



The Green Center

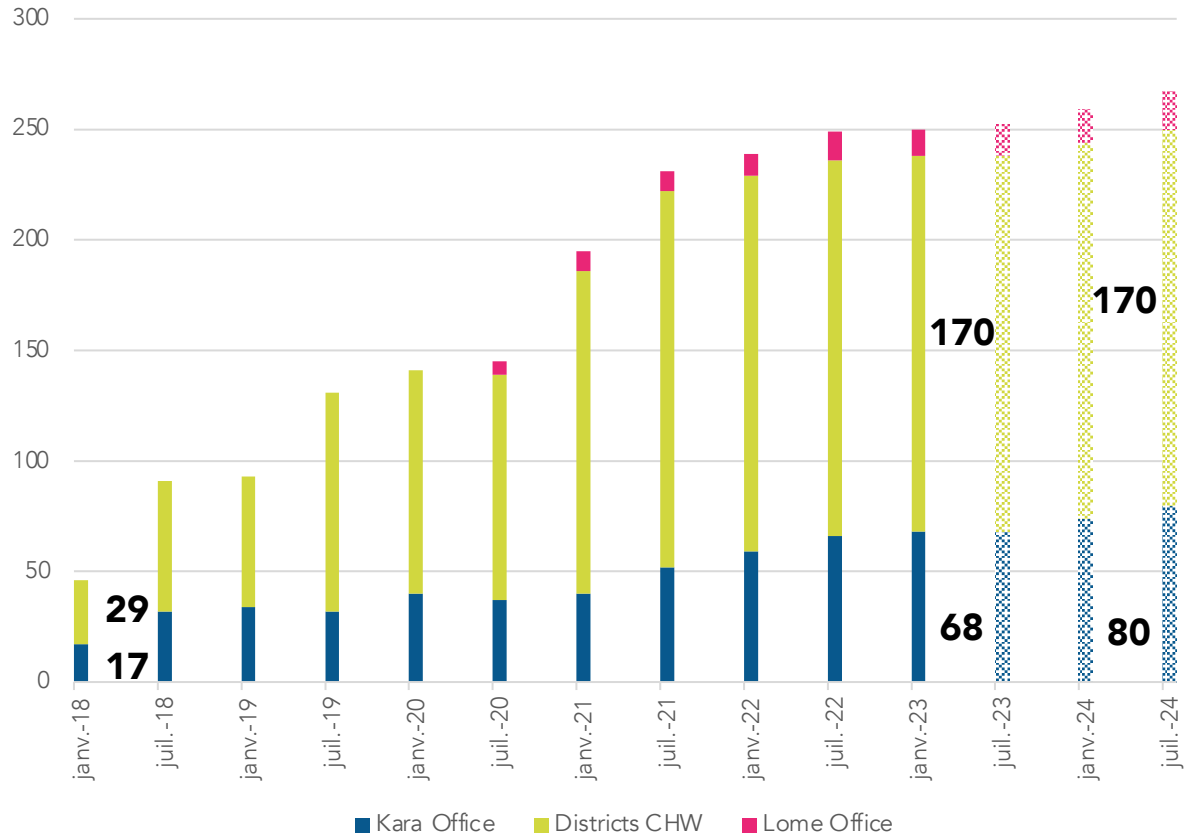
- *Integrate Health's Headquarters* -



The Challenge

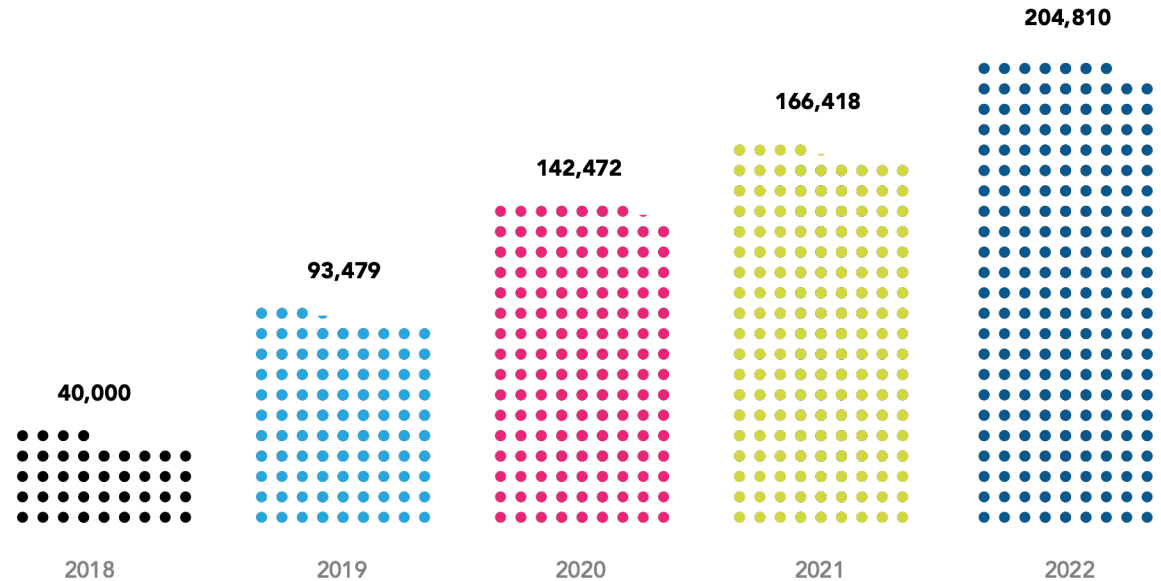
Integrate Health has **expanded 5x** in the past four years ...

Evolution of the number of employees per site



...with plans to more than **double its impact** over the next four years.

Population served growth



Integrate Health has outgrown all of the existing infrastructure in the entire city of Kara.

But rather than just build an office...

The Solution

...We are creating a bold new space.





A model of
sustainable
design



Anchored in
the local
community



A training facility
for healthcare
expert

The Green Center

This is how Integrate Health will launch its next phase of **growth**.

It will provide a hub to **advance primary healthcare** in Northern Togo, that is accessible and anchored in the surrounding community. The site will model best-practices in regenerative design.



Main characteristics



Climate

High performing building that uses regenerative & sustainable design strategies. Connected to the outdoors, it rebuilds biodiversity on site.



Community

Dedicated spaces for gatherings, events, and exercising are accessible to the community. The building's design will showcase Togo's unique culture.



Collaboration

Designed for different ways of collaboration, it promotes interactions, trainings and exchange of ideas. It will foster our collaboration with the Ministry of Health.

Designed & Built by Women



Lysette Niragira

Design Director, MASS

Lysette is serving as the lead architect on the project. She designed multiple educational and healthcare projects since she joined MASS in 2015.



Ayawavi Attisso

Project Manager, Construction for Change

Ayawavi is a civil engineer with a passion to build health facilities. She leads the renovation of various health centers in rural areas and is working on the construction of an infectious disease center for the Ministry of Health.

The Climate

“We believe that health and climate justice are inextricably connected.”

Togo's climate

Togo has a tropical climate and is experiencing longer dry periods with higher temperatures. The Northern region of the country is experiencing faster rates of temperature increase than the South.

The Green Center will deploy **cutting-edge regenerative and sustainable design strategies**, future proofing IH's headquarters as well as reducing the organization's carbon footprint.



Stone wall
& breezeblock

Double ventilated roof

Exercising Trail



Climate accountability strategy

The Green Center is an ambitious commitment as part of a larger climate accountability strategy to:

01

MEASURE

Measure and analyze carbon footprint each year in comparison with 2019 baseline.

02

REDUCE

Reduce emissions by 30% by 2030. IH will set short and medium term goals to get there.

03

MITIGATE

Commit to full carbon neutrality by 2025, by offsetting the carbon we cannot reduce and investing in high-quality mitigation efforts.

A Climate lens

- Integrate Health's track record -

48% of Togolese live off the electricity grid. In some rural communities, this percentage can reach 92%.

Togo's aging electricity grid would require massive investments to cover these areas. Renewable solutions offer viable alternatives and enhance energy resilience.



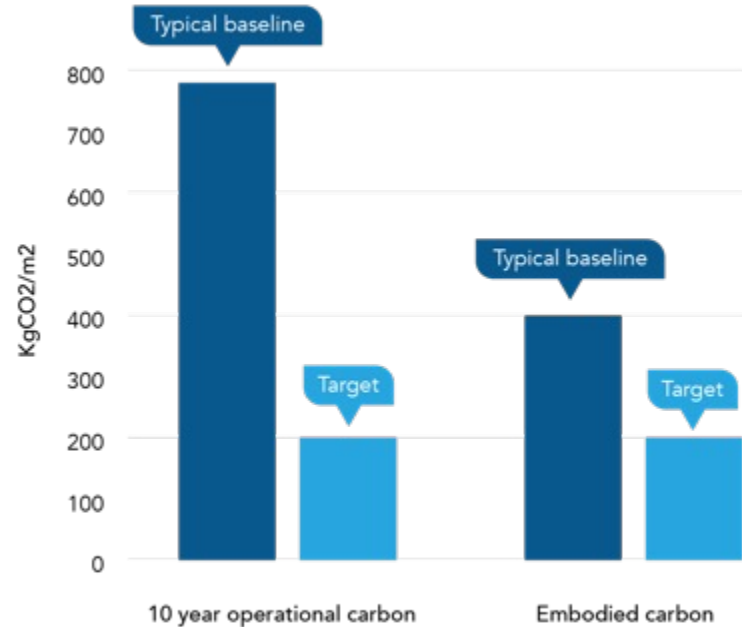
20

health centers renovated by Integrate Health in rural areas of northern Togo, equipped with solar panels.

Carbon targets

In hot humid climates, it is possible to **reduce operational carbon by 50%** by adopting passive and hybrid comfort strategies. With renewable energy such as solar, a greater reduction is possible.

Embodied carbon targets will balance reduction of operational carbon loads, material availability and expertise. We aim to have a 50% reduction in embodied carbon.

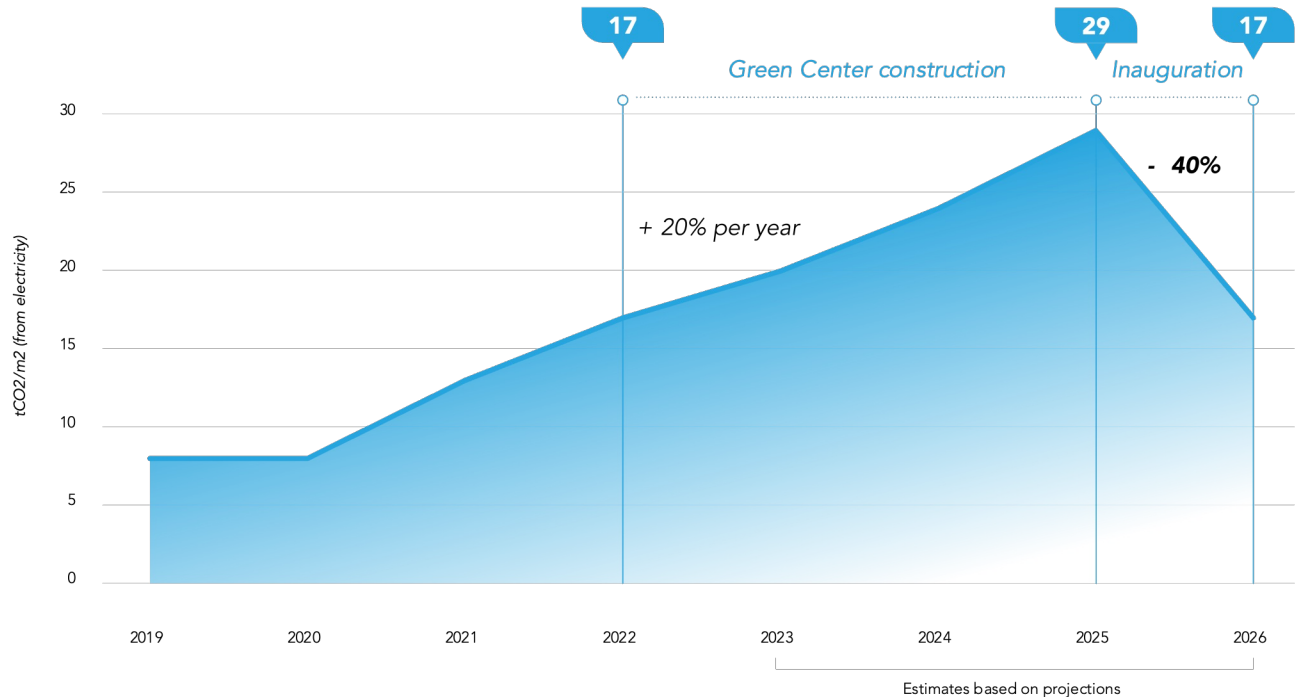


Carbon baselines for offices in hot and humid climates and project targets

Estimated impact

Integrate Health expects the opening of the Green Center to reduce operational carbon emissions for Kara offices by at least 40% within a year after construction.

This will take us back to 2022 levels and help us advance our climate accountability strategy.





Maintenance
& recycling

Rainwater
tank

Baobab

Solar PV

Raingarden

Light painted
double roof

Exercising Trails

The Green Center will prioritize rainwater harvesting and passive cooling and use solar and wind energy to power the building.

Materials

The selection and use of **locally sourced material** was maximized for carbon reduction and cost efficiency. For example, stone masonry, compressed earth block, steel are all sourced locally, and aluminum is sourced regionally.



STONE MASONRY
WALL



STONE WALL &
BREEZEBLOCK



CSEB/BTC w/
EARTH PLASTER



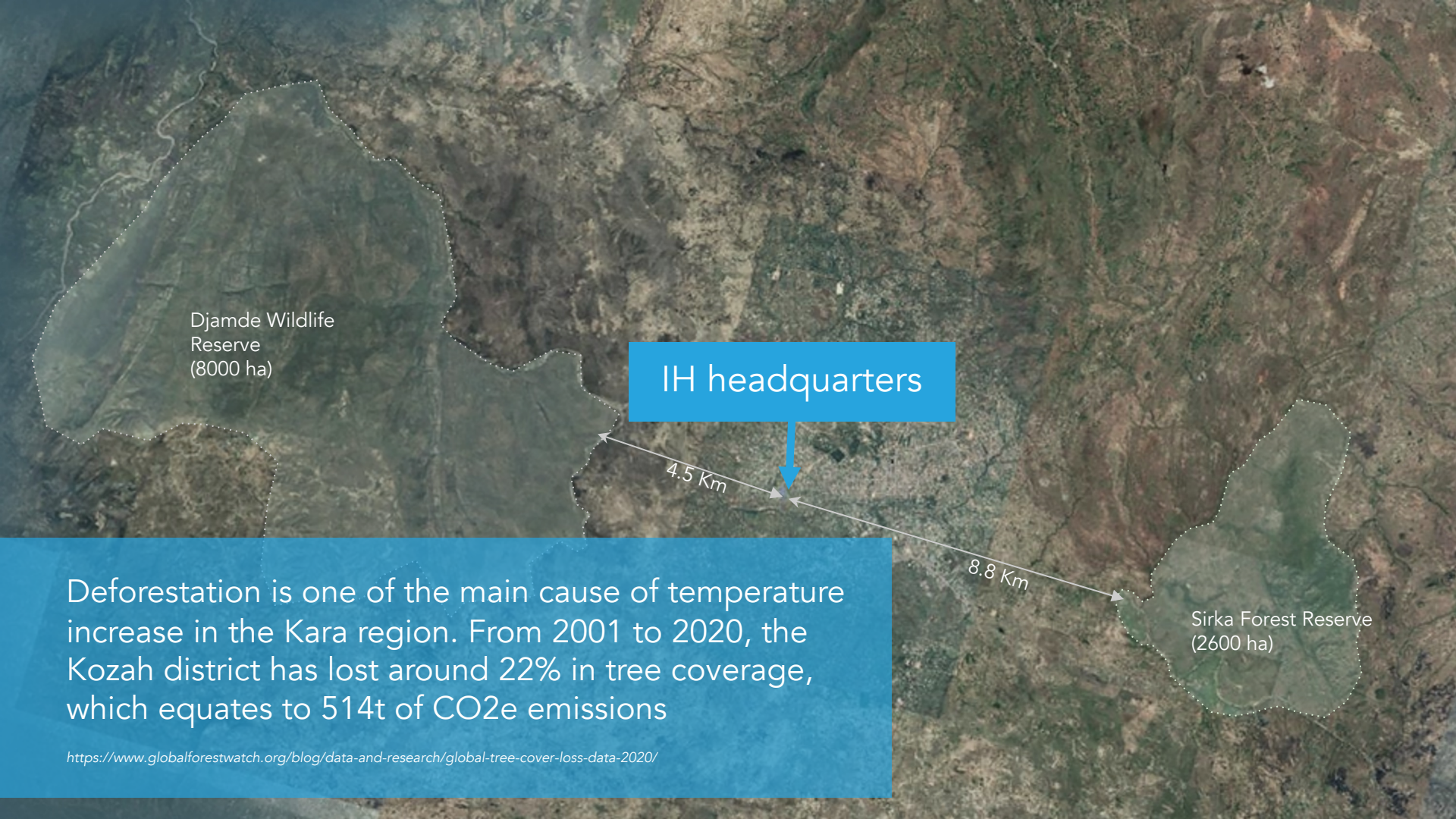
ALUMINIUM WINDOWS & DOORS
(Exterior)



STEEL WINDOWS &
DOORS
(Interior)



TEAK WOOD CEILING
(Limited to interior use)



Djamde Wildlife Reserve
(8000 ha)

IH headquarters

4.5 Km

8.8 Km

Sirka Forest Reserve
(2600 ha)

Deforestation is one of the main cause of temperature increase in the Kara region. From 2001 to 2020, the Kozah district has lost around 22% in tree coverage, which equates to 514t of CO₂e emissions

<https://www.globalforestwatch.org/blog/data-and-research/global-tree-cover-loss-data-2020/>

Biodiversity

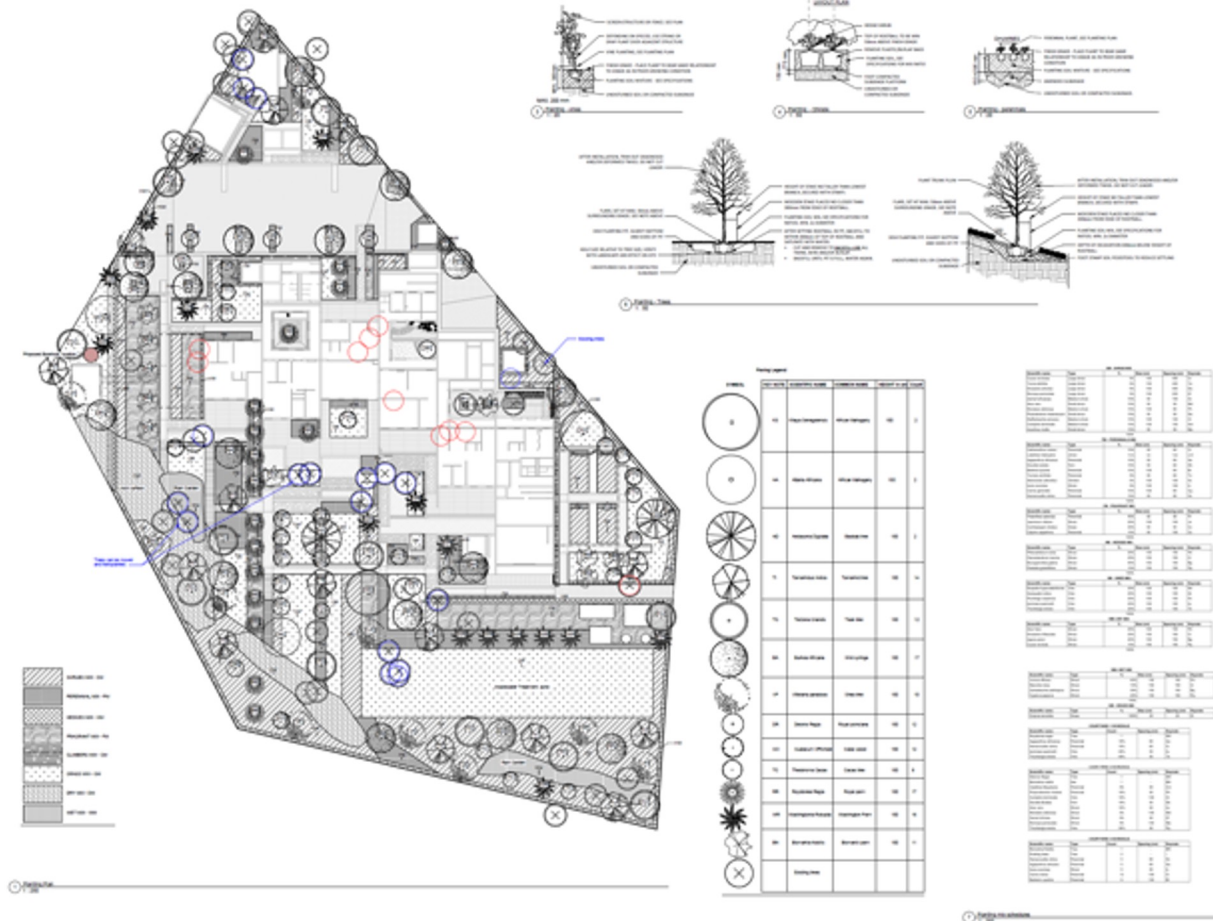
One of the main goals of the landscape design is to **re-build biodiversity on site** because it protects against erosion, and promotes healthy groundwater supply.



Biodiversity will be rebuilt on site by preserving the majority of the existing trees and planting native species.

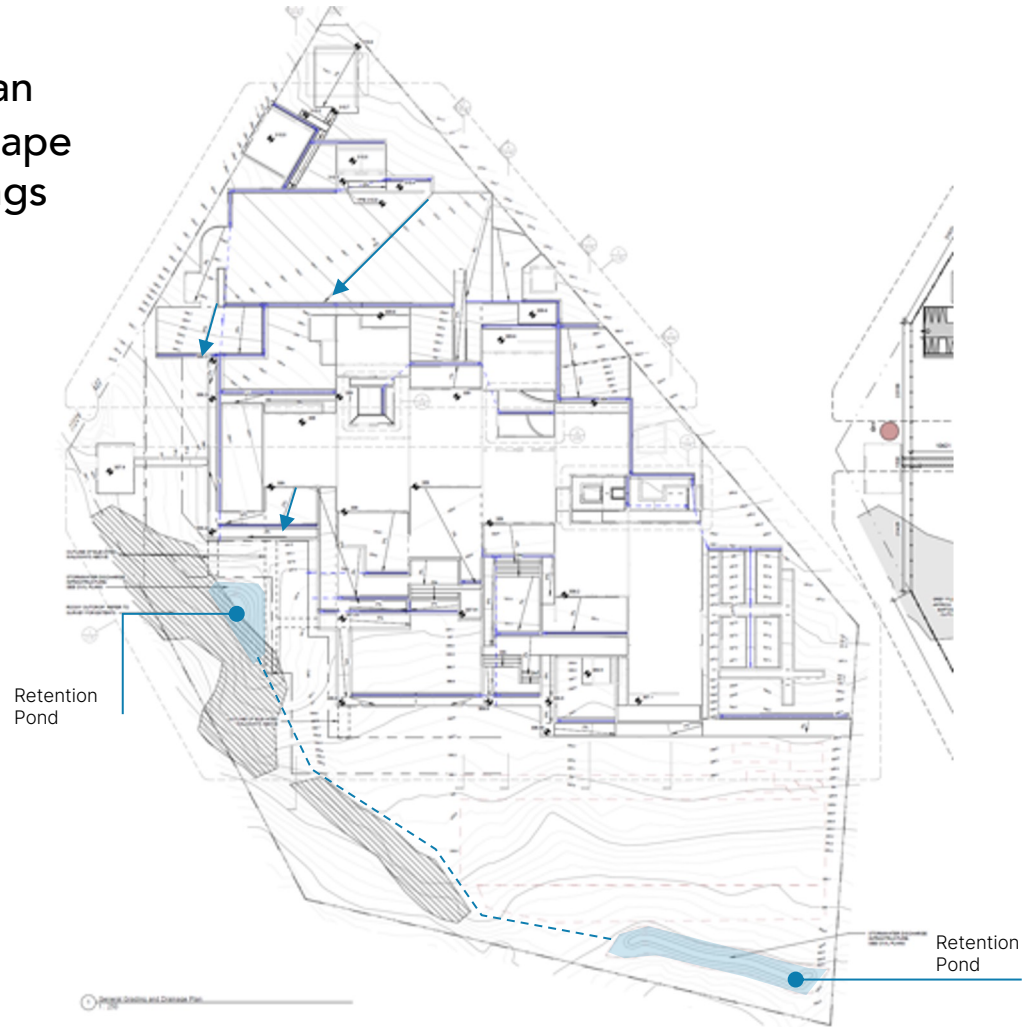
The landscape team identified a list of key native species with the help of the local architect.

Planting_Site Plan



Site Plan Landscape Drawings

Stormwater management from the North to the South of the site is optimized through permeable pavers, connected stormwater channels and retention ponds to minimize the volume of stormwater discharged off site and erosion risks.



The Community

Integrate Health has been working in the Adabawéré neighborhood on the outskirts of the city of Kara since its founding in 2004. In acknowledgement and gratitude for this partnership, Adabawéré leaders donated a plot of land to construct our headquarters.

Open to the community

The Green Center campus will be **accessible to the community**. It will integrate seamlessly with the surrounding community, allowing community members multiple points of entry and ways to engage with the space. The water well and series of exercise paths will be available for use by community members.



Community gathering

The Green Center will feature a community gathering space, providing a dedicated training space for healthcare experts and hosting events for up to 200 members of the Adabawere community. In addition, an indoor conference room will be available to the community to carry out meetings.

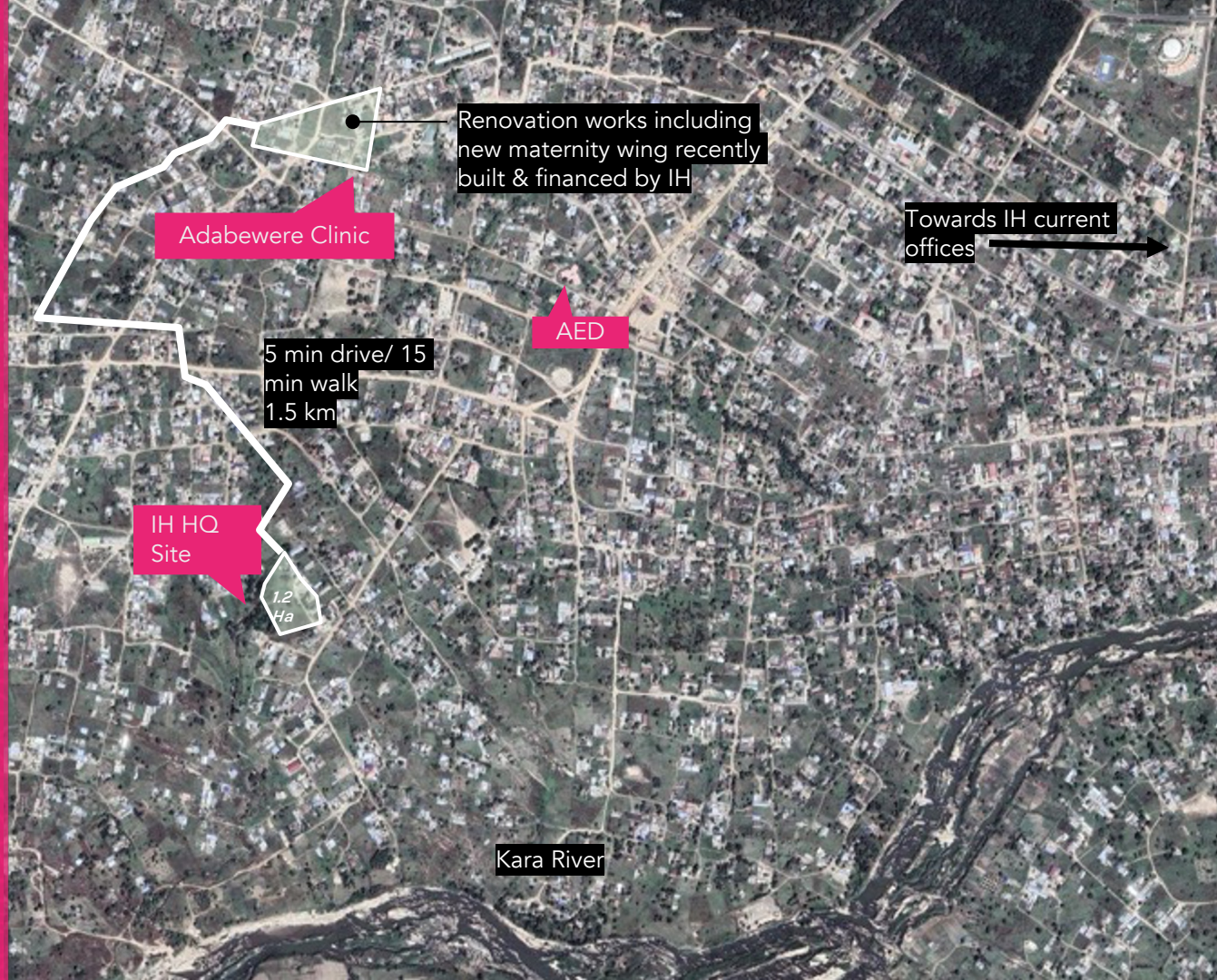


Indoor conference room

An indoor conference room will be made available for public use. Local civil society organizations, community leaders, and implementing partners will be able to use the space as a place for dialogue and community engagement.

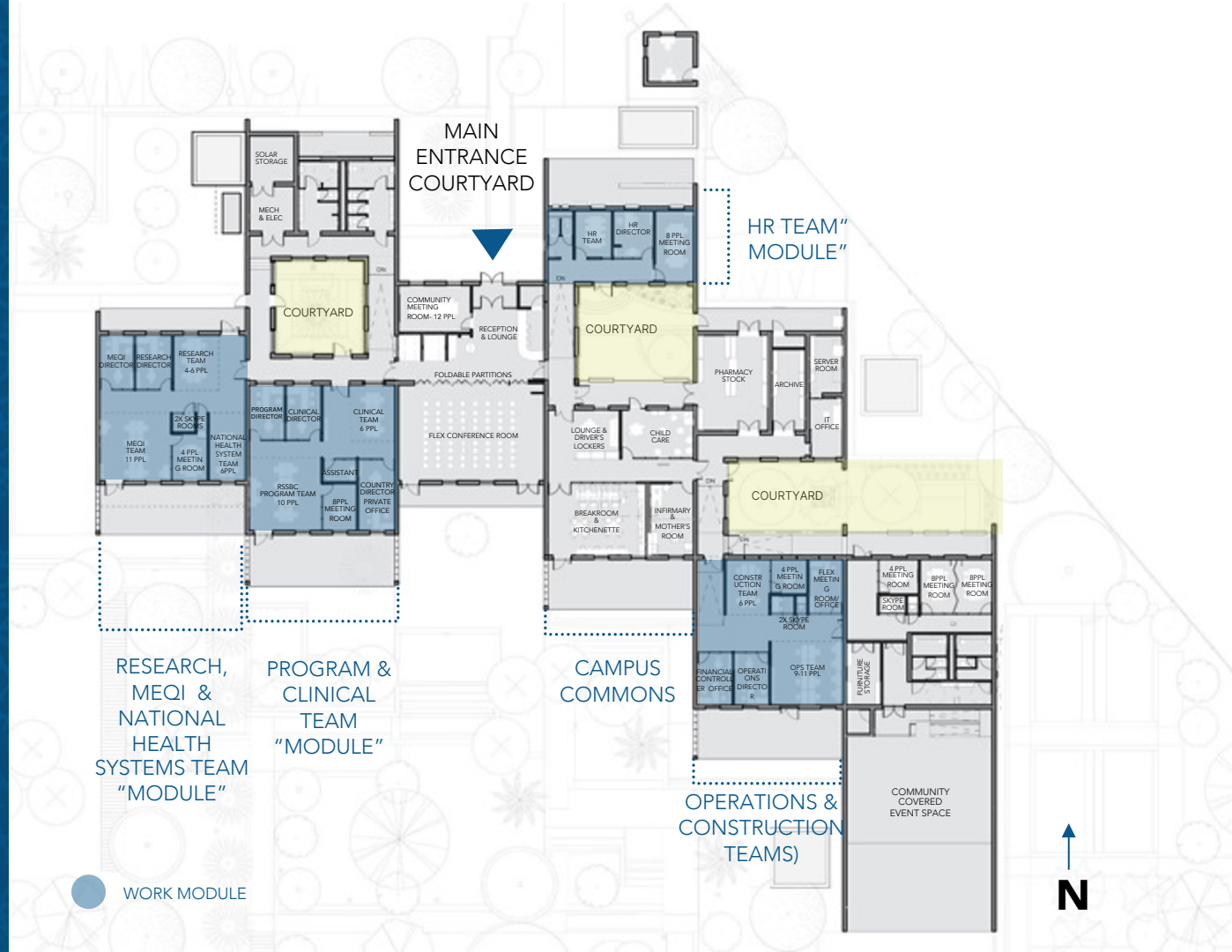


Integrate Health's headquarters will continue to anchor the organization in the region.



Collaboration

Each office work module is designed to promote collaboration between each department while balancing privacy through a series of well connected spaces.



Flexible workplace

The space caters to different scales of collaboration, with flexible workspaces that can shrink or expand based on needs. This **promotes interaction, flexibility, and collaboration**. The space will be available for Ministry of Health meetings and trainings, community meetings, convenings of public health experts.



The Budget

Expenses for the Green Center will total approximately \$4M and the Center is expected to be completed by July of 2025.

N°	DESIGNATION	Cost
1	Site Installation and Preparation	\$ 137,060
2	Building Construction, including fencing	\$ 1,541,527
3	Water purification, treatment and storage	\$ 391,026
4	Building Power Supply, including Solar Panels and Batteries	\$ 399,958
5	Other Mechanical and Electrical systems	\$ 784,041
6	Roads and Green Space Development	\$ 209,215
7	Interior Design, Furniture and Equipment	\$ 205,000
8	Pre-design surveys, Design, Construction Supervision	\$ 418,134
	Total	\$ 4,085,961

Thank you



Annexe

The Problem

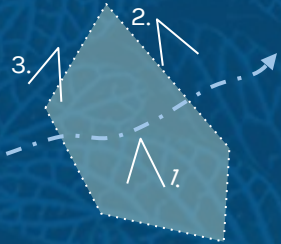
Integrate Health's team is growing rapidly and has outgrown their rented office spaces multiple times in the past few years. The team is currently fragmented across three separate offices in Kara. This greatly affects our logistics, work visibility and cross-team collaboration.

We need to consolidate our space into a single location to increase our visibility within the community and to foster collaboration with our team and our regional partners.



Site analysis

The site slopes toward the South open on great views towards the Kara river banks and the land beyond. Tall trees on the site provide much needed shading and create microclimates combined with cool Eastern winds.



Views towards the Kara river banks

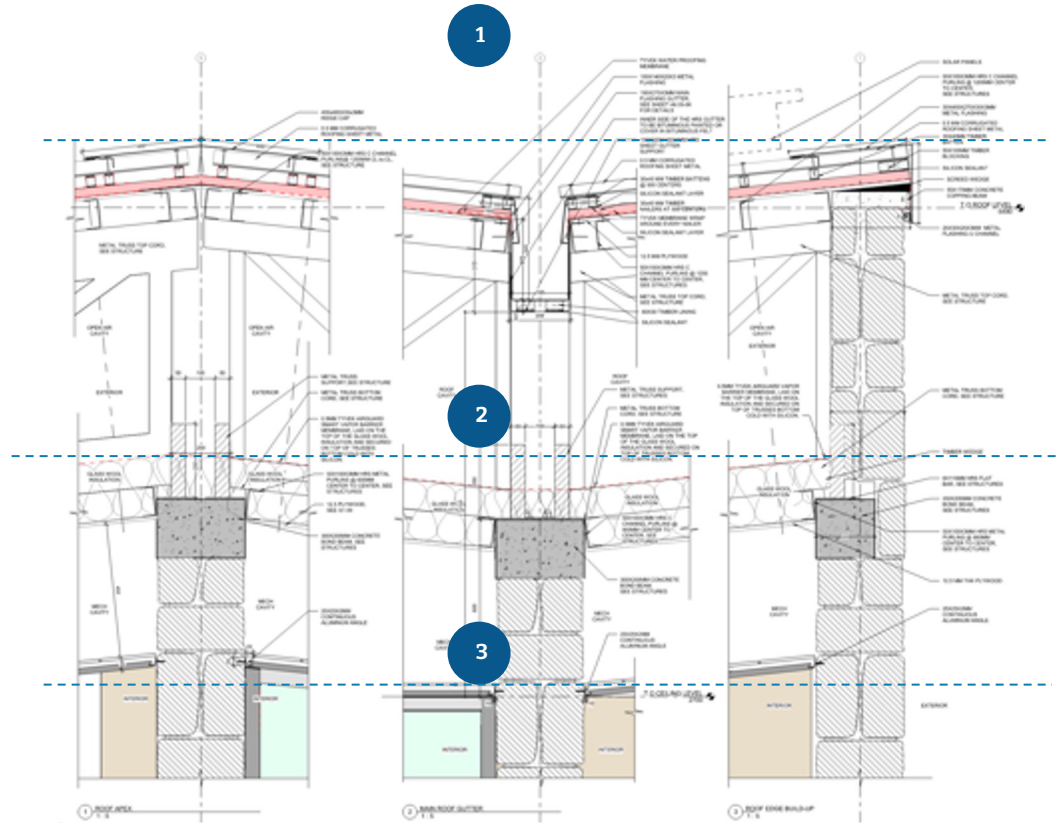


North Western view

Roof details

The roof design and build up was optimized for comfort and comprises of 3 main Layers:


1. **First Layer:** To provide shade to the harsh exterior weather and adequate waterproofing (corrugated metal roof & Tyvek)
2. **Second layer:** To provide Heat insulation (glass wool)
3. **Third layer:** Acoustic ceiling to help absorb noise for an optimum work environment



Borehole Location

Geotech investigation results highlighted that there is high risk of contamination of existing borehole water supply by mobile groundwater. Therefore, MASS recommended to relocate the existing borehole to the West of the Site.

 EXISTING BOREHOLE

 PROPOSED NEW BOREHOLE LOCATION

Site Plan Landscape Drawings

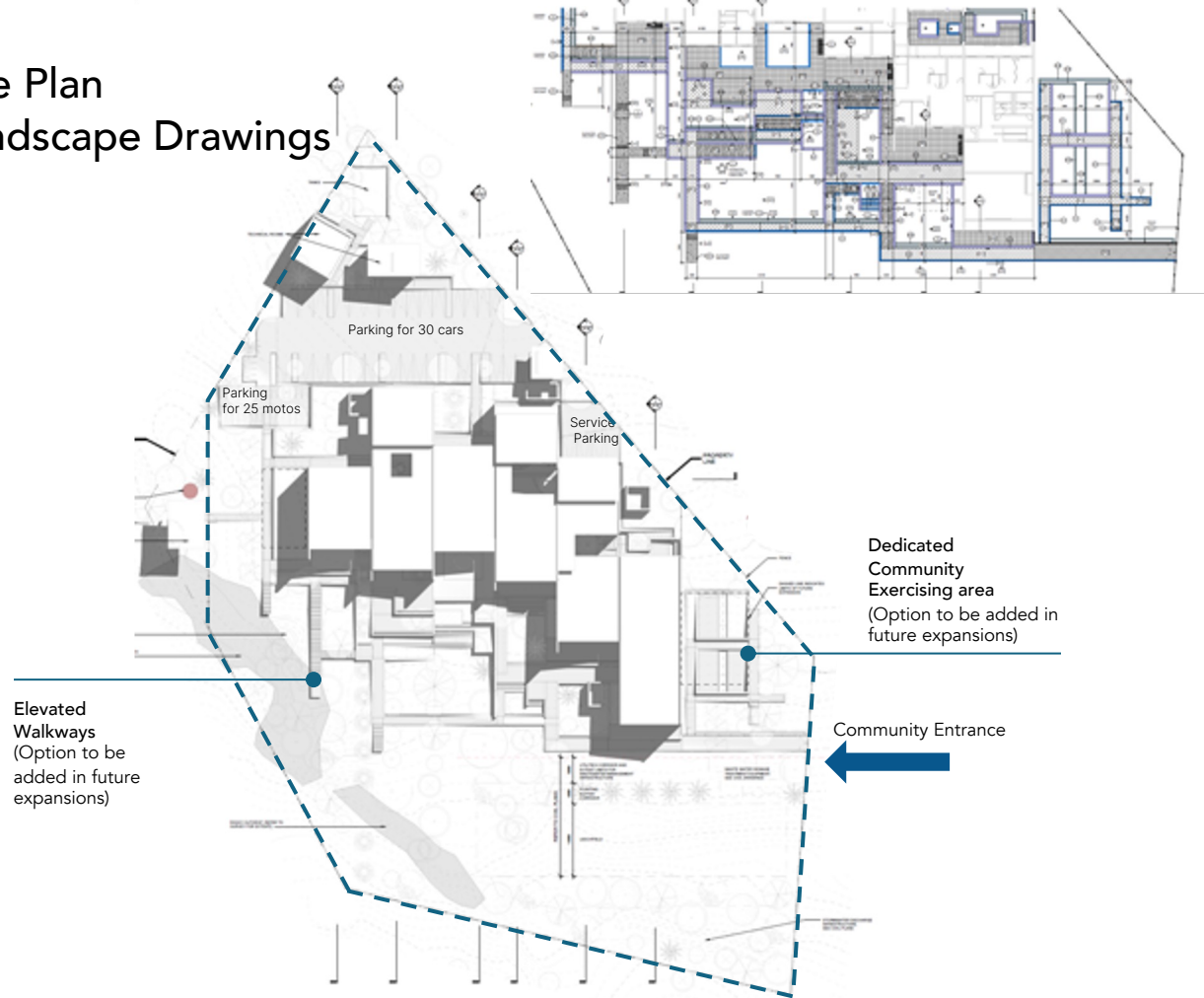


Hardscape

Pathways & Exercising area

1. Parking: 30 cars & 25 motos (10 cars will be shaded). We provided a service parking with loading and unloading space for the pharmaceutical storage
2. Accessible Pedestrian Walkways & trails connecting the majority of the site
3. Elevated Walkways (optional)
4. Community exercising trail (optional)

Site Plan Landscape Drawings



Structure

Key Design Drivers

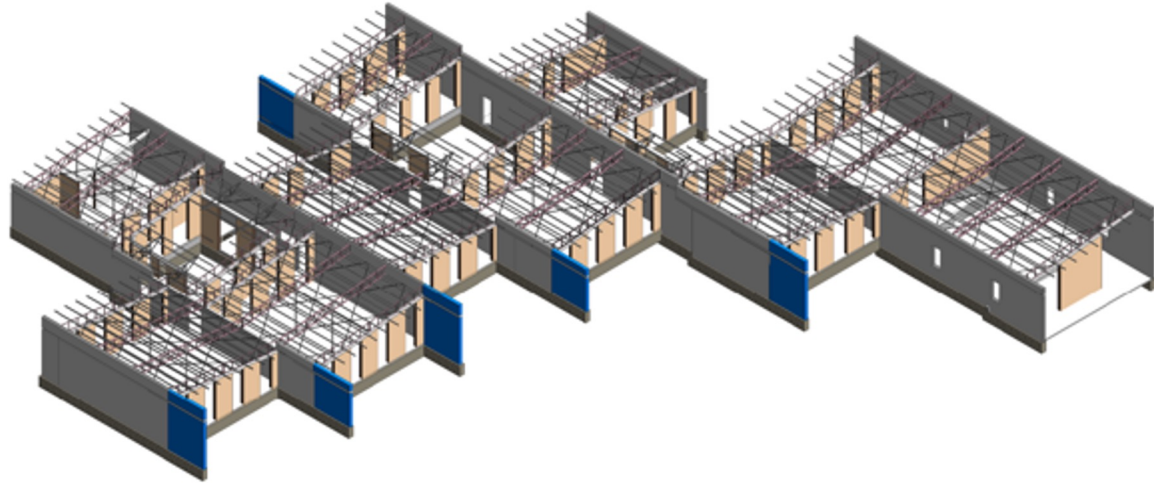
Structure promotes use of sustainable locally sourced and low carbon materials.

Natural materials are used for the substructure and and superstructure.

Foundations will be built using stone

Stone and compressed earth blocks are used for walling

Steel widely preferred due to their low weight and high strength is used for roof structure



Structure

Key Design Drivers

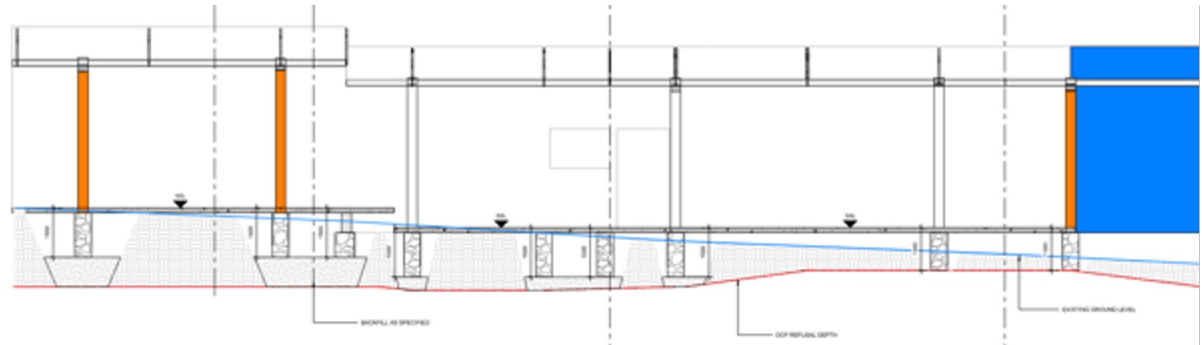
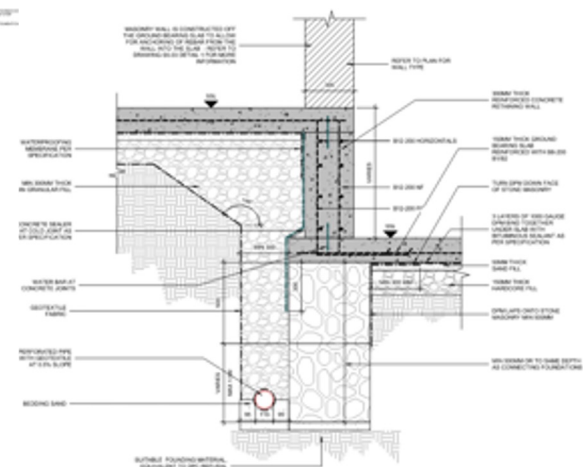
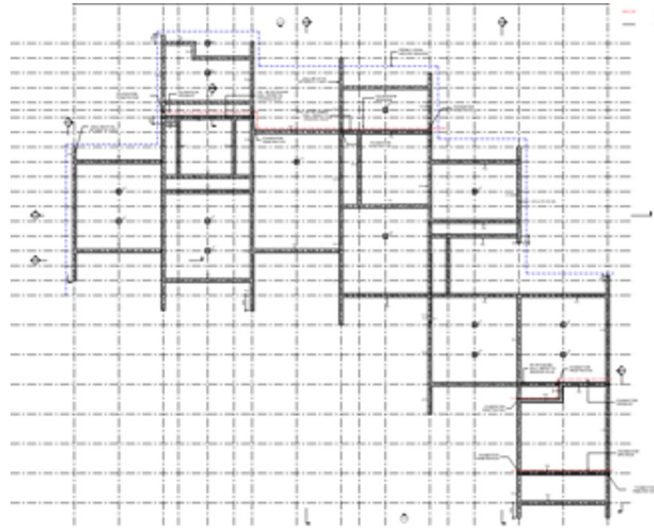
Substructure

1. Founding Material
2. Ground water
3. Waterproofing
4. Concrete class is higher due to aggressive chemical ground conditions

Embodied Carbon

1. Target half of global average - 210 kgCo2/m², building achieves 202 kgCo2/m²

Good supervision is essential to ensure building integrity

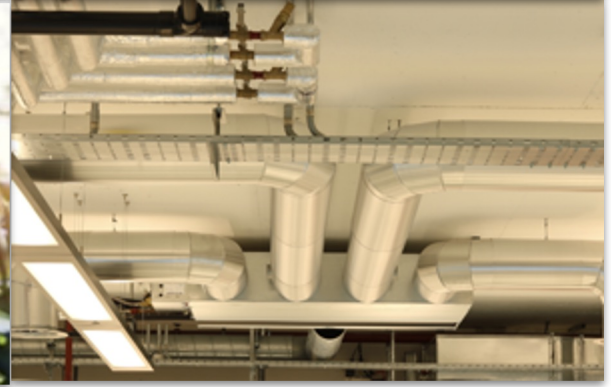


MEP

Mechanical/ Environmental

Design Drivers

Comfortable, Healthy
Working Environment
Adaptive Comfort with
Occupant Control
'Harmattan Proof'
Sustainable Design
Minimising Operational
Costs



MEP Mechanical/ Environmental

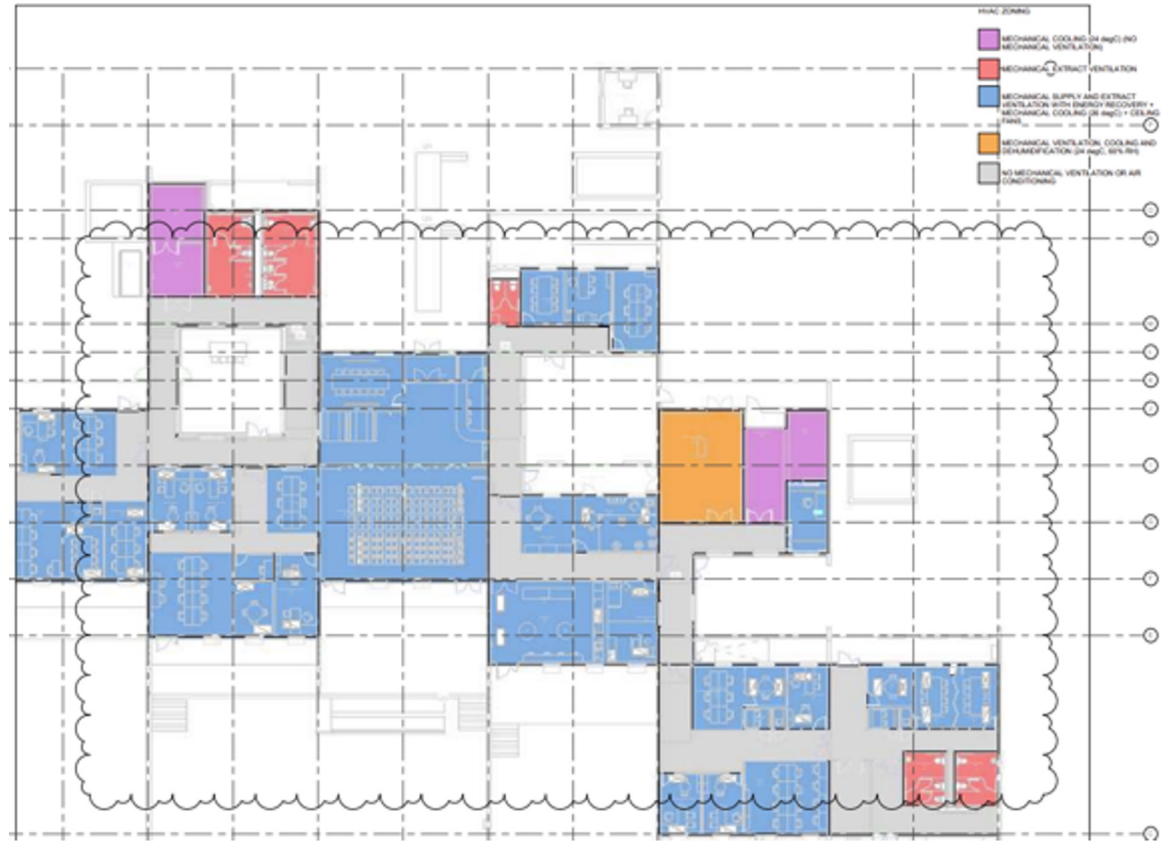
Ventilation and Cooling Zones

Key working areas are provided with mechanical ventilation (supply and extract air). These areas are served with cooling and ceiling fans as part of an adaptive cooling strategy.

Toilet blocks are provided with extract ventilation with passive supply through transfer grilles.

The Archive Room, Server Room, Mechanical Room and Guards Office are provided with dedicated cooling.

The Pharmaceutical Store is provided with precise cooling and humidity control.



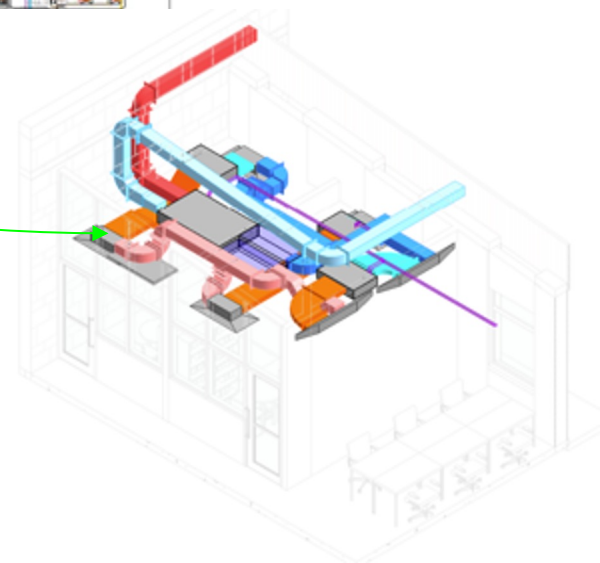
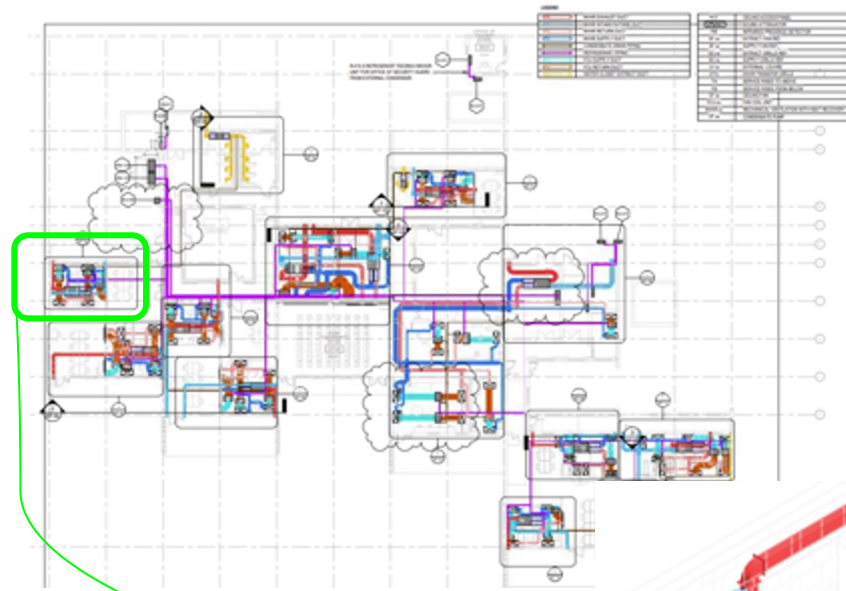
MEP Mechanical/ Environmental

Ventilation and Cooling Strategy

Ventilation and Cooling plant is concealed within ceiling voids above individual offices.

Temperature control and ventilation is automated by central controls, Presence Detection, CO2 detection and thermostats.

Occupant control to Ceiling Fans and Openable windows is provided.



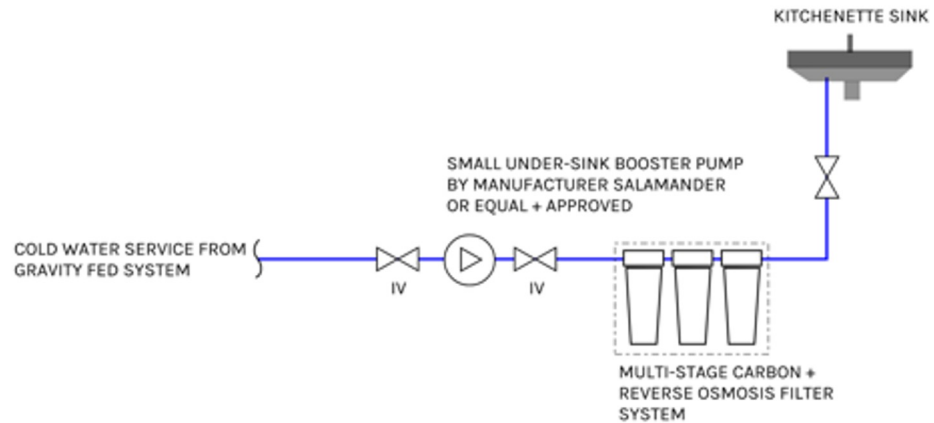
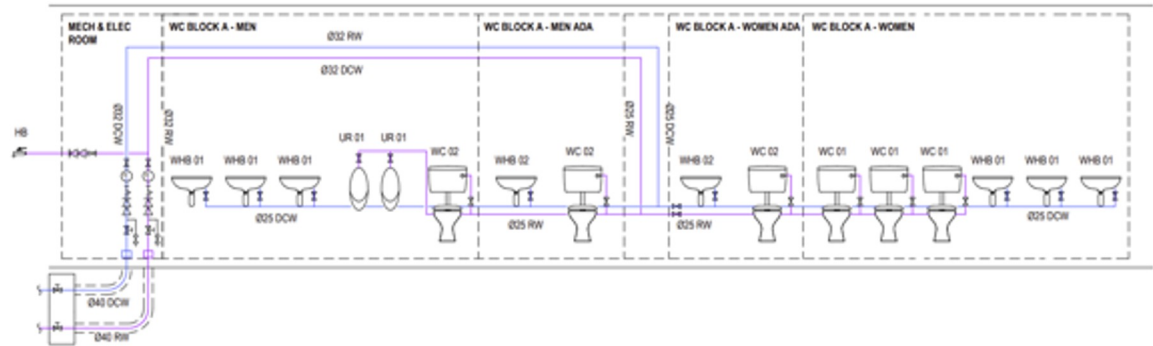
MEP Plumbing

Cold Water

Borehole water is plumbed to all basins and sinks

Rainwater is plumbed to WCs and Irrigation taps

Kitchenette is fitted with an undersink Filter and booster pump for clean water at a good pressure.



MEP Fire

Fire Suppression

Fire water pumped to strategically placed Hydrants and Hose Reels.

Hydrants to fight fires externally (bush fires) and internally.

Hose Reels to fight fires internally and aid escape for occupants.

Fire Extinguishers of various types strategically placed to extinguish fire at source

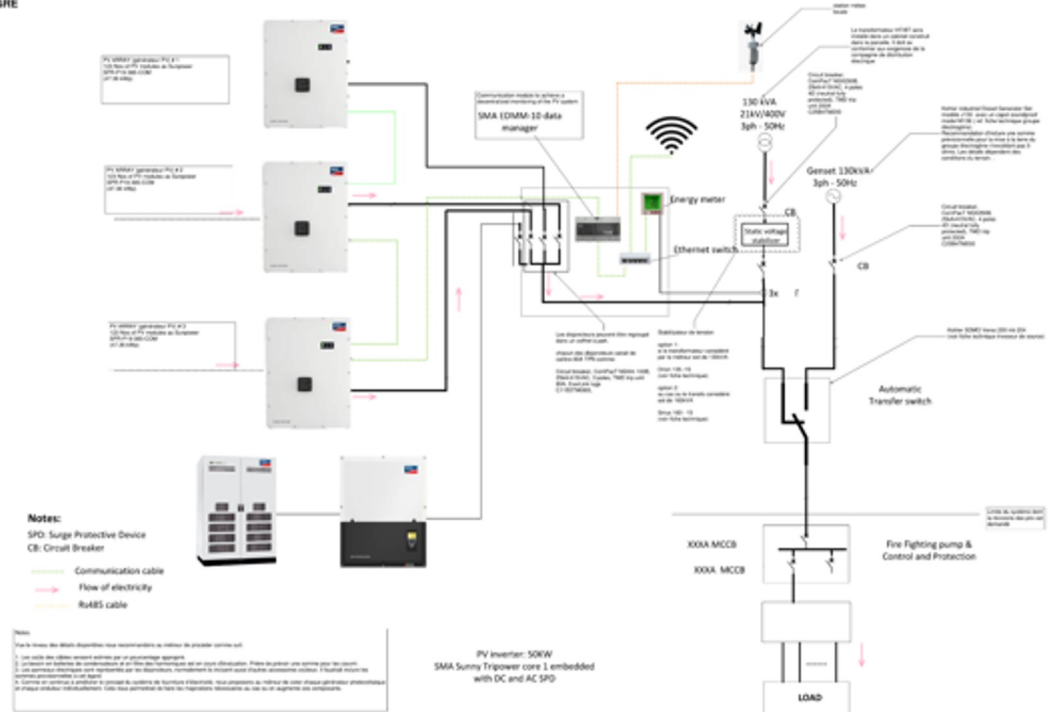


Electrical

Components:

- PV array 144 kWp
- Battery storage: X kWh
- Grid power supply
- Diesel generator (TBC)

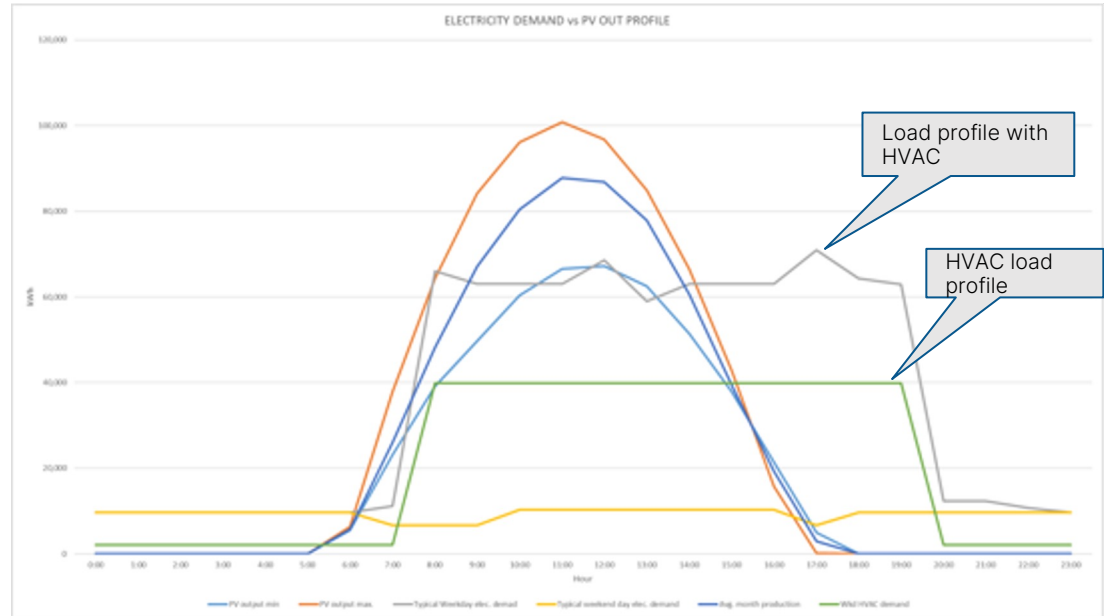
SCHEMA SYNOPTIQUE DU SYSTEME DE FOURNITURE D'ELECTRICITE A SANTE INTEGRE



Electrical

Energy profiles:

- Weekday demand: 894 kWh
- Weekend demand: 225 kWh
- Avg. PV contribution: 67%



Electrical

Energy profiles:

- Weekday demand: 894 kWh
- Weekend demand: 225 kWh
- Avg. PV contribution: 67%

Observations

- With 98 kWh net storage, it is possible to run the entire facility off grid from 8:50 AM to 3:50 PM
- Such battery will be depleted by 5:30PM
- From 3:50 PM to 9:00 AM, the power supply from an alternative source is required.

Recommendations

- Since the alternative power supply is mandatory, it should be reliable.
- The grid supply is primary alternative power source and it should have the capacity to supply the peak load
- The grid supply is intermittent, therefore it is recommended to have a generator that would be used in case of emergency.
- The DG can be of a small size, (50%) of the peak. But in this case it means the HVAC will be shut off except in critical areas (medicine storage)

