Mora Sports Complex

Group D5

Team Members:

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Mora Sports Complex

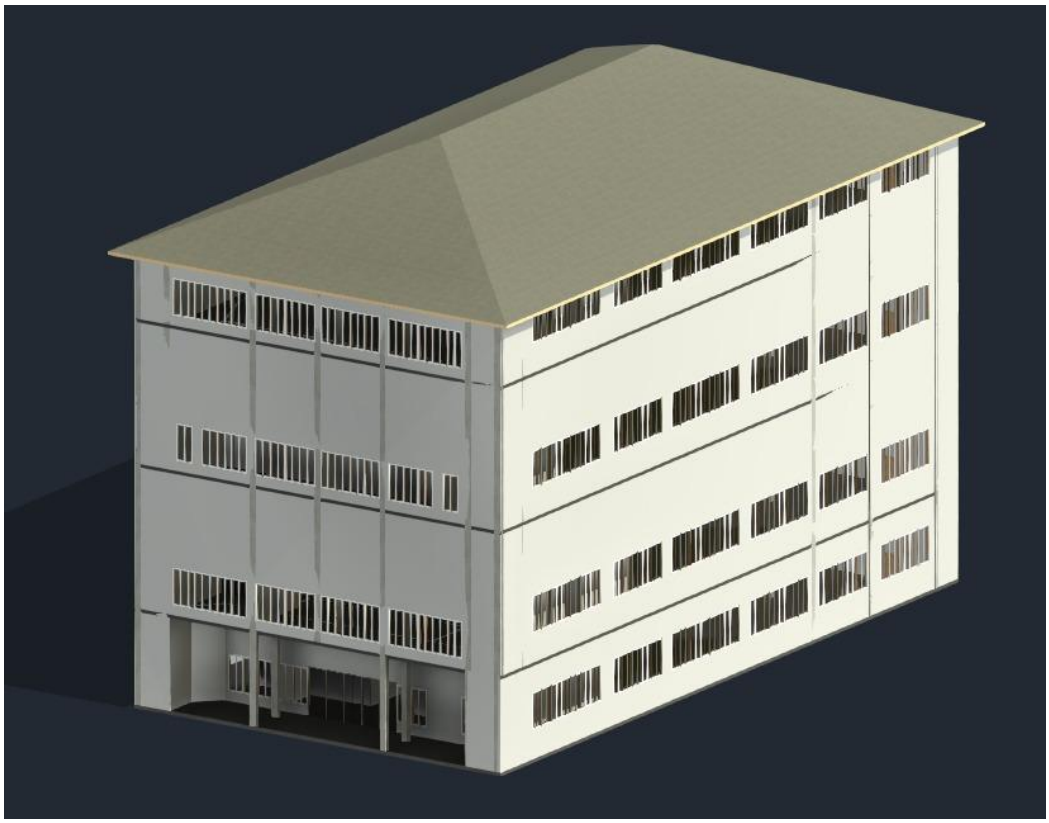
1. Project Overview

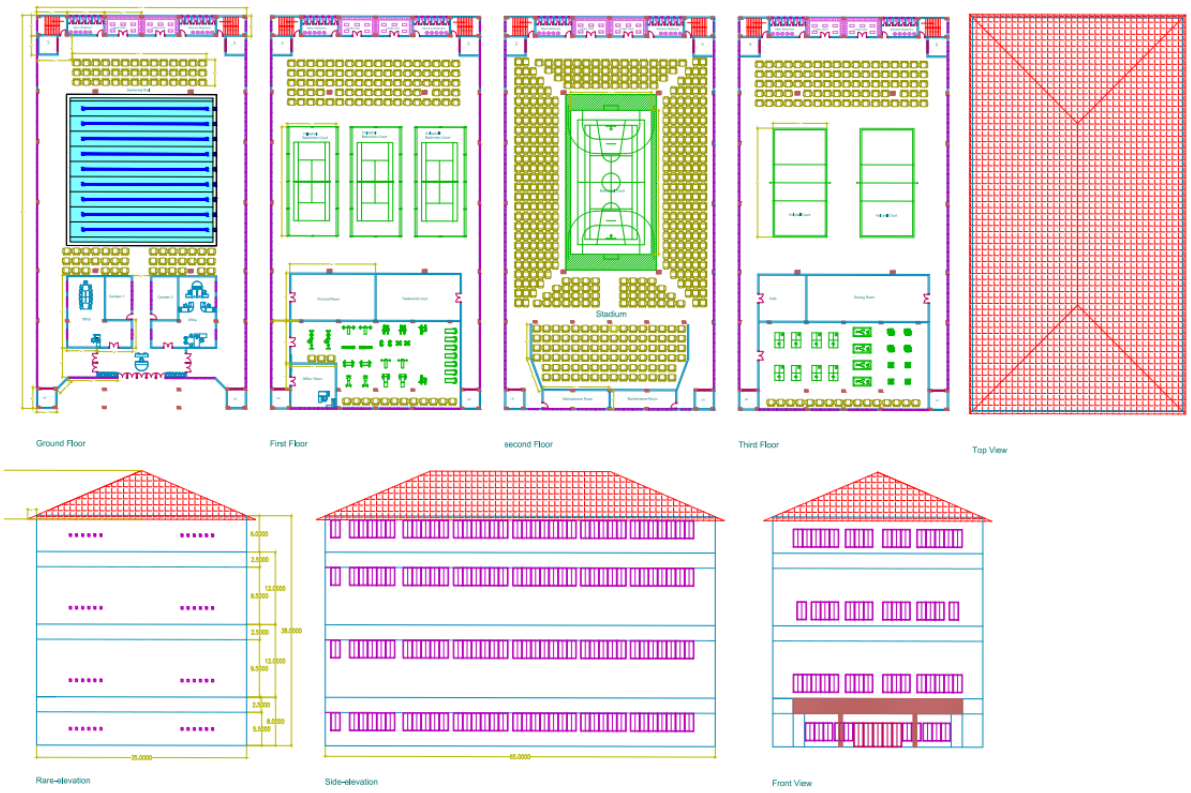
The proposed sports complex is a modern, multi-purpose facility designed to accommodate a range of indoor sports, fitness activities, and recreational events. The building spans four floors, including a ground-level swimming pool and upper-level courts and training areas. The design prioritizes accessibility, safety, and compliance with Sri Lankan building codes, while promoting energy efficiency and sustainability. It address the problem of not having a swimming pool in the university premises by providing a swimming.

Key Functional Areas:

- **Ground Floor:** semi Olympic swimming pool, changing rooms, first-aid room, canteens, lobby, offices, stadium.
- **First Floor:** three Badminton court, first aid room, taekwondo court, weight lifting gym
- **Second Floor:** Basketball court and stadium, maintainance rooms.
- **Third Floor:** 3x Volleyball court, Boxing room, Cafe, Indoor sports room(8x table tennis , 4x pool, 4x carrom)
- **Supporting Facilities:** 12x Toilets, 2x changing rooms on each floor, 4x elevator, 2x emergency staircase

2. Model Snapshots





3. Engineering Considerations

Structural Factors:

- Reinforced concrete frame structure designed to resist gravity and lateral loads.
- Transfer beams are used to transfer loads to distant columns as the columns are spaced apart to minimize the view obstruction.

Material Selection:

- Reinforced Cement Concrete (RCC) used for beams, columns, slabs and load bearing elements for strength and stability.
- The roof is made of zinc aluminum sheets which are practical, durable and economical for large span coverage.
- Non-slip ceramic tiles used for swimming pool decks and wet areas for safety, durability, and easy maintenance.
- Synthetic sports flooring is provided for badminton, volleyball, and basketball courts offering a safe, durable and low-maintenance surface suitable for multiple sports.
- All windows and viewing areas use tempered glass with aluminum frames providing safety, durability and an aesthetically appealing design.

Dimensional Considerations:

- Each badminton court measures 8.0 m × 18.0 m, exceeding the standard play area (6.1 m × 13.4 m) to allow for safe run-off zones. The clear height above the court is maintained at 9.0 m, meeting BWF minimum requirements.

- Volleyball court size is 9.0 m × 18.0 m, in line with general regulations for the playing area. A vertical clearance of 12 m is provided, complying with standards for international events.
- The basketball court measures 13.4 m × 23.79 m, close to full-size dimensions (15.0 m × 28.0 m) and suitable for training and intra-university competitions. The headroom clearance of 7.0 m meets requirements for competition play.
- A 25 m × 25 m swimming pool is provided, compliant with short-course competition length. The width allows for up to 10 lanes (2.5 m each) including buffer lanes.

Regulatory Compliance:

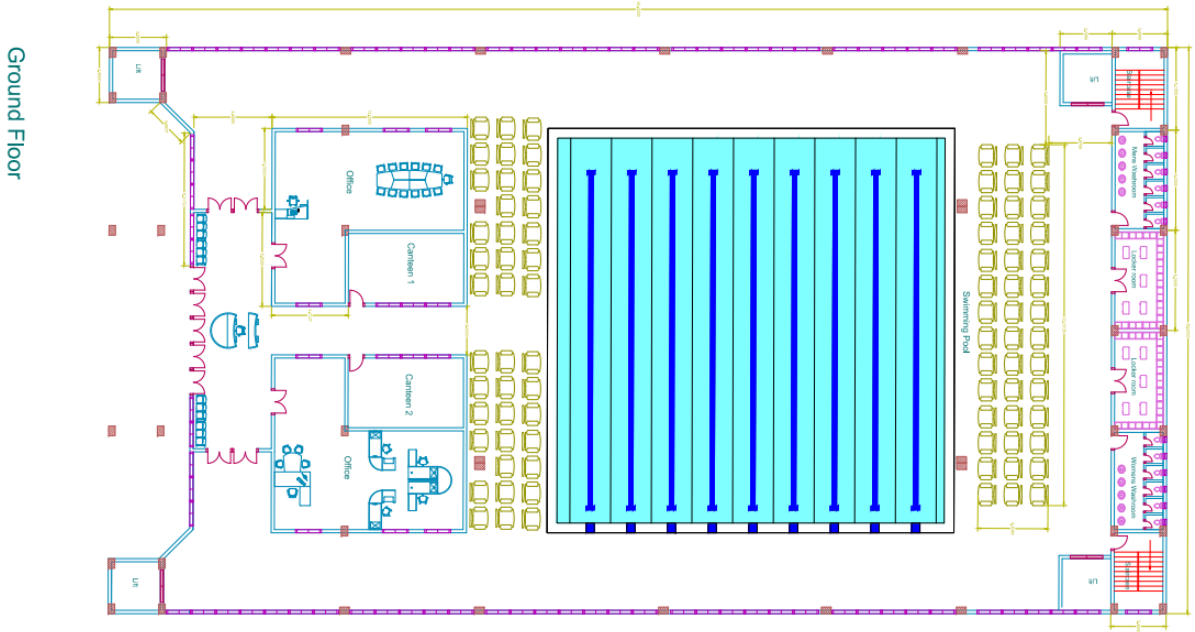
- Accessibility features provide elevator access to all floors and accessible washrooms on each level.

ANNEXURE

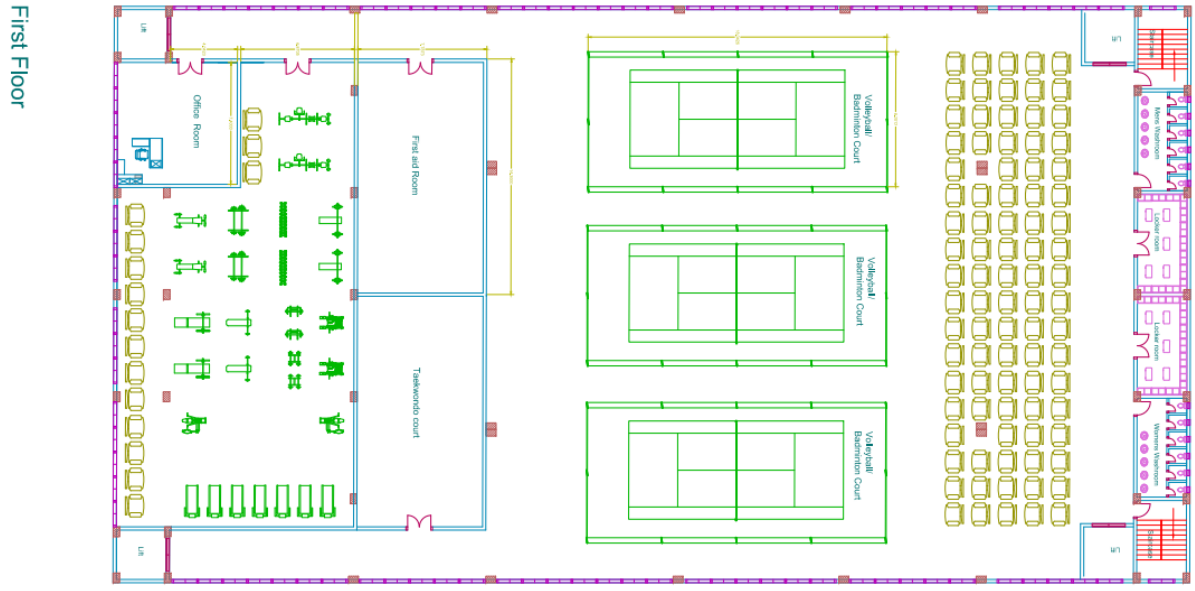
Views

Plan Views

Ground Floor

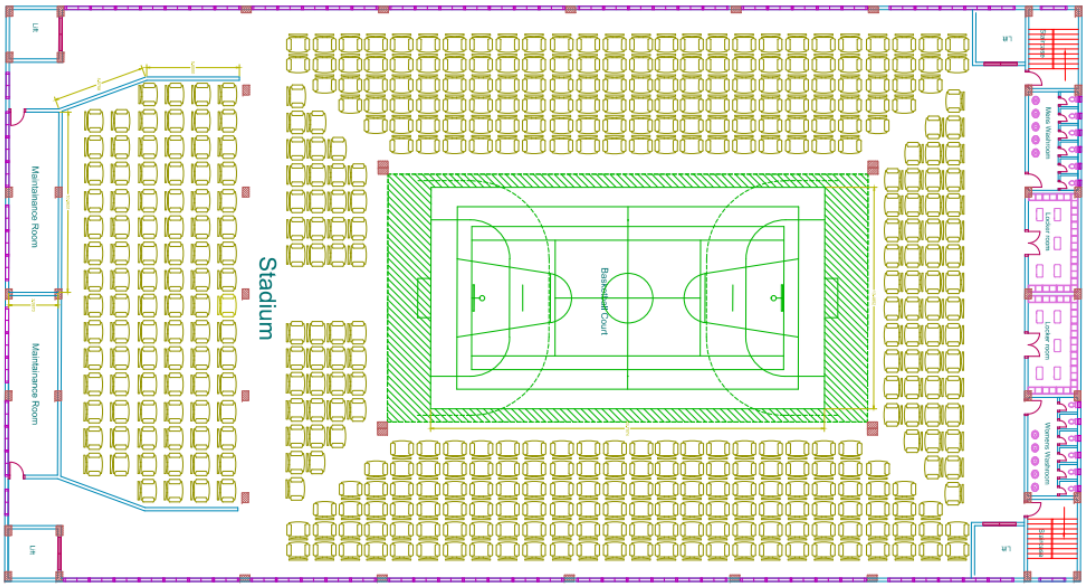


1st Floor



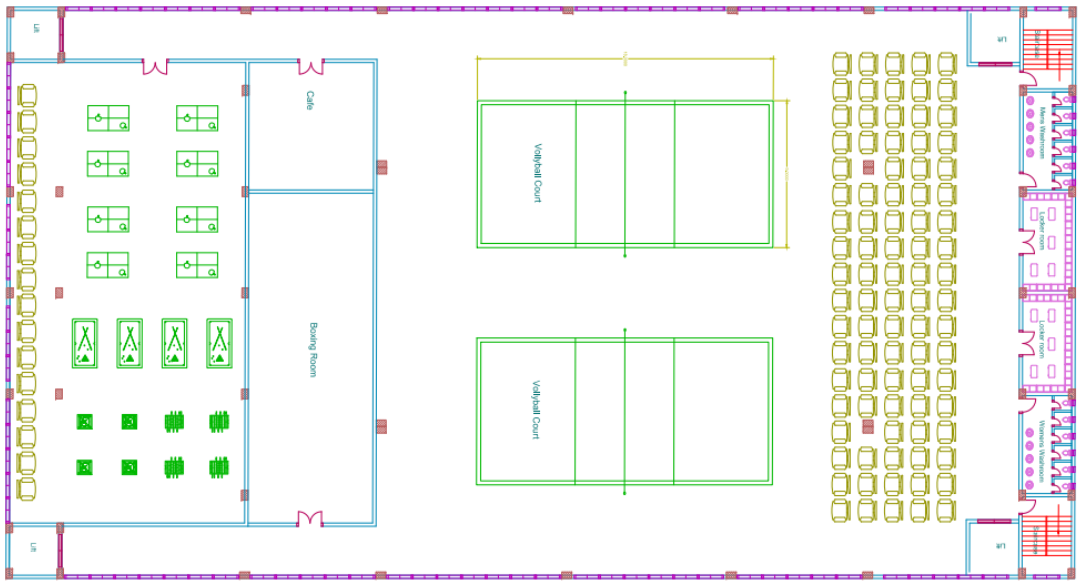
2nd Floor

second Floor

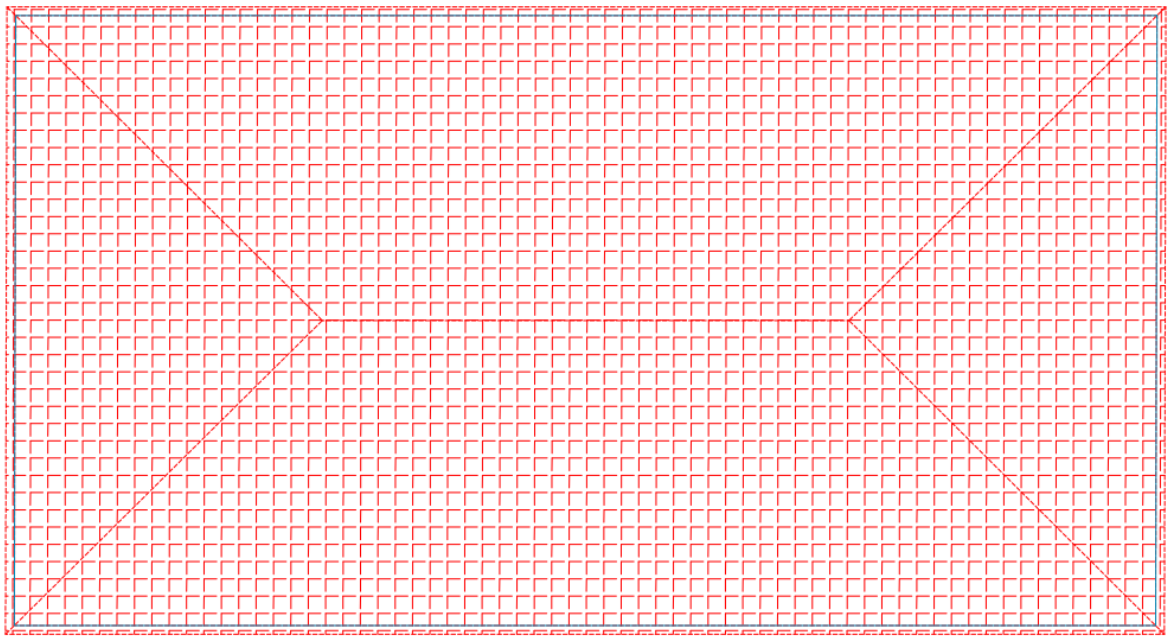


3rd Floor

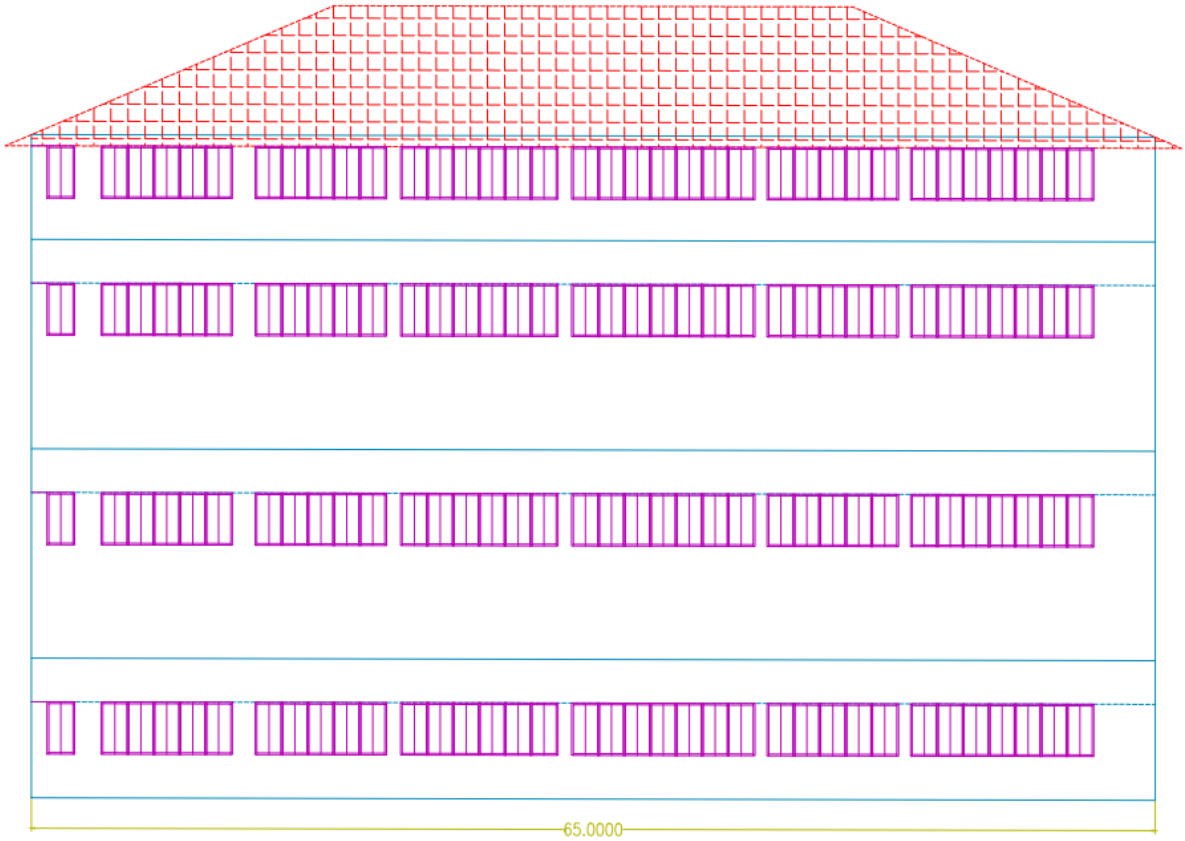
Third Floor



Top View

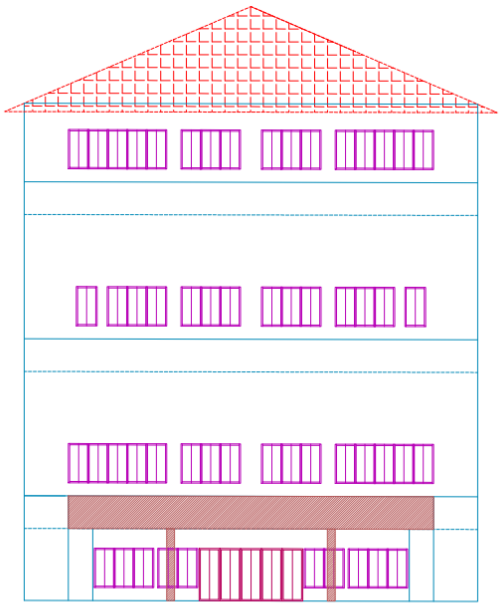


Side Elevation



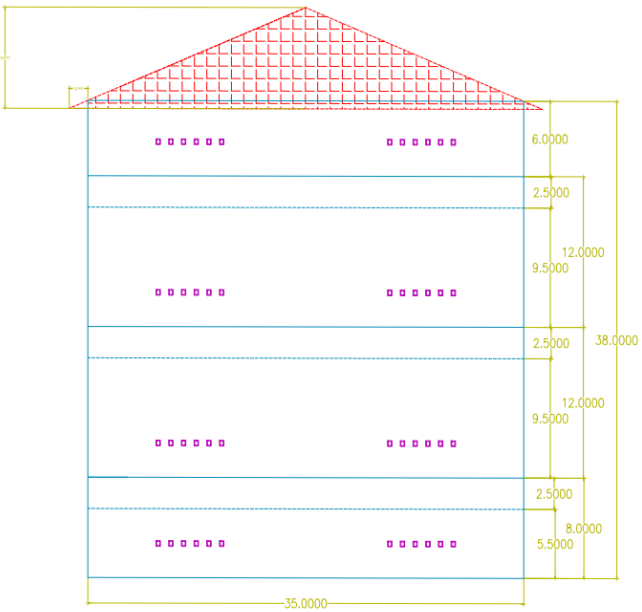
Side-elevation

Front View



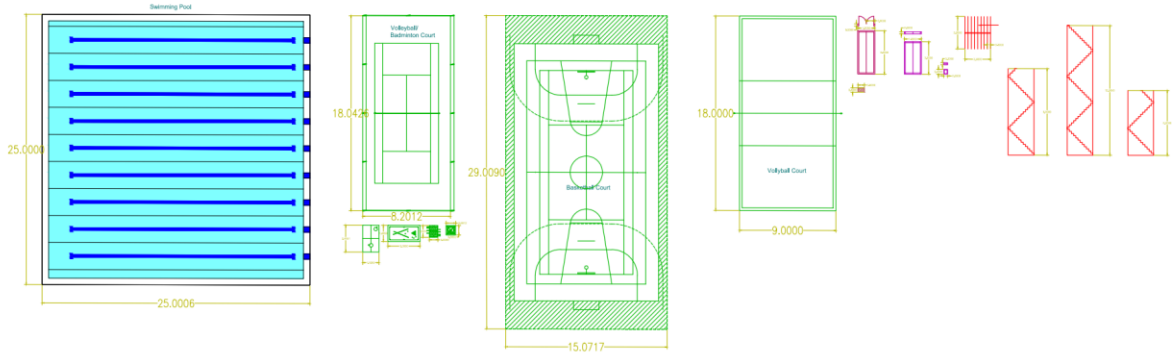
Front View

Rare Elevation

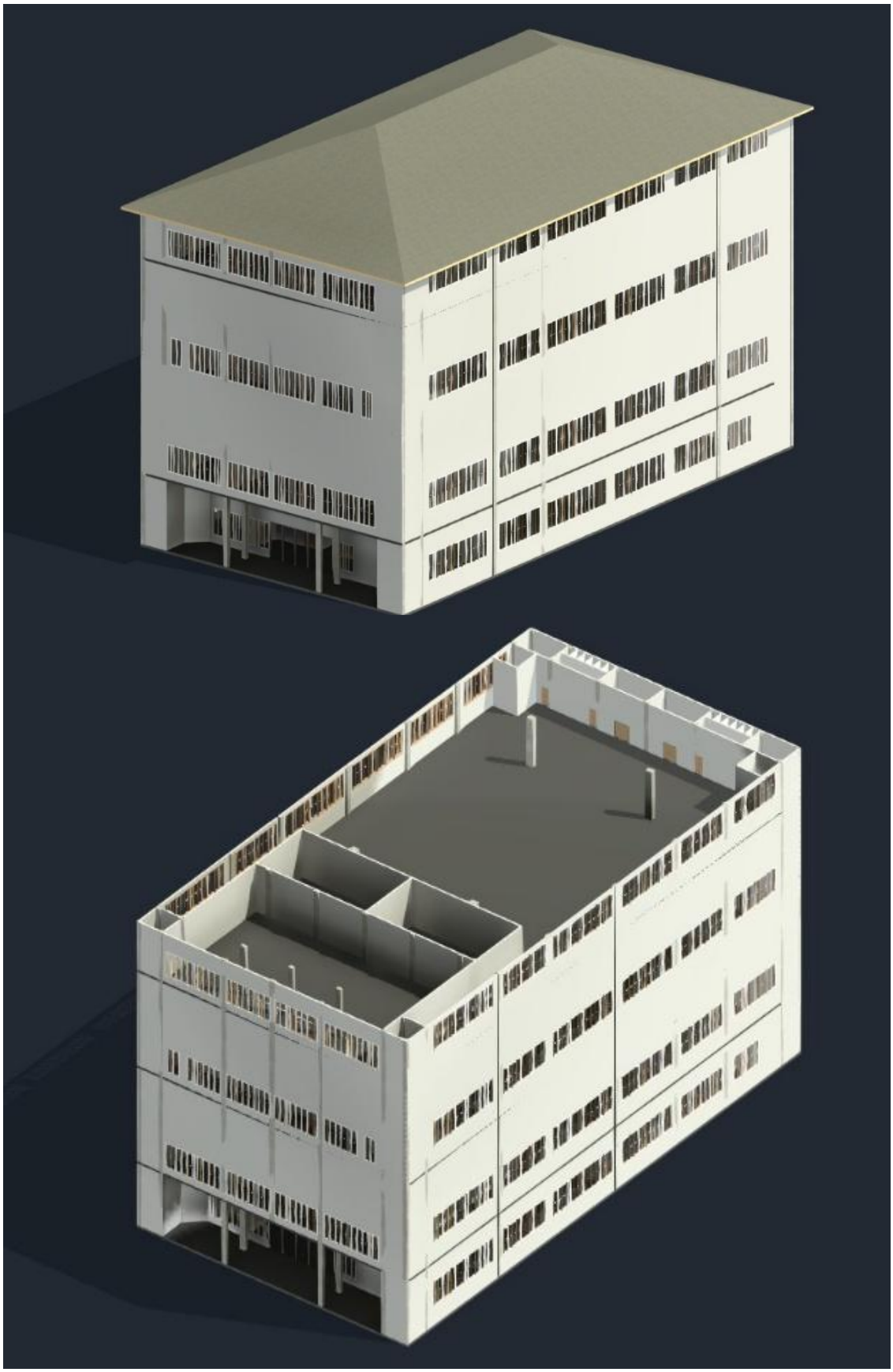


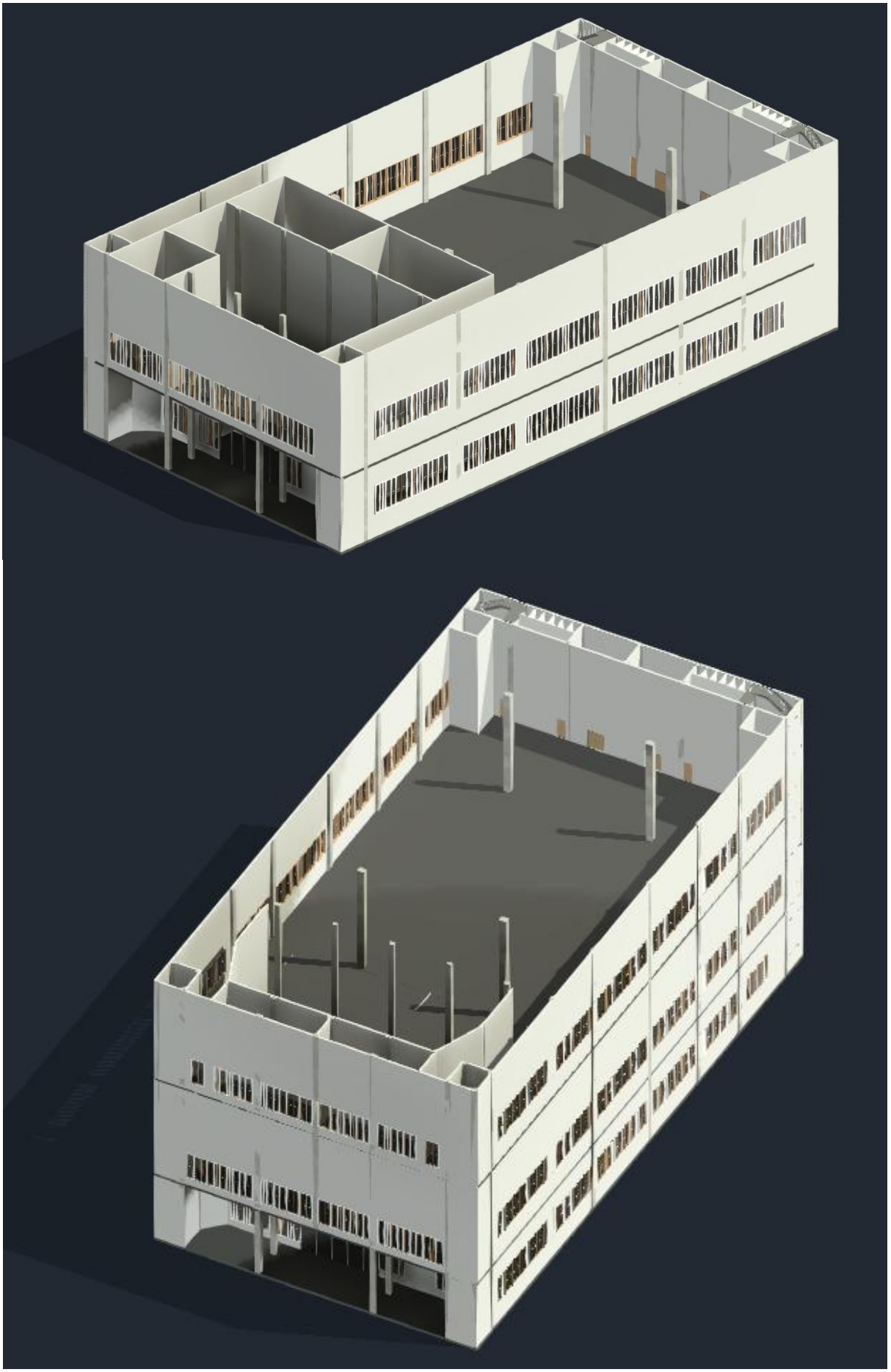
Rare-elevation

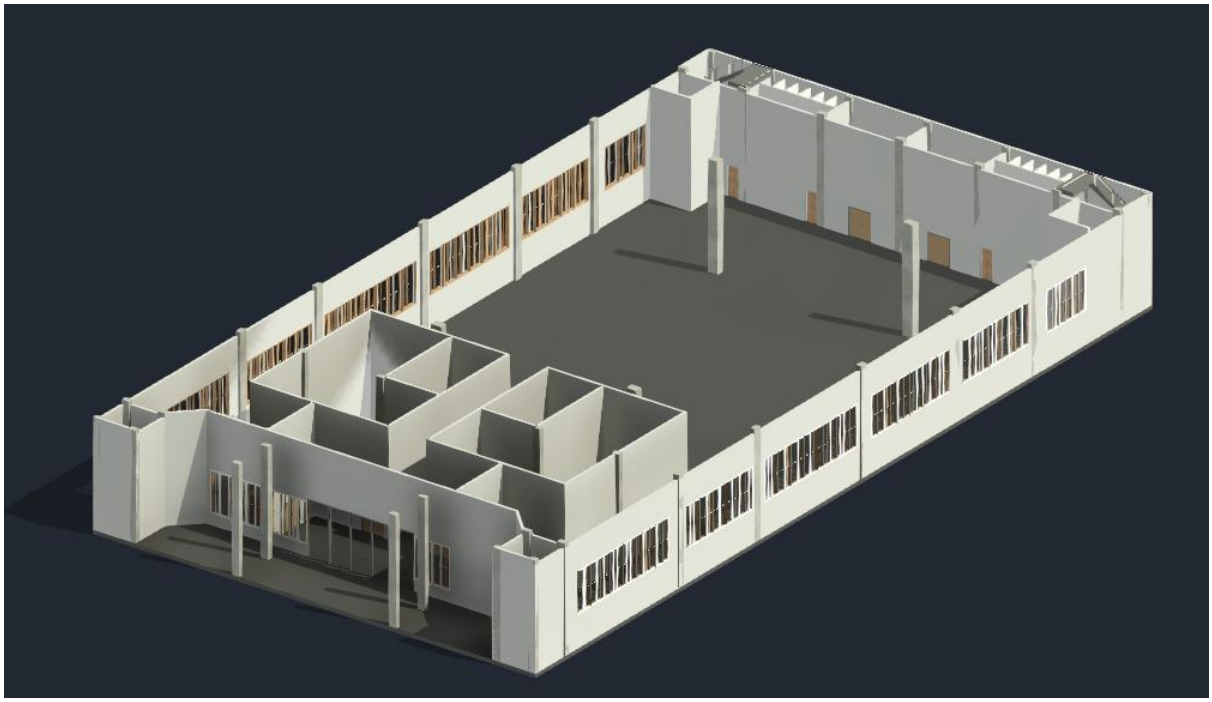
Other Elements



Screenshots







B. Collaboration Summary

Team Member	Contribution
Perera S.S.N.A	Concept design
Dharmasiri R.A.I.M	2D CAD drafting
Zihar K.R.H	Revit modelling (3D)
Desilva O.I.R.V	2D CAD drafting
James Dimithra	Report drafting
Pathirana U.P.J.T	Report drafting