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Enhancement of the Facilities at Kayamkulam Bus Terminal

Mitha Thankachan, Anagha Shaji, Jeena James

U.G. Student, Department of CE, Mount Zion College of Engineering, Kadammanitta, Pathanmthitta, India

Assistant Professor, Department of CE, Mount Zion College of Engineering, Kadammanitta, Pathanmthitta, India

Assistant Professor, Department of CE, Mount Zion College of Engineering, Kadammanitta, Pathanmthitta, India

ABSTRACT: The enhancement of facilities at Kayamkulam bus terminal aims to address current shortcomings and elevate the overall user experience. With a focus on modernization and improved amenities, this initiative seeks to meet the evolving needs of passengers and enhance the efficiency of the terminal operations. The study consisted of a thorough public survey to gauge the current situation and gather public opinions about the Bus Terminal in Kayamkulam. The planning and modeling of the enhancements at the Kayamkulam bus terminal were executed using advanced software tools such as AutoCAD and Revit Architecture.

KEYWORDS: Bus Terminal, AutoCAD drawing, 3D modelling.

I. INTRODUCTION

The enhancement of facilities at Kayamkulam bus terminal aims to improve the overall experience for travelers and streamline operations. This initiative includes upgrades such as improved seating and enhanced amenities to cater to the needs of commuters. Kayamkulam is situated in the Alappuzha district of Kerala, India, boasts a rich history as a prominent trading centre for spices and coir. The town's significance is amplified by the presence of the Kayamkulam Junction Railway Station, facilitating seamless travel for locals and visitors alike. Additionally, the town is strategically located along National Highway 66, further cementing its status as a key transportation hub.

KSRTC serves as the primary mode of public transportation in Kayamkulam, offering regular services to destinations such as Ernakulam, Alappuzha Trivandrum and extending into neighbouring states like Tamil Nadu. Despite its crucial role in connecting Kayamkulam to major cities and interstate routes, the current condition of the KSRTC bus station is alarming, characterized by significant structural disintegration and decay. The deteriorating state of the bus station poses serious concerns for passenger safety and comfort, with visible signs of structural instability and neglect evident throughout the facility. Hence, the enhancement of the facilities in the Kayamkulam Bus stand acquires great importance.

II. OBJECTIVES

The main aim of this paper is to implement a new design and model for the Kayamkulam Bus Terminal along with increasing its facilities.

III. METHODOLOGY

A public survey was employed to pinpoint shortcomings and deficiencies in the bus terminal. Leveraging software such as AutoCAD for crafting a new layout and Revit architecture for generating a comprehensive 3D model proved instrumental.

IV. SURVEY RESULTS

A public survey is essential in a bus terminal enhancement project as it provides valuable insights into the needs and preferences of the community and passengers, guiding decisions on resource allocation and design improvements. The survey results indicate widespread dissatisfaction among the public with the current state of the KSRTC bus station, with 97% of respondents expressing a strong desire for new facilities.

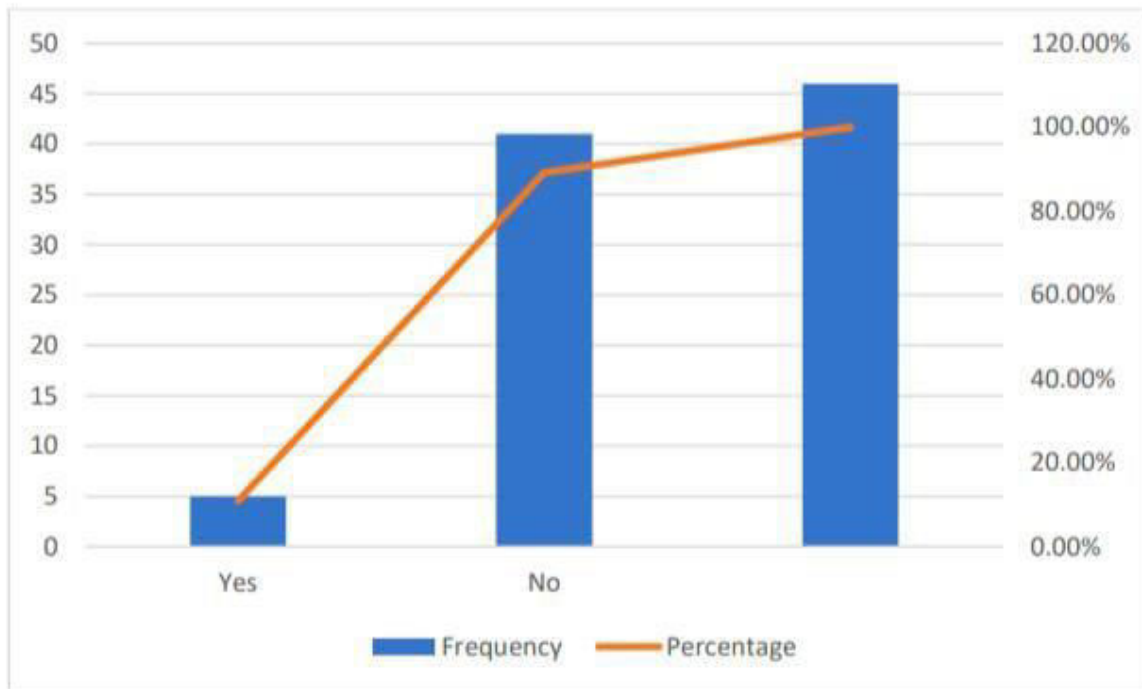


Fig. 1 Satisfaction level with the current facilities

V. PREPARATION OF NEW PLAN FOR BUS TERMINAL

The new plan for the Kayamkulam bus terminal was carefully crafted using AutoCAD software. AutoCAD stands out for its robust capabilities in computer-aided design (CAD), providing users with powerful tools for creating and editing 2D and 3D drawings with ease and precision. The layout consisted of proposed building, garage, workshop, a wide car parking area, two wheeler parking area and fuel station. The proposed building was two storeyed.

On the ground floor, a range of amenities cater to diverse needs, including dedicated spaces for waiting areas, accommodations for differently-abled individuals, and a designated feeding area for mothers, all complemented by hygienic restroom facilities. Moreover, the ground floor houses essential service facilities such as ticketing counters, separate male and female staff rooms, and an administrative office, contributing to enhanced operational efficiency and user satisfaction. Additionally, the ground floor may also accommodate commercial spaces. The first floor featured a luxurious AC lounge for relaxation, alongside a mini supermarket and various shops. Meanwhile, the second floor comprised separate dormitories for male and female occupants, providing comfortable accommodation options.

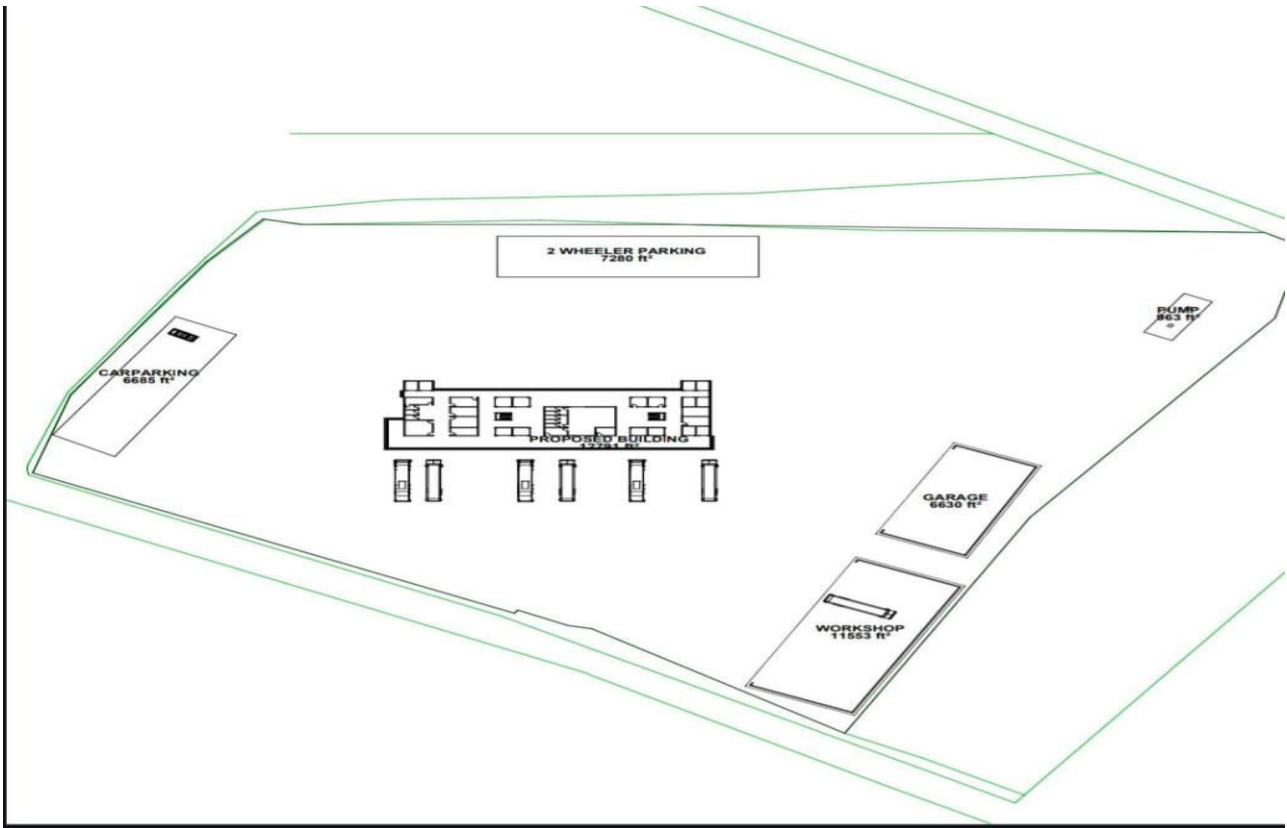


Fig.2 Layout of the bus terminal

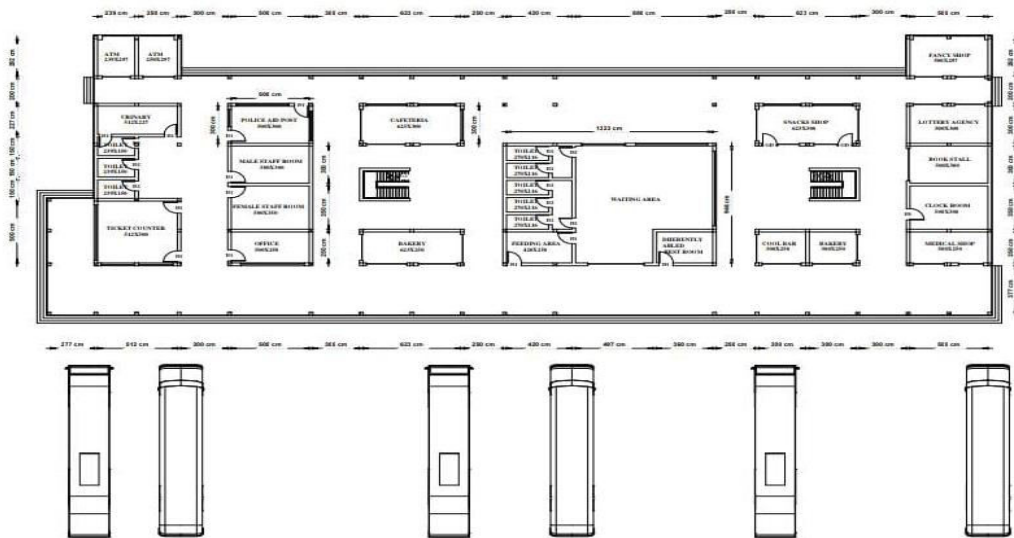


Fig .3 Ground floor plan



Fig. 4 First floor plan

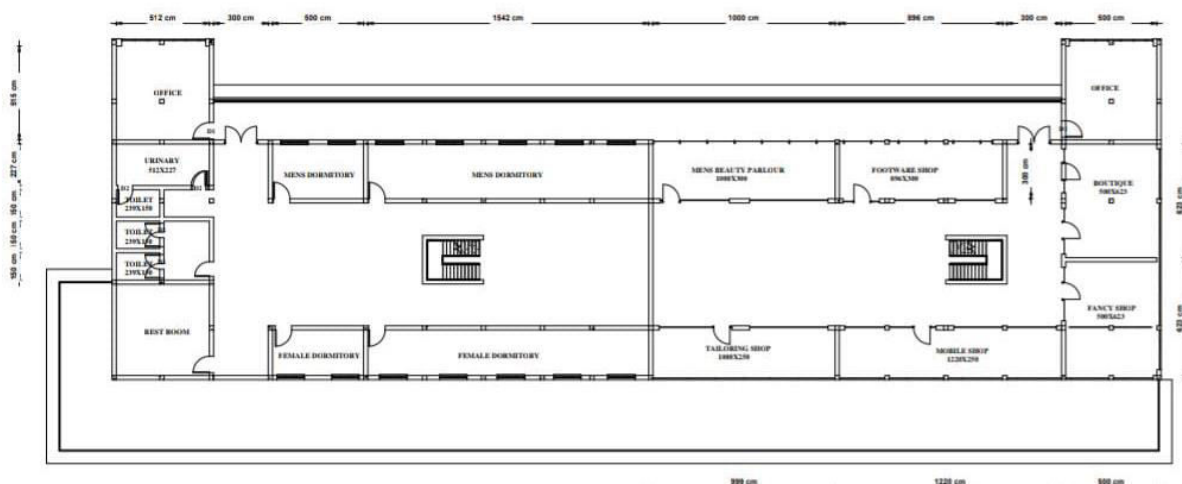


Fig. 5 Second floor plan
(All the dimensions are in Centimetres)

VI. 3D MODELLING OF THE PROPOSED PROJECT

Following the identification of issues and the development of plans featuring enhanced facilities, the project progressed to the next phase, where 3D modelling was executed utilizing Revit Architecture software renowned for its advanced modelling capabilities. Subsequently, the following images will showcase the project, illustrating the transformation from initial conceptualization to detailed design implementation.

VII. PROCEDURE OF 3D MODELLING

- Units are set in centimetres.
- Levels are created.
- Walls of 23 centimetres are provided on the exterior and interior sides.
- Partition walls of 12 centimetres are created on the interior side.
- Curtain walls are also provided on the exterior and as partition walls.
- 150 centimetres windows are provided.
- Stairs are created on the interior.

The complete bus terminal 3D would look like the following images.



Fig.6 3D View 1



Fig. 7 3D View 2



Fig. 8 3D View 3

VIII. CONCLUSIONS

In conclusion, the survey findings revealing public dissatisfaction with the current facilities at the Kayamkulam bus terminal prompt the proposal of a comprehensive approach. This involves suggesting a new layout and plan using AutoCAD software, with modelling proposed through Revit architecture. The proposed facilities include hygienic washrooms, a feeding room for mothers, provisions for disabled individuals, space for shops, and dormitories for both males and females. Overall, these improvements aim to significantly enhance the functionality and comfort of the Kayamkulam bus terminal.

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