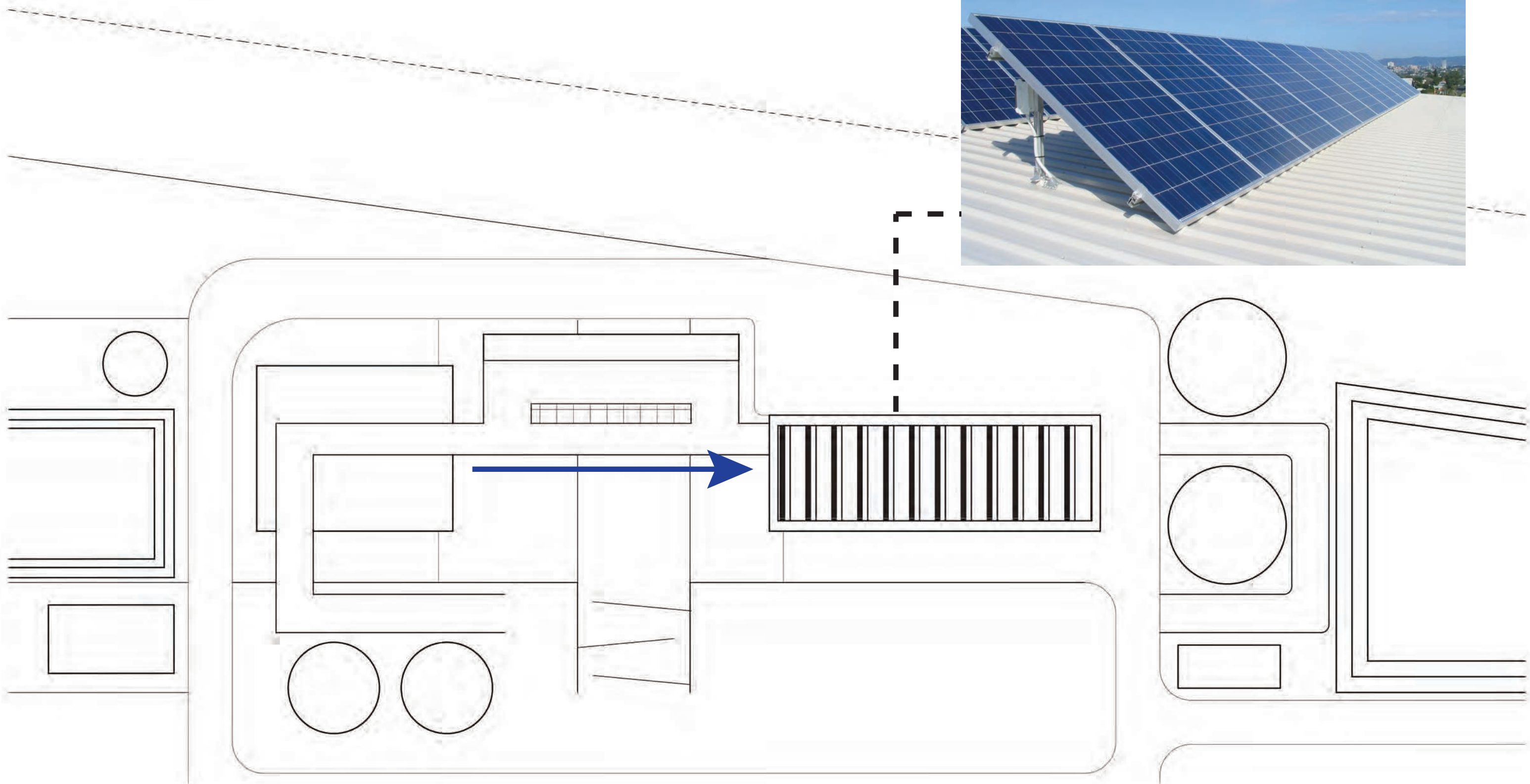
Materials and Building systems



Shading devices and innovative **light shelves** on **south-facing windows** reflect natural light deep into interior spaces shading lower windows from direct sun, reducing cooling loads and glare. The use of artificial lighting can be reduced or completely eliminated, depending on the space.



Energy Efficient

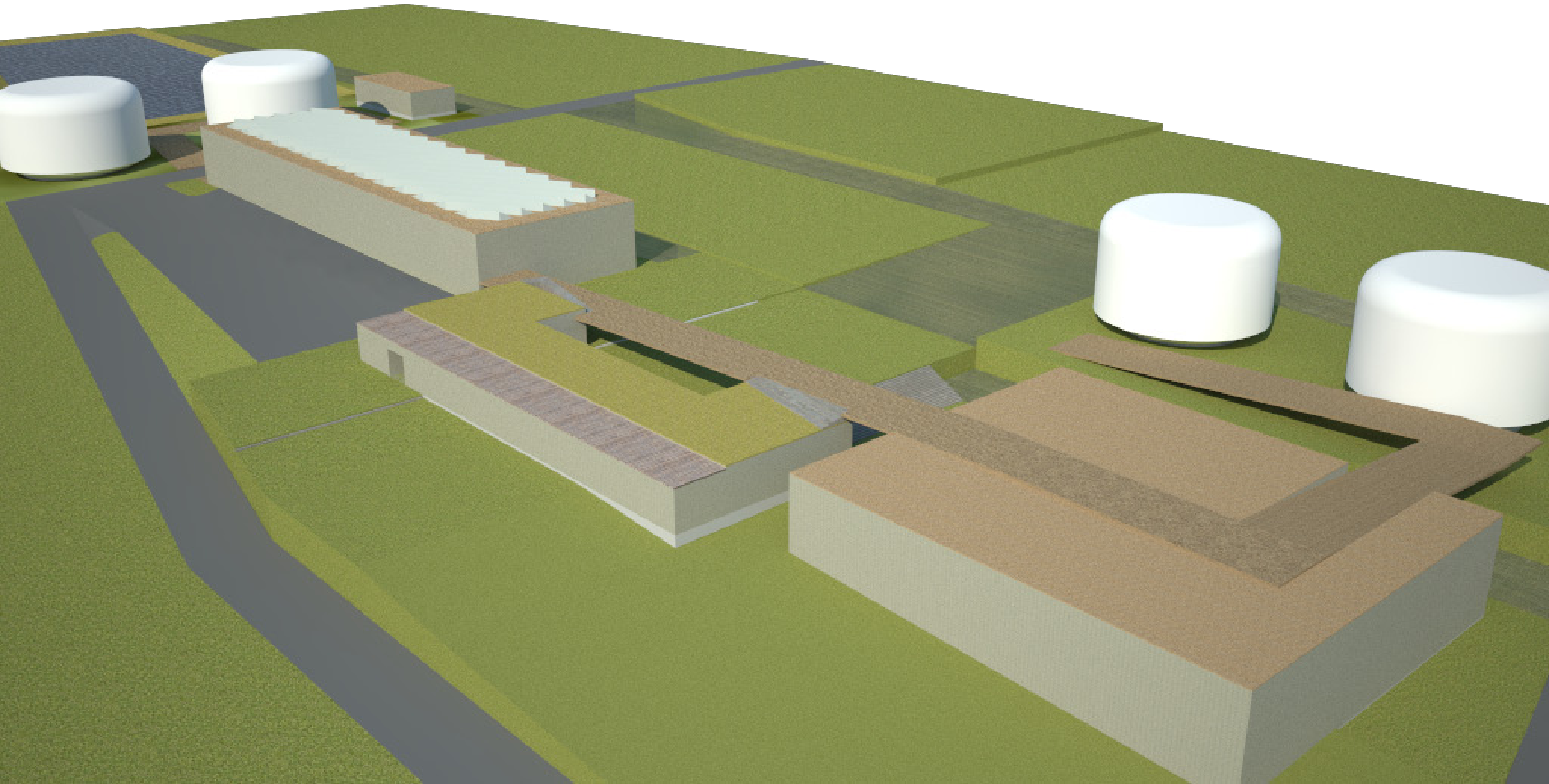


Energy

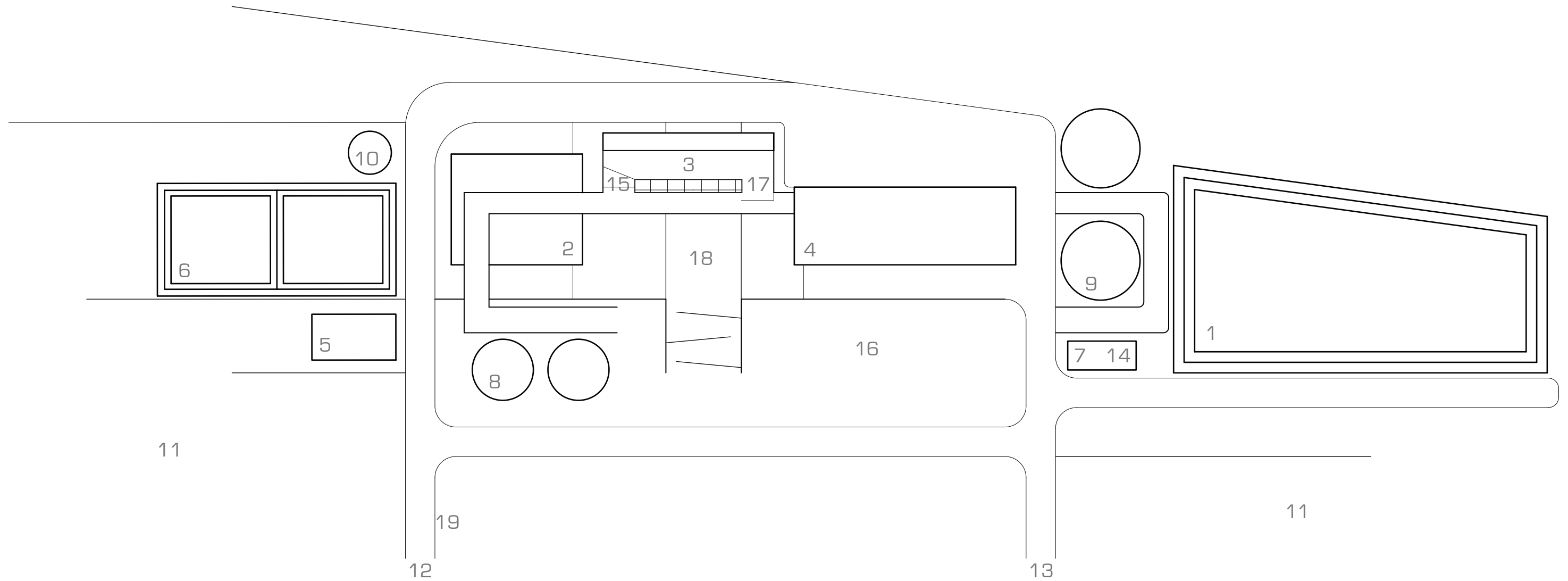
Solar PV Panels



Thank You



Site Plan



- | | | | | |
|--------------------------------|-----------------------------------|--------------------------|-------------------|--------------------|
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| 2. Multi Media Filters | 6. Backwash Wastewater Ponds | 10. Backwash Supply Tank | 14. Generator | 18. Main Courtyard |
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