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A U T O N O M O U S

BUILDHUB Lite

24MCAR295 - Mini Project

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ABSTRACT

BUILDHUB Lite is a simple yet practical platform designed to make early house planning easier, especially for people who are just starting to think about building a home. It connects three key players — Homeowners, Architects, and Contractors — in one place and helps them collaborate more efficiently.

The main purpose of this project is to provide a quick construction cost estimate based on plot size and location, along with suggestions for layout designs and material/labor cost planning — all without having to physically visit multiple people. It's like giving users a head start in their construction journey, right from their computer.

Before anyone can participate, Architects and Contractors are required to upload their qualification documents, which are then reviewed and verified by the Admin. This makes sure only trusted professionals are involved.

1. Homeowner Module

This is the person who owns a plot and wants to start building. After signing up (either using email or Google), they can:

- Enter plot details like size and location.

- Instantly get a rough cost estimate for construction.

- View a list of verified Architects who can suggest layout plans.

- Send requests to Architects and view the layout designs they provide.

- Once layouts are in, they can even reach out to verified Contractors to get material suggestions and cost breakdowns.

2. Architect Module

Architects are the ones who can turn the homeowner's vision into a structured plan. Their role is simple but important:

- They register with basic details and upload qualification proof.

- After the Admin approves them, they can see layout requests from homeowners.

- They can either suggest designs from a layout library or upload new ones (in image or PDF format).

- They help homeowners understand how their dream home can actually look and function.

3. Contractor Module

Once a homeowner has a layout in mind, they'll want to know how much it might actually cost to build. That's where the Contractor comes in:

- Like Architects, Contractors register and upload documents for Admin verification.

- Once approved, they can view the plot details and selected layout plans.

- Based on that, they provide:

  - A material list (e.g., cement, bricks, steel)

  - Estimated labor cost

  - A complete price breakdown

- This helps homeowners compare offers from multiple contractors before making a decision — like a mini marketplace.

4. Cost Estimation Module

This module does the initial math. When a homeowner enters their area and location, the system:

- Multiplies the area with the average material rate for that region.

- Adds a ±5% buffer to cover small variations.

- Gives a quick and simple estimate — not super-precise, but perfect for initial planning.

- Helps users know what to expect financially before moving forward.

5. Layout Plan Library

We know that many people don't know where to start when it comes to house design. That's why we added a library of sample layout plans:

- Architects can use these ready-made layouts instead of creating new ones from scratch.

- Homeowners can quickly choose the one they like.

- Saves time, especially for common needs like 2BHK or duplex houses.

6. Admin Module

The Admin is like the gatekeeper who keeps things fair and professional:

- Logs in through a secure panel.

- Reviews all Architect and Contractor registrations.

- Checks their documents and only approves genuine professionals.

- Can block or reject unqualified users.

Technology Used
- Frontend: HTML5, CSS3, Bootstrap, TailwindCSS
- Backend: PHP
- Database: MySQL
- Authentication: Email/Password and Google Sign–In

Workflow :

1. User Registration

    o   Homeowners, Contractors, and Architects sign up via email or Google login.

    o   Contractors and Architects upload qualification documents.

    o   Admin verifies their credentials.

2. Homeowner Actions

    o   Logs in → Enters plot area and location.

    o   System shows estimated construction cost.

    o   Views list of verified Architects.

    o   Selects an Architect → Sends layout request.

    o   Views layouts suggested by Architect.

    o   Sends data to Contractors for cost suggestions.

3. Architect Actions

    o   Registers → Uploads documents → Waits for Admin approval.

    o   Once approved, receives layout requests from Homeowners.

    o   Shares layout suggestions using layout library or custom designs (PDF/Image).

    o   Can suggest multiple layouts if needed.

4. Contractor Actions

- Registers → Uploads documents → Waits for Admin approval.

- Once approved, views Homeowner's plot data and layouts.

- Sends material suggestions and detailed cost breakdown.

- Homeowners can compare cost options from multiple Contractors.

5. Admin Actions

- Securely logs in.

- Views all new Architect/Contractor accounts with uploaded documents.

- Approves or rejects based on documents.