

# FreedomHouse™

## Federal Housing Coordination Platform

Software Requirements Specification

Module 1 & Module 2 — Prototype

<b>Project</b>	FreedomHouse™ — Canada Federal Housing Coordination Platform
<b>Document type</b>	Software Requirements Specification (SRS)
<b>Version</b>	1.0 — Prototype Phase
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<b>Date</b>	May 18, 2026
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<b>UI lead</b>	Ismail — Frontend & UX Layer
<b>Scope</b>	Module 1: Identity Management & Role-Based Access Module 2: Land Registry & Capacity Management

**Purpose of this document:** This SRS covers Module 1 (Identity Management & Role-Based Access) and Module 2 (Land Registry & Capacity Management). It includes use cases, field specifications, and annotated prototype screens. Technology stack: ASP.NET Core 8.0 · PostgreSQL · PostGIS · Argon2id · OpenAPI 3.0.

## System Overview

FreedomHouse™ is an integrated SaaS platform addressing Canada's housing crisis by connecting landowners, eco-professionals, builders, and home seekers on a single federal-grade digital ecosystem. The platform optimises spatial land data, reduces infrastructure costs, and accelerates affordable modular homeownership.

Actor	Description	Access level
Home Seeker	Canadians seeking affordable modular housing. Can browse land listings and request assignments.	End user
Land Owner	Property owners registering land parcels for modular development.	Contributor
Builder	Construction professionals accessing approved land with legal documents.	Contributor
Eco-Professional	Environmental compliance specialists ensuring federal green standards.	Clinical
Admin (Mohamed)	Platform administrators controlling security, audit trail, and housing supply.	Admin

## Module 1 — Identity Management & Role-Based Access

**Purpose:** Establish a secure, user-friendly, and role-based authentication infrastructure. Ensures all stakeholders can safely join the system and interact within the scope of their permissions. Built on ASP.NET Core 8.0 with Argon2id password hashing, HttpOnly cookie authentication, and CSRF protection.

### Use Cases

ID	Use case	Primary actor	Preconditions	Postconditions
UC-01	Register — Home Seeker	Unregistered user	Valid email; budget info provided	Account created; role set to HomeSeeker; budget stored for matching
UC-02	Register — Land Owner	Unregistered user	Valid email	Account created; role set to LandOwner; dashboard access granted
UC-03	Register — Builder	Unregistered user	Valid email	Account created; role set to Builder; land registry access granted
UC-04	Register — Eco-Professional	Unregistered user	Valid email	Account created; role set to EcoProfessional; compliance tools accessible
UC-05	Login	Any registered user	Account active; email and password provided	Session created; role-based dashboard loaded; audit entry written
UC-06	Logout	Any authenticated user	Active session exists	Session terminated; HttpOnly cookie cleared; audit entry written
UC-07	Password Recovery	Any registered user	Valid registered email provided	Recovery email sent; 3-step verification flow initiated; password reset
UC-08	Manage User Profile	Any authenticated user	User is logged in	Full name, income tier, and budget updated; change logged; matching re-scored
UC-09	Role-Based Dashboard Access	System / Admin	User is authenticated	Dashboard view filtered strictly to user's role permissions; cross-role access blocked

### Field Specifications — Registration Form

Field	Type	Required	Validation / Notes
Full name	Text	Yes	Min 2 chars; displayed on dashboard
Email address	Email	Yes	Unique; used as login identifier; cannot be changed post-registration

Field	Type	Required	Validation / Notes
Password	Password	Yes	Min 8 chars; hashed with Argon2id before storage
Confirm password	Password	Yes	Must match password field exactly
Role selection	Radio	Yes	Home Seeker / Land Owner / Builder / Eco-Professional
Minimum budget (\$)	Number	Conditional	Required for Home Seeker role; used for matching algorithm
Maximum budget (\$)	Number	Conditional	Required for Home Seeker role; drives property assignment filters
Income tier	Dropdown	Conditional	Required for Home Seeker; affects priority scoring
Terms & privacy consent	Checkbox	Yes	Must be checked; timestamp recorded with IP address

### Prototype Screens — Module 1

UC-01 to UC-04: Role-based registration. Four role cards at the top adapt the form dynamically — budget fields appear only for Home Seekers. Consent checkbox is mandatory.

**F FreedomHouse** Modular Designs Dashboard Land Registry **LANDOWNER** Profile Logout

## Create your FreedomHouse account

Select the role that best describes you to get started.

Select your role

**H**  
**Home Seeker**  
Find your ideal home

**L**  
**Land Owner**  
List your property

**B**  
**Builder**  
Build projects

**E**  
**Eco-Pro**  
Environmental compliance

**Personal information**

Full name \*  
Maya Johnson

Email address \*  
maya@email.com

Password \*  
.....

Confirm password \*  
.....

**Home Seeker preferences**

Minimum budget (\$)  
\$50,000

Maximum budget (\$)  
\$75,000

Income tier  
High Income

I agree to the FreedomHouse terms and privacy policy.

**Create Account & Join Platform** Already have an account?

Figure 1 — UC-01 to UC-04: Register new user (Home Seeker role selected)

UC-05 to UC-07: Login and password recovery. Federal-grade security notice displayed. Argon2id encryption and CSRF protection active on all form submissions.

Figure 2 — UC-05/06/07: Login screen with security notice

UC-08: Manage User Profile. Users update full name, income tier, and budget. Budget changes directly affect property assignment eligibility.

Figure 3 — UC-08: Federal Identity & Financial Management (profile update)

# Use Case Diagram — Module 1 & Module 2

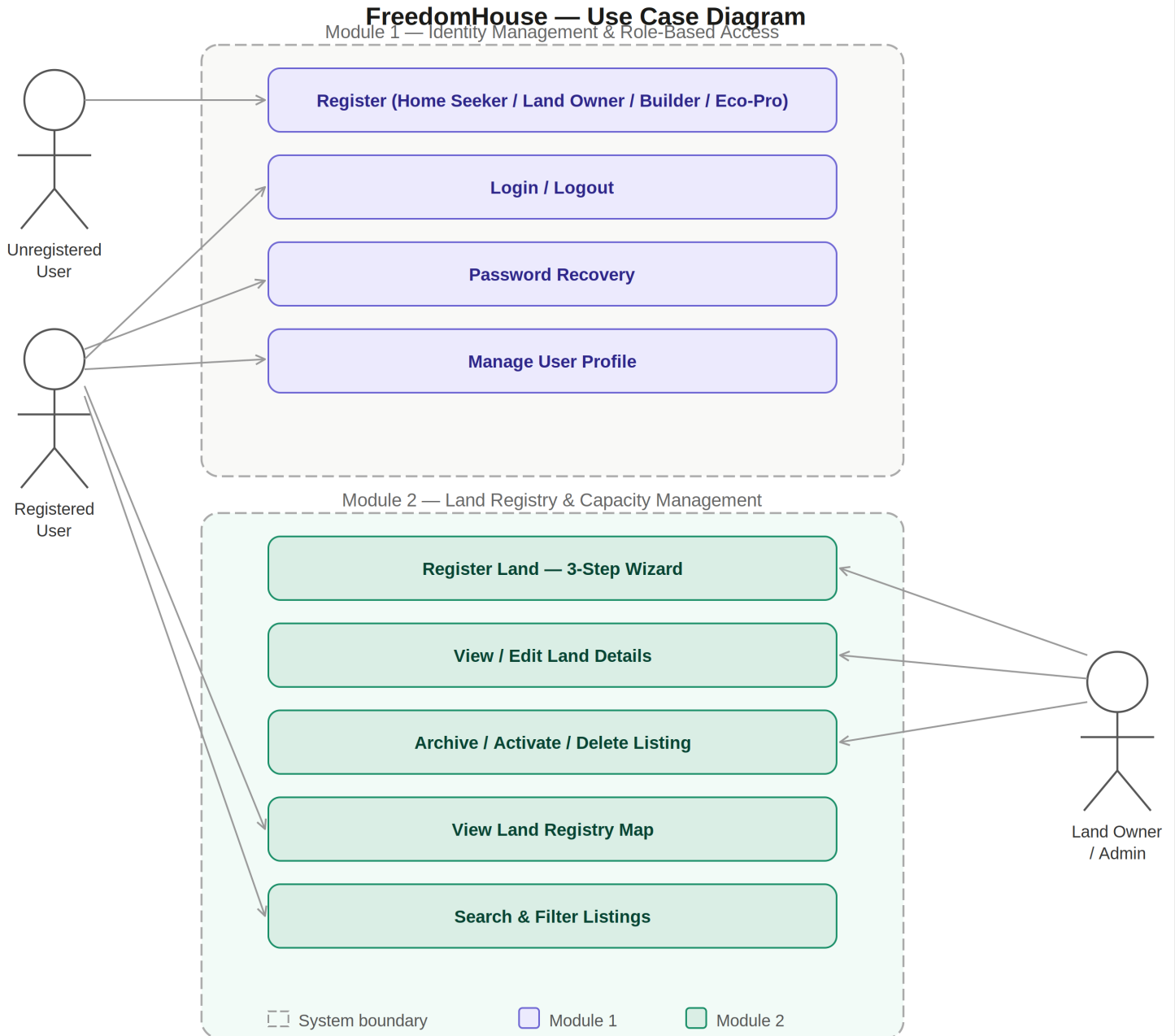


Figure D1 — UC01–UC09 (Module 1) and UC10–UC16 (Module 2). Actors: Unregistered User, Registered User, Land Owner / Admin.

# Registration & Login Flowchart — Module 1

## FreedomHouse — Registration & Login Flowchart

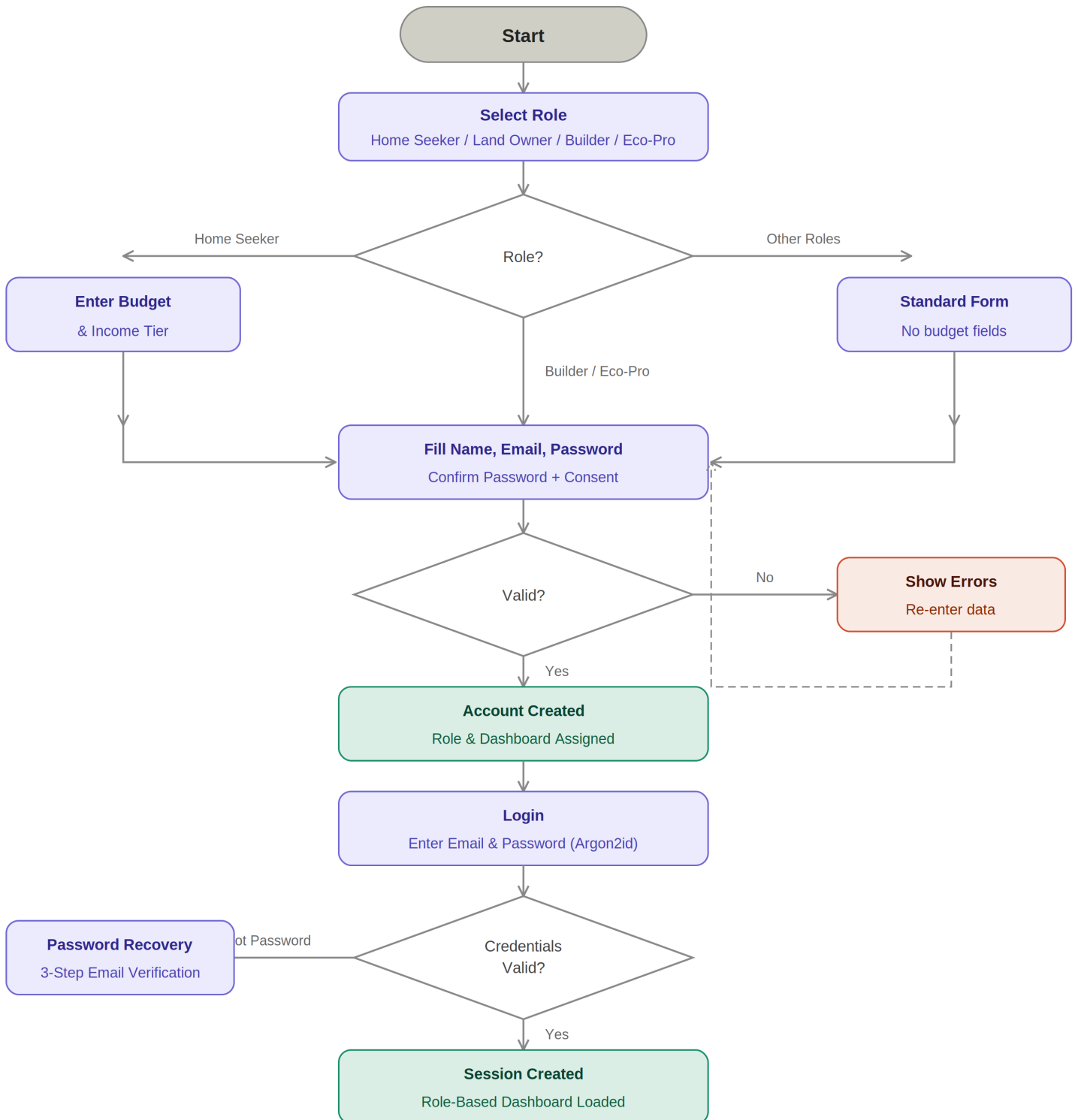


Figure D2 — Role selection → budget branch (Home Seeker) or standard form → validation → account creation → login (with Forgot Password).

## Module 2 — Land Registry & Capacity Management

**Purpose:** Identify and register land parcels suitable for modular housing development. Allows Land Owners and Admins to register properties with legal documentation, assign federally approved modular designs, and manage listings dynamically. Built on PostGIS spatial data with coordinate-based land recording.

### Use Cases

ID	Use case	Primary actor	Preconditions	Postconditions
UC-10	Register Land — Step 1: Land Info & Location	Land Owner / Admin	User is authenticated as LandOwner or Admin	Land address, zoning code, GPS coordinates, and infill capacity saved; status = Draft
UC-11	Register Land — Step 2: Assign Modular Design	Land Owner / Admin	Step 1 complete; land record exists	Federal housing design linked to land parcel via TargetId architecture
UC-12	Register Land — Step 3: Upload Documents	Land Owner / Admin	Steps 1 and 2 complete	Deed, site plan, or zoning certificate uploaded; listing status = Available
UC-13	View / Edit Land Details	Land Owner / Admin	Land listing exists	Technical details, design assignments, and documents updated; audit log entry written
UC-14	Archive / Activate / Delete Listing	Land Owner / Admin	Land listing exists and is owned by user	Listing status changed to Archived, Active, or permanently deleted; dashboard updated
UC-15	View Land Registry Map	Any authenticated user	User is authenticated	Interactive map displayed with all available listings; filterable by location, zoning, and budget
UC-16	Search & Filter Listings	Home Seeker / Builder / Admin	User is authenticated	Filtered land results displayed based on location keyword, zoning code, and housing type

### Land Registration — Field Specifications

Field	Type	Required	Validation / Notes
Street address	Text	Yes	Full civic address; geocoded to PostGIS Point coordinate
City / Region	Text	Yes	Ontario pilot regions: Kingston, Toronto
Zoning code	Text	Yes	e.g. R3-MODULAR, R4-HIGH; validated against provincial registry

Field	Type	Required	Validation / Notes
Max units (capacity)	Number	Yes	Integer; max modular units the parcel can support
Development status	Dropdown	Yes	Available / Draft / Archived
Water service	Checkbox	Yes	Site services: Water / Sewage / Hydro (electricity) / Gas
Sewage service	Checkbox	Yes	Must be confirmed before listing goes Active
Electricity (Hydro)	Checkbox	Yes	Required for modular building compliance
Natural gas	Checkbox	No	Optional; affects energy compliance scoring
Modular design	Select	Yes (Step 2)	Select from federally approved inventory (The Studio, The Family Suite, Eco-Cabin XL, etc.)
Documents	File	Yes (Step 3)	PDF/image; deed, site plan, or zoning certificate required before activation

### Prototype Screens — Module 2

UC-10 to UC-12: 3-step land registration wizard. Step 1 (shown): address, zoning, site services, and interactive map marker. Steps 2 and 3 follow on subsequent screens.

**F FreedomHouse** Modular Designs Dashboard Land Registry **LANDOWNER** Profile Logout

## Register New Land

Complete the 3-step registration process to list your property.

1 Land Info & Location 2 Assign Design 3 Upload Documents

**Step 1 — Land information and location**

Street address \*

1666 Victoria St., Kingston, ON, K7M 5H3

City / Region \* Zoning code \*

Kingston, Ontario R3-MODULAR

Max units (capacity) Development status

3 Available

**Infrastructure & site services**

**W** Water Available **S** Sewage Available **H** Hydro Available **G** Gas Available

Interactive map — click to mark land location  
Leaflet / OpenStreetMap

Next: Assign Design → Save as Draft

Figure 4 — UC-10 to UC-12: Land Registration Wizard — Step 1 (Land Info & Location)

UC-13/14: Landowner Federal Dashboard. Shows all registered land cards with status (draft, active, deactivated). Occupancy rate and quick-access actions per listing.

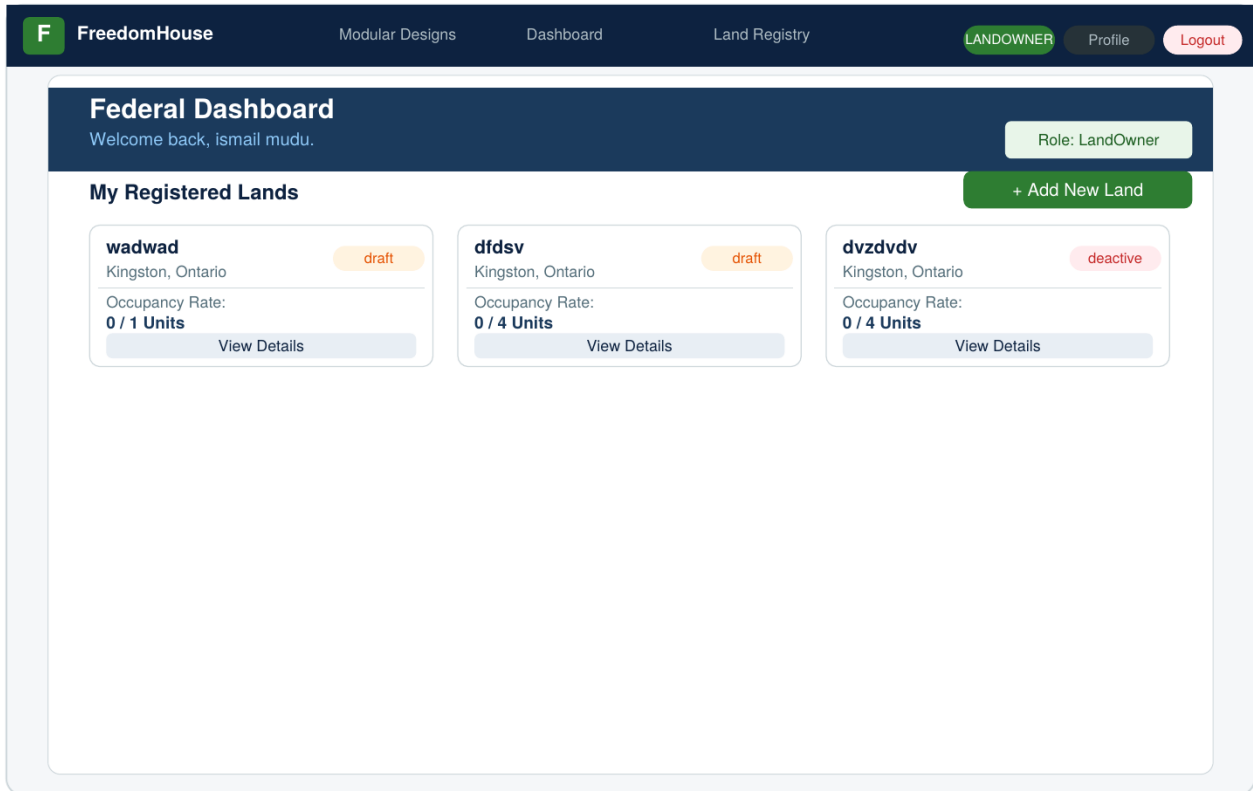


Figure 5 — UC-13/14: Federal Dashboard — Landowner view with registered land listings

UC-15/16: Land Registry Map with advanced compliance search. Leaflet / OpenStreetMap integration. Filterable by location keyword, zoning code, and housing type. Budget cap displayed for Home Seekers.

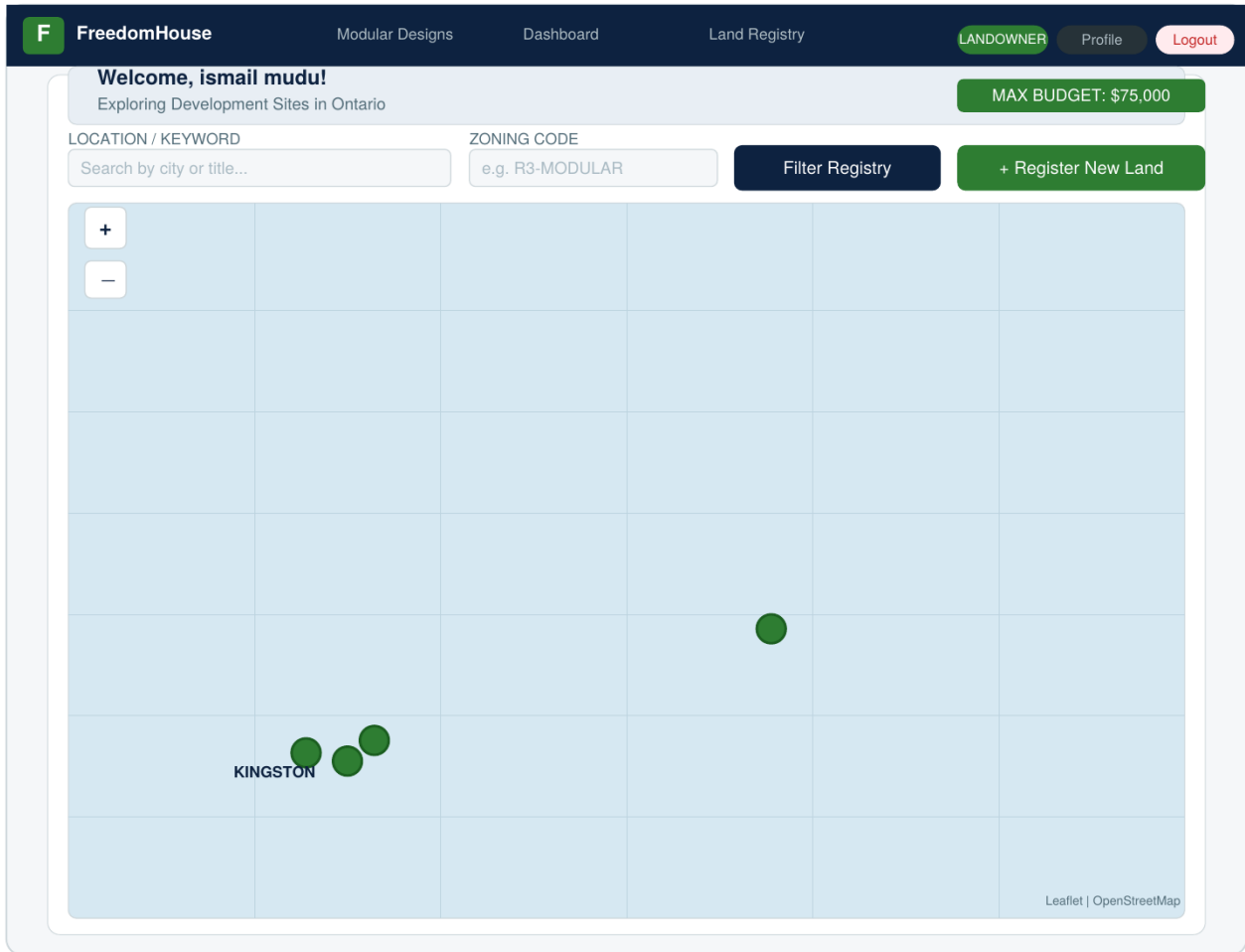


Figure 6 — UC-15/16: Land Registry Map with filter controls (Ismail UI)

# Entity Relationship Diagram — Data Model

## FreedomHouse — Entity Relationship Diagram

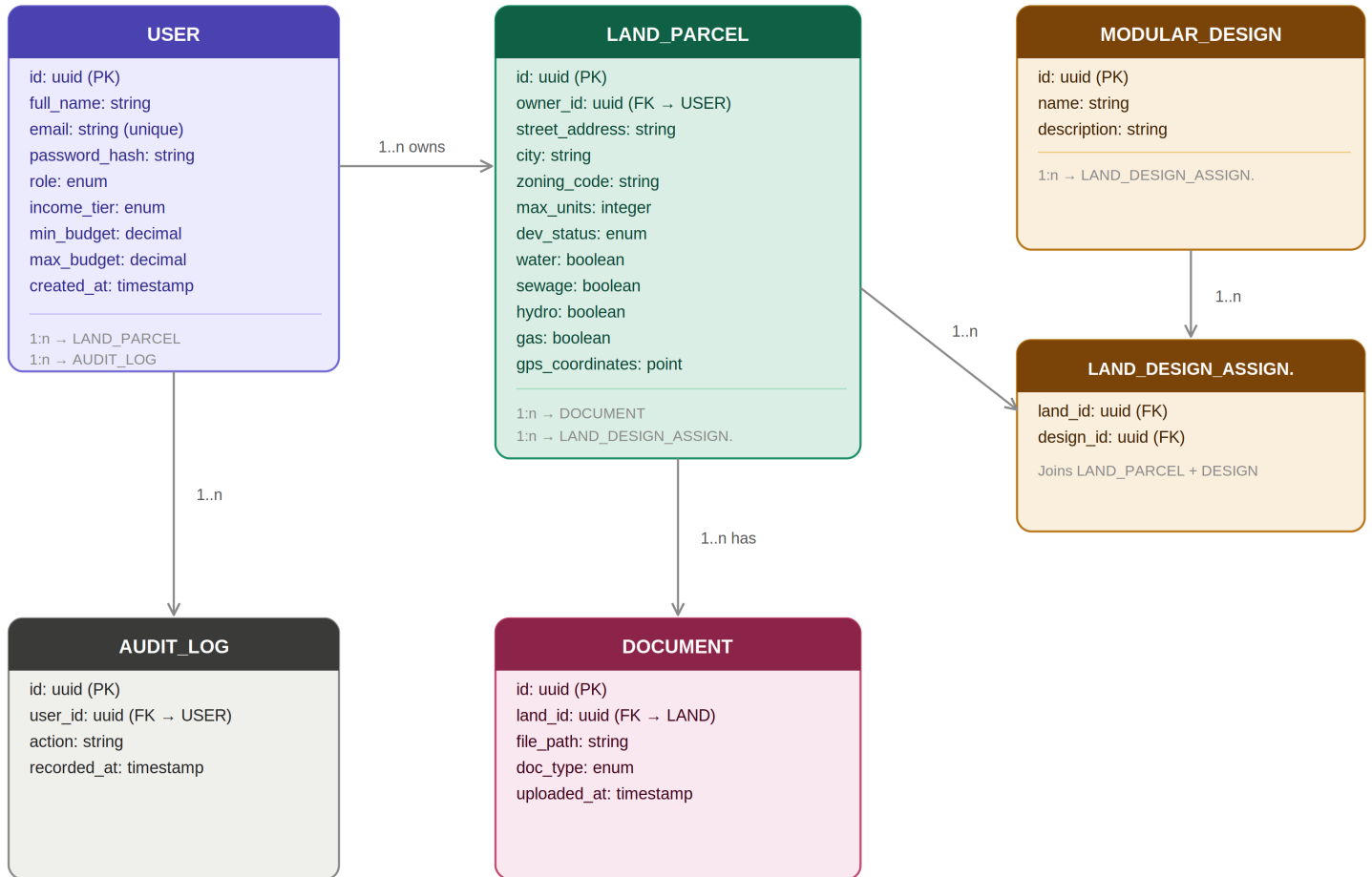


Figure D3 — USER owns LAND\_PARCEL; links to DOCUMENT, LAND\_DESIGN\_ASSIGNMENT (with MODULAR\_DESIGN) and AUDIT\_LOG.