

PROJECT DESIGN REPORT

Proposed Twin duplex Residential House

- Western province
- RubavuGisenyi
- Mbugangari
- Nyarubande

Plot:2125

CLIENT

Mr. NYAMAYIRA Emmanuel

ROLE OF THE ARCHITECT

- Our Architecture-Engineering company facilitated and coordinated the design teams' activities according to the following parameters:
- Ensure the project mandate is carried out and maintained according to client needs
- Provided input into overall project schedule, timelines and milestones. Ensure an integrated design process is structured both architecturally-structurally and in building services parameters. .
- Ensuring that the project meet the standards according to International building standards and basically Rwanda Building codes and Environmental policies .

PURPOSE OF THIS REPORT

Design Report illustrates the following:

- Clear direction and defined scope of work pertaining to the re-purposing of
- Existing condition of elements and systems ▯
- Opportunities for re-use of existing/local building construction materials
- Test/ Fit scenarios based on the General Functional Program

- Development of a detailed Functional Program
- Site opportunities and constraints
- Architectural design concepts
- Approach to Sustainable Design
- Structural, Mechanical and
- Electrical system concepts

I. PROJECT DESCRIPTION

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The proposed residential building will accommodate 2 families. This project design report is aimed to provide a concise package of information illustrating the analysis of existing conditions, the planning and design, the evaluation of options and finally the recommended concept design approach to the development of the project. This report functions as a tool to communicate the development of the concept design, the steps taken by the design team and the implementation phases

1.1 Concept Design Process: The process of developing the Concept Design was broken into four steps:

The first step taken was the inspection of the existing buildings and conditions helped to choose a concept design fitting existing conditions.

The second step taken by the architects was to provide architectural drawings of existing building blocks with all programs and arrangement after on site measurement. This exercise helped the design team to draft the concept design of buildings renovation.

The third step taken was the development of a detailed functional program. A series of program surveys and interviews were conducted to better understand the specific needs and requirements of the building renovation.

The fourth step was the development of approved concept design proposal. Several proposals

were organized for this phase of the work, with the intent to coordinate common design issues, develop a common design language, and resolve on-going issues. Our team was held to gain consensus on a wide range of issue including the preferred option for the concept design.

II. SITE

2.1. Existing Conditions

- The project is owned by Nyamayira Emmanuel and Tabu Daphrose, the plot is located in Western province, Rubavu District, Gisenyi sector, Mbugangari cell and Nyarubande village within Plot: 2125

The site covers approximately 545sqm in total and is situated at the junction of 2 roads which is an opportunity to have a good visual and physical interaction with green access and embellishment.

Normally as the site is green considering the neighborhood. But it does provide vibrant views to the west from the site.



PLOT LOCATION ON FICHE CADASTRAL

OBJECTIVE OF THE DEVELOPMENT

We need to develop our plot with a sustainable settlement design and estate of the art provision of quality infrastructure to achieve a built environment satisfying the functional, aesthetical and environmental parameters of modern city and the aspirations of the users:

- Put up facilities that go along in serving community and sustainable environment.
- To offer support and skills to community or member of Red Cross Rwanda.
- To create a home environment of the neighborhood building/Green systems/Ecosystem-wetland protection,...

GUIDING PRINCIPLES:

In the process, principles are developed to inform the campus master-planning effort in order to guide the physical development of the project in a way that will:

Connect – Create well looking development within the neighborhood and grounds/green system. The owner wants to create an inclusive, engaged community through a collection of distinct spaces that relate well to one another,.



OBJECTIVE OF THE DEVELOPMENT

Sustain – Promote sustainable practices through the front yards and backyard; natural resources as well as energy-efficient buildings that provide spaces to connect
Innovate – Create flexible places to support our community now and in the future—spaces offering a variety of scales and functions that holistically support Human being life.

Cultivate – Enhance the simplicity and beauty of the neighborhood and interior aesthetically supportive to support individual growth and creativity through the intellectual and cultural life of the community, and our engagement with the world.



Interior design.(comparison)

PROGRAMS

Programming is the gathering of information related to an organization space requirements, relationships and adjacencies between departments, building use and the desired resources that will enable the campus to develop a highly efficient workplace which integrates new workplace standard.

The definition of "space" that works could include such aspects as:

- Flexibility & Adaptability
- Function vs. hierarchy
- Emphasis on Team vs Individual space
- Increased mobility of space & People
- Collaborative Tools & Technology
- Transparency Right to Light
- Cost effective operations
- End User Control
- sustainability, health & safety

The programming effort focuses on quantitative calculations using new space standards to meet goals for space utilization as the purpose of architecture.

Considered a living document the facility program is expected to grow and change as the needs of the neighbourhood change providing the flexibility to allow for continued evaluation the work environment requirements to ensure that facilities development strategy is in line with your long term space utilization strategy.

NEIGHBOURHOOD HEART

- Provide clear pedestrian linkages within the the neighborhood heart precinct including the parking spaces.
- Exploiting space opportunities which enhance the users life.
- Create socially, economically, environmentally project for users gathering and activity.

PEDESTRIAN ORIENTED

- Reinforce the Link as a key pedestrian junction point or node within the neighbourhoods
- Link facilities with existing pedestrian circulation infrastructure.
- Link all designed block to be easily accessed by pedestrians.

PROGRAMS

The program developed according to international architectural standards (1st floor plan)

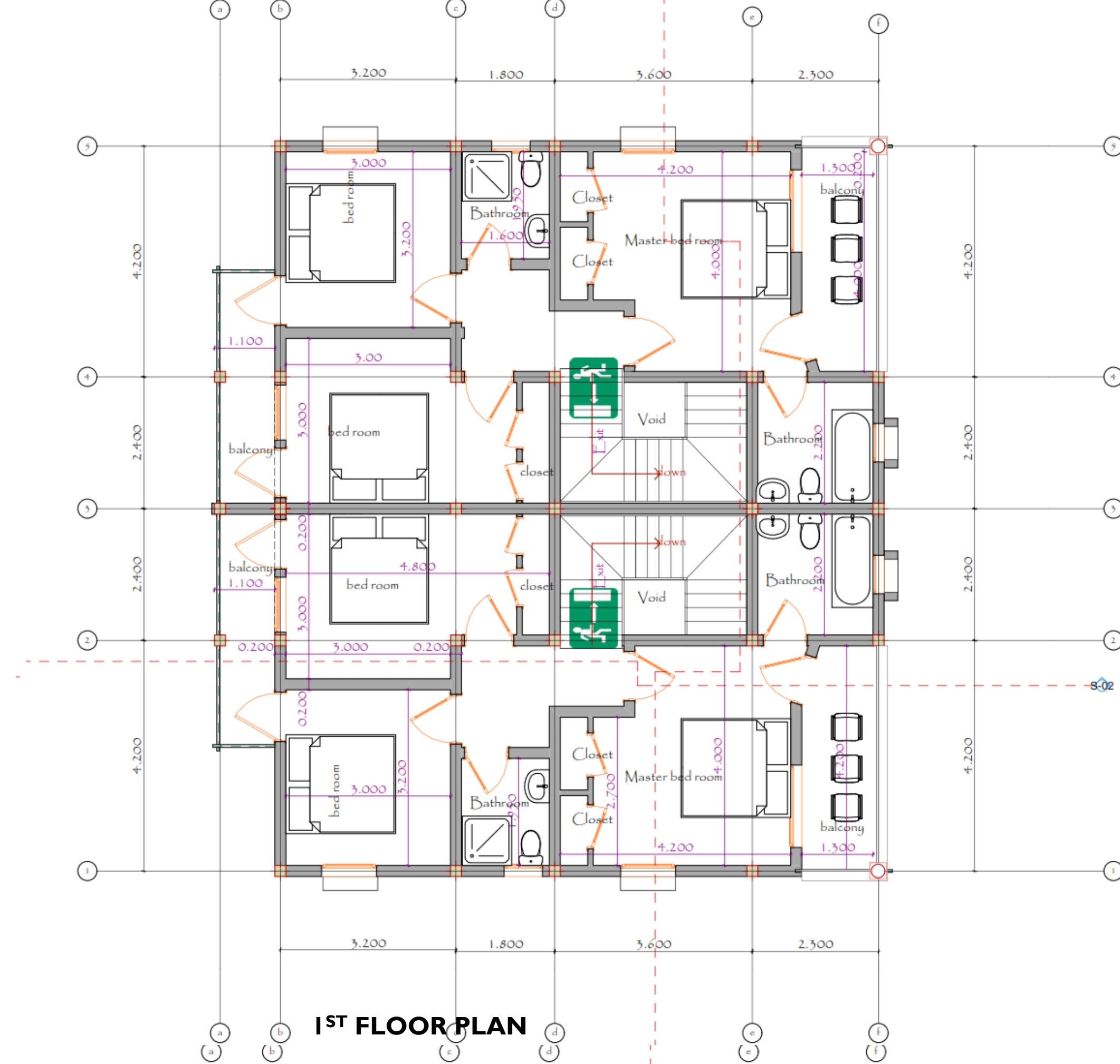
Program	Covered Area (m ²) One unit	Total Covered Area (m ²) Two units
Front porch	6.300	12.600
Living room	16.600	33.600
Dinning area	(within scaircase)	
Bed room-a	8.910	17.820
Bath room	3.510	7.020
kitchen	4.620	9.240
Utility area	7.00	14.00
office	4.620	9.240
Staircase	7.480	14.960
Total	59.04	118.08



III. PROGRAMS

The program developed according to international architectural standards(1st floor plan)

Program	Covered Area(m ²) One unit	Total Covered Area(m ²) Two units
Bed room-1	9.600	19.200
Bed room-2	9.00	18.00
Master Bed room-3	16.800	33.600
4. Bath room	3.120	6.240
5. Master Bath room	4.620	9.240
6. Balcony-1(front)	5.200	10.400
Balcony-2(back)	4.95	9.900
7. Satircase	7.480	14.960
Total	60.77	121.54



DEVELOPMENT DATA

Built Up Area(in sqr meters):162.532sqm

Building Coverage: $(162.532:545)=0.298$ i.e. 29.8%

Landscaping coverage:382.468 70.2% on the plot area.

setbacks (Front:7 side:7.750 and rear:3,20 Front: 7 m
Number of floors + 1

Gross Floor Area :325.064 m²

Gross Floor Area Ratio(in %):59.644:

Number of Parking spaces: 4 car Parks

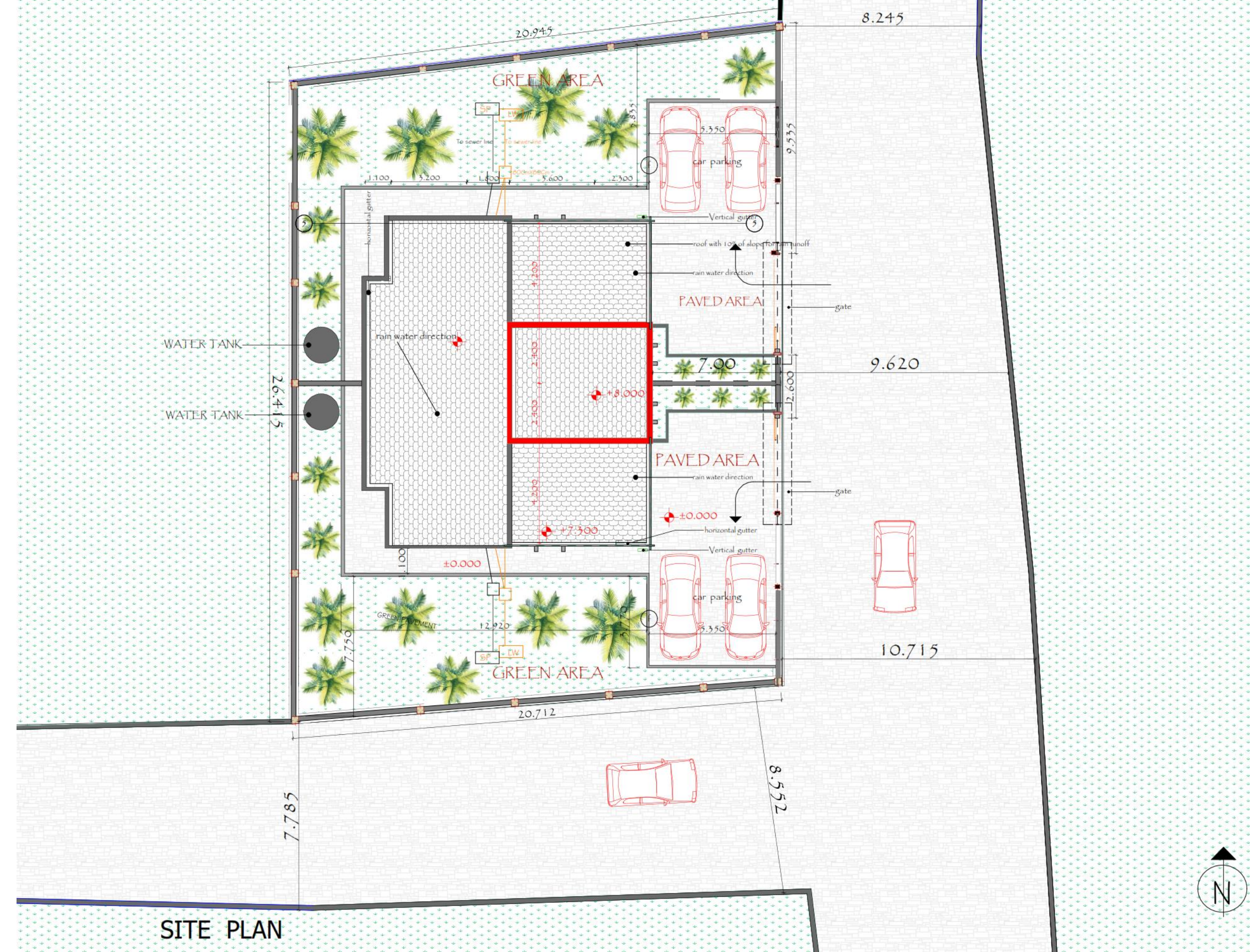
Capacity of the system used. (number of people designed for): 10

Estimated consumption :for water 700l per month

Estimated distance to the nearest land line net work 3m

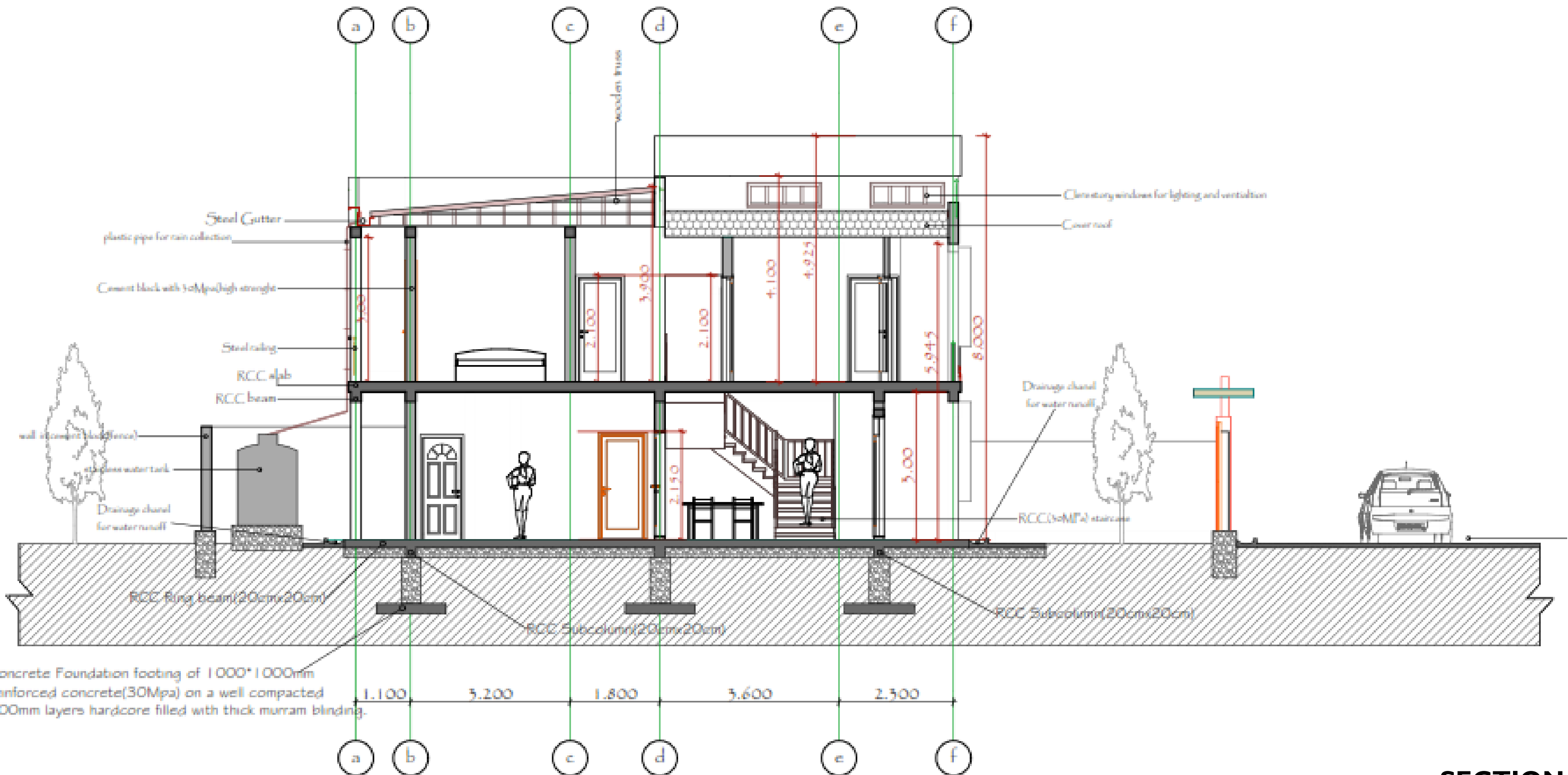
Estimated consumption for electricity
50 Kwh per month.

Estimated cost:77,999UsD i.e:64739419Rwf



SITE PLAN



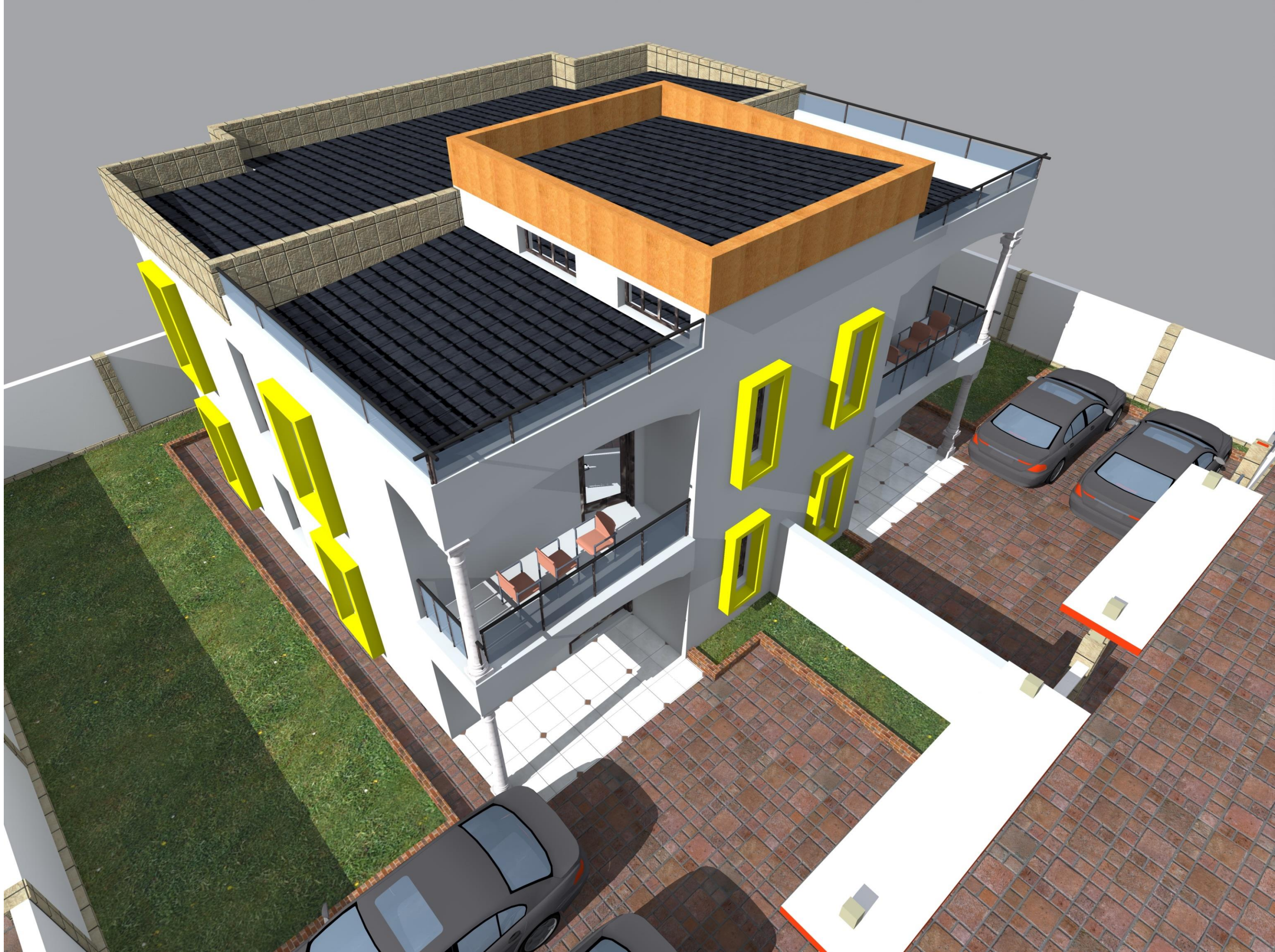


SECTION 002

CONSTRUCTION MATERIALS

2 stories(ground+first floor) residential development: Consists of reinforced concrete framed structure, masonry block walling & partitions,

- a. Ceramic tiles to common areas and staircases
- b. Non-slip Ceramic floor tiles to all wet areas
- c. Ceramic tiles to walls at toilets: 2150mm high
- d. Alucobond cladding and tempered and frosted glass on C.h.s space frame truss
- e. Aluminium casement doors externally, and timber panel and flush doors internally, steel casement emergency exit doors(front and backyards)
- f. mild steel railing to staircase and to upper balconies
- g. Aluminum casement windows
- h. Plaster ceiling finish



COMPLIANCE OF DEVELOPMENT TO LAWS, REGULATIONS AND POLICIES

MATERIALS:

Work procedures must be in place and adhered to for all phases of manufacturing. This would include, among other things, procedures for materials purchasing, material receiving, material checking, material batching /marking, material handling, material storage and conformance checking as described above, the materials to be used are all approved by the Rwanda Bureau of standards. Construction Technology: Our techniques of putting materials together conform to accepted principles. safety during Construction: During construction a safe manner to protect health of workers and to protect the environment will be paramount during construction operations by providing the components of health, safety, and environment include:-warning signs-First aid kits-Erosion control-Personnel trained in advanced First Aid.

-The area will be clear of flammable and combustible materials. -separate access routes from materials stored on site.

NOISE POLLUTION

significant pollution regarding the noise will be expected during the construction phase. The noise due to construction or demolition activities, excavating machines, concrete mixers and transportation trucks will be controlled in the following ways;

-Provision of suitable personal protective equipment's(ear plugs/ear muffs)-A system to control the movements of vehicles and traffic will be developed.

CONSTRUCTION MATERIALS PURPOSE(CONCEPTS)

Environmental sustainability: We adopt an individual and creative approach to how building construction can be made more sustainable and how buildings can contribute to the long term sustainability of a community.- We believe that sustainable design solutions incorporate:- Ecological building materials- measures to conserve energy- harvesting existing resources

The project provides for maximum green spaces around the buildings to provide cool environment and therefore improving the air quality within the interior spaces of the buildings. In terms of glazing choice it is recommended in the design to utilize low emissivity (LOW-E) type of glass that allows maximum day lighting while reducing as much as possible the amount of solar heat gain within the working environment thereby improving human comfort and minimizing the need for artificial lighting and mechanical ventilation.

ARCHITECTONIC COMPOSITION

Buildings have modern appearance massive and solid from the outside. On the inside, they are comprised of a series of volumes that provide spaces for the social uses to which they were constructed. In our constructions we will attempt to balance and contrast open and closed space, to create visual interest by means of the implied movement and rhythmic arrangements. We will also make use of the grid as a system to harmonize shape, the direction of forms and to the proportion of forms.