Below is a comprehensive, professional-style documentation for your "Hand Up Housing" (HUH) site, incorporating the roles, deployment details, key features, and maintenance best practices gleaned from your conversation. Feel free to adapt or expand any sections as needed.

Hand Up Housing (HUH) – Final Project Documentation

1. Overview

Project Name

- Hand Up Housing – also referred to as HUH

Project Purpose

Hand Up Housing helps volunteers, social workers, and administrators efficiently manage and locate housing options for community members in need. Users can create and update listings, apply advanced filters (bedrooms, bathrooms, income requirements, etc.), and securely view property details under role-based permissions.

Primary Domain

- https://huhconnectmadco.com

(Access restricted to the correct roles. Site is served over HTTPS.)

2. Key Features

1.   Advanced Filtering

- Bedrooms & Bathrooms (min)

- Property Type (house, apartment, condo)

- Pets Allowed, ADA Accessible toggles

- Past Eviction, Sex Offender, Criminal Record, Issues

- Income Requirement – filter listings by a maximum threshold.

2.   Role-Based Access

- Volunteer – can create and update property listings.

- Social Worker – read-only browsing of listings.

- Admin – superuser privileges; can manage users, listings, and all site functions.

3. Listing Management

- Create, read, update, and delete (CRUD) listings.

- Image Upload (optional field) per listing.

4. Full-Text Search

- Substring search across address, landlord_contact, and additional_info.

5. Django Admin Panel

- Admin can manage roles, permissions, plus advanced site settings.

6. Responsive Layout

- Uses w3.css or Bootstrap (depending on final styling) for mobile-friendly pages.

3. Technology Stack

- Language & Framework: Python 3.x + Django 4.x

- Database: SQLite (default) – easy for moderate concurrency. Front-End: HTML, CSS (w3.css).

- Server: Gunicorn (app server) + Nginx (reverse proxy)

- Hosting: Google Cloud Platform (GCP) Virtual Machine (Debian/Ubuntu-based)

- SSL / HTTPS: Let's Encrypt + Certbot

(The site is configured so domain-based traffic is served at https://huhconnectmadco.com, IP-based access is restricted.)

4. Installation & Local Development

Prerequisites

- Python 3.9+ recommended

- pip or venv for virtual environments

Steps

1. Clone the Repository

"git clone git@github.com:YourOrg/HandUpHousing.git"
"cd HandUpHousing"

2. Create & Activate Virtual Environment

"python -m venv venv"
"source venv/bin/activate"
or
For powershell: "venv\Scripts\Activate.ps1"

3. Install Dependencies

"pip install -r requirements.txt"

4. Run Migrations

"python manage.py migrate"

5. Start Dev Server

"python manage.py runserver"

The site is now accessible at http://127.0.0.1:8000.

6. (Optional) Create Superuser

"python manage.py createsuperuser"

This allows local admin panel access at http://127.0.0.1:8000/admin/.

5. Production Deployment (Google Cloud VM)

Current Setup

- OS: Debian/Ubuntu-based VM

- Services: Nginx (port 80/443), Gunicorn (listening on a socket or localhost port)

Steps to Update/Deploy

1. SSH into the VM:

"gcloud compute ssh <YOUR_VM_NAME> --zone <ZONE>"

or using standard SSH with credentials.

2. Pull Latest Code (if using Git):

"cd /home/<YOUR_USER>/affordable_housing_project"
"git pull origin main"

3. Install/Update Python Dependencies

"source venv/bin/activate"
"pip install -r requirements.txt"

4. Apply Migrations

"python manage.py migrate"

5. Collect Static

If you have static files on production:

"python manage.py collectstatic"

6. Restart Services

"sudo systemctl restart gunicorn"
"sudo systemctl restart nginx"

This ensures new code and static files are loaded.

Nginx & Gunicorn

- Nginx config typically at: /etc/nginx/sites-available/django.conf

- Gunicorn systemd service at: /etc/systemd/system/gunicorn.service SSL

- Certificates handled by Certbot. Usually auto-renewed, or run:

"sudo certbot renew"

as needed.

6. Site Usage & Roles

Logging In

- Default domain: https://huhconnectmadco.com

- Users see a Login or Register option if not logged in.

Role Capabilities

1. Volunteer

- Create new listings (Add New Listing button).

- Update existing listings (edit form).

- Cannot manage user roles.

2. Social Worker

- Read-only access to listing data.

- Cannot create, edit, or delete.

3. Admin (Superuser)

- Full privileges: manage all listings, user roles, admin panel, etc.

Filtering & Searching

- Search Bar: Type text to match address, landlord_contact, or additional_info.

- Filter Form:

- Bedrooms, Bathrooms (min)

- Property Type (house/apartment/condo)

- Pets, ADA, Eviction, etc. (Yes/No)

- Income Requirement (less-than-or-equal numeric threshold)

7. Admin Panel & Maintenance

Admin URL

- Typically at /admin/.

Managing Users

1. Log in as an admin or superuser.

2. Go to Users in the admin panel.

3. Edit user to assign them to the "Volunteer" or "Social Worker" group.

Common Admin Tasks

- Create superuser for new staff:

python manage.py createsuperuser

- Assign roles via the admin panel or group membership.

8. Database & Data

SQLite (default)

- File-based DB at db.sqlite3 in the project root.

- Backup by simply copying db.sqlite3 regularly.

Potential Migration to PostgreSQL

- If concurrency or scale grows, consider updating DATABASES in

    housing_site/settings.py:

```
DATABASES = {
  'default': {
    'ENGINE': 'django.db.backends.postgresql',
    'NAME': 'mydbname',
    'USER': 'mydbuser',
    'PASSWORD': 'mydbpass',
    'HOST': 'localhost',
    'PORT': '5432',
  }
}
```

- Then run standard Django migrations.

9. Security

1.   HTTPS: Configured via Let's Encrypt, Nginx redirects all traffic to port 443.

2.   Django SECRET_KEY: Stored privately in housing_site/settings.py; do not expose publicly.

3.   Allowed Hosts: 'ALLOWED_HOSTS = ["huhconnectmadco.com"]' ensures IP-based requests are blocked or invalid.

4.   Debug Setting: In production, DEBUG = False.

10. Troubleshooting & FAQ

1.   "Site shows old code changes."

- Possibly forgot sudo systemctl restart gunicorn && sudo systemctl restart nginx.

2.   "Admin can't log in."

- Check admin credentials. Possibly re-create with createsuperuser.

3.   "Static files not loading."

- Run python manage.py collectstatic, confirm Nginx config for static path.

4.   "Domain's SSL certificate expired."

- Check certbot renew logs or run sudo certbot renew --dry-run.

11. Support & Handover

- Contact: If you (the client) have questions on maintenance, domain changes, or scaling, reach out to the developer/consultant who provided this doc.
- Handover: This doc, plus the code repository (GitHub or local zip), ensures the client fully owns the deployment.

13. Conclusion

The Hand Up Housing (HUH) site is now fully deployed on huhconnectmadco.com, offering a secure, role-based system for listing and filtering properties. This documentation provides everything needed to:

- Maintain and update the site (development & production steps).

- Use the site's features day to day (searching, filtering, listing management).

With this documentation in hand, the client has a comprehensive reference to operate the solution effectively going forward.