

**UMGC Property Rentals**  
**Multi-Platform User Interface Design Document**

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# 1. Introduction

## 1.1 Purpose

The purpose of this document is to present the detailed user interface design for *UMGC Property Rentals*, a multi-platform system that supports both office staff and rental property seekers. The design described here serves as the blueprint for developing functional interfaces across desktop, web, and mobile environments. It defines the layout, navigation, and interaction patterns of each screen to ensure a consistent and intuitive user experience.

This document also ensures that the design aligns with Jakob Nielsen's *10 Usability Heuristics for User Interface Design*, promoting clarity, consistency, and efficiency across all platforms. The goal is to create an interface that enables staff to efficiently manage property data and allows renters to easily find and inquire about available listings.



## 1.2 Scope

The scope of this user interface design encompasses three interconnected applications within the *UMGC Property Rentals* system:

### **Desktop Application (Office Staff)**

Designed for internal staff to add, update, and delete property listings. The desktop interface includes modules for managing property information, uploading photos, editing property features, and monitoring listings.

### **Web Application (Renters)**

Provides a public-facing platform for renters to browse available properties, apply filters (such as price, location, or number of bedrooms), view detailed listings, and contact *UMGC Property Rentals* directly for inquiries.

### **Mobile Application (Renters)**

A streamlined version of the web interface optimized for smartphones and tablets. It allows users to quickly search, view, and express interest in properties while maintaining ease of use and performance on smaller screens.

The document focuses strictly on user interface design, including screen layouts, navigation flow, and user interaction elements. It does not cover system architecture, database implementation, backend processes, or external system integration.



## 1.3 Reference Document

This section identifies the primary documents and resources that informed the design and development of the *UMGC Property Rentals* user interface. These references provide the foundational guidelines, usability principles, and technical standards applied throughout the design process. They ensure that the interface aligns with industry best practices, academic expectations, and project-specific requirements.

### References Used

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## 1.4 Terms, Abbreviations and Acronyms

This section defines the key terms, abbreviations, and acronyms used throughout the *UMGC Property Rentals User Interface Design Document*. These definitions ensure clarity and consistency for all readers, including designers, developers, and evaluators involved in implementing or reviewing the interface design. Each entry provides the full term followed by its abbreviation (if applicable) and a brief explanation of its relevance within the system.

### **Accessible Rich Internet Applications (ARIA)**

A set of W3C specifications that enhance the accessibility of dynamic web content and applications for users relying on assistive technologies such as screen readers.

### **Application Programming Interface (API)**

A set of protocols and tools that allow the system's front-end interface to communicate with the database or backend services.

### **Call to Action (CTA)**

A button, link, or prompt within the interface that encourages a user to perform an intended action, such as submitting a form or requesting more information.

### **Create, Read, Update, Delete (CRUD)**

The four basic operations of persistent data storage used in managing property records within the system.

### **Graphical User Interface (GUI)**

A type of user interface that enables users to interact with electronic devices through graphical icons, buttons, and menus rather than text-based commands.

### **Key Performance Indicator (KPI)**

A measurable value used to assess how effectively the interface or process achieves key usability or performance objectives.

### **UMGC Property Rentals (UMGCPR)**

The fictional company for which the user interface system is being designed.

### **User Experience (UX)**

The overall experience and satisfaction a user has when interacting with a product or system, including usability and design perception.



**User Interface (UI)**

The visual layout and interactive components of a software application that allow users to interact with system functions.

**Web Content Accessibility Guidelines (WCAG)**

A W3C standard that provides recommendations for making web content more accessible to people with disabilities, including visual, auditory, motor, and cognitive impairments.



## 2. Graphical Interface Design

This section presents the detailed graphical user interface (GUI) design for the *UMGC Property Rentals* system across desktop, web, and mobile platforms. It outlines the visual layout, navigation flow, and functional elements of each screen to demonstrate how users interact with the system. Each interface was designed to ensure consistency, usability, and accessibility while addressing the unique needs of both office staff and rental property seekers. Screens are organized by platform, with each subsection describing the purpose, internal functionality, and external functionality of the corresponding components.

### Aspect Ratios and Mockup Dimensions

To ensure consistency and proportional accuracy across devices, the following aspect ratios and mockup dimensions were used when designing the interface prototypes in *Pencil*. These ratios represent the most common screen proportions for each platform and help maintain uniform alignment, spacing, and readability throughout the layouts.

#### Desktop / Web: 16:9

- **Size of mockup:**  $1800 \times 1013$  px

This widescreen ratio reflects a standard HD desktop display and allows the design to scale effectively across large monitors and laptop screens. It ensures adequate horizontal space for data tables, navigation menus, and side panels.

#### Mobile: 1:2 (portrait orientation)

- **Size of mockup:**  $380 \times 743$  px

This tall ratio accommodates vertical scrolling and finger-friendly touch targets on smartphones. The layouts are optimized for readability and one-handed navigation.

#### Android Screen: 1.65

- **Size of mockup:**  $334 \times 551$  px

This dimension approximates common Android mid-range devices, providing realistic proportions for responsive scaling tests.



**iPhone Screen: 1.51**

- **Size of mockup:**  $380 \times 480$  px

This proportion represents an average iPhone viewport in portrait mode, ensuring the design adapts properly to iOS resolutions and safe-area margins.

Together, these aspect ratios guided the placement of navigation elements, content blocks, and interactive regions, guaranteeing that each mockup accurately reflects real-world screen behavior across desktop, web, and mobile environments.



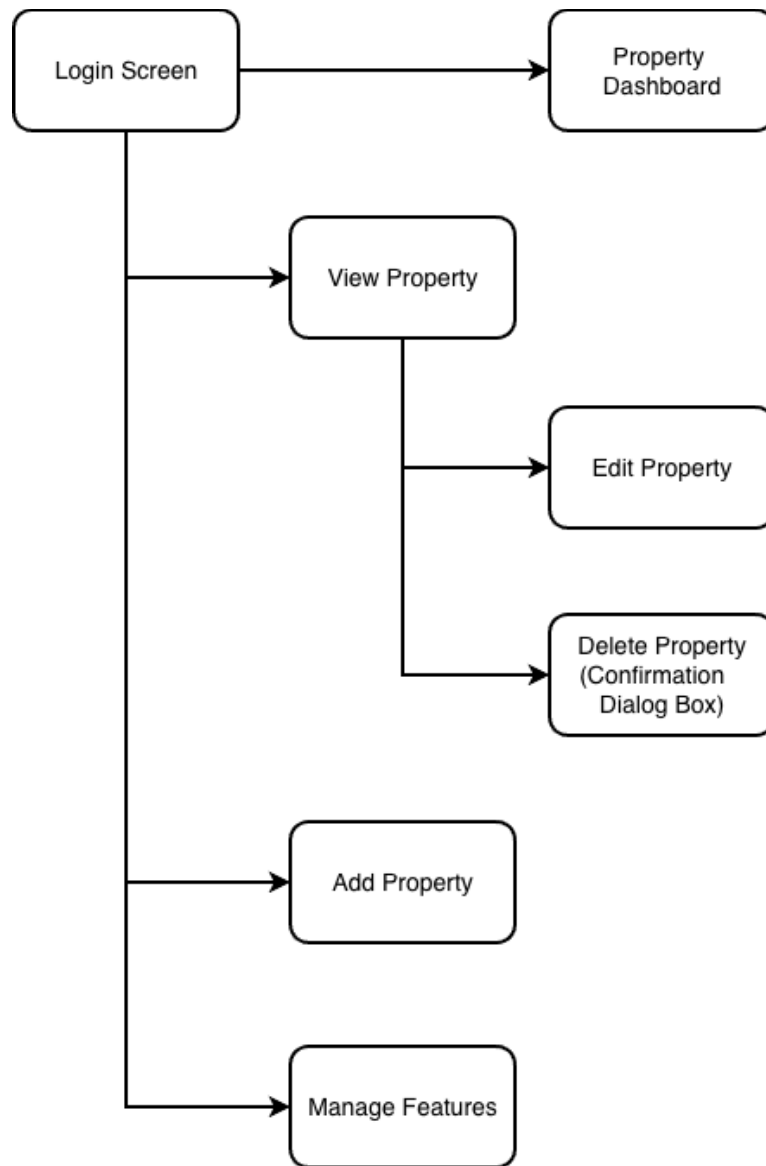
## 2.1 Desktop Application (Office Staff)

The desktop application is designed for *UMGC Property Rentals* office staff who manage property listings and their associated details. It provides a structured, data-focused interface that supports efficient entry, editing, and deletion of property information. The design emphasizes accuracy, clarity, and error prevention to ensure staff can maintain up-to-date property records with minimal effort. Features such as search and filtering functions enhance workflow efficiency, while consistent layouts and feedback messages improve usability and reduce training needs.

### Navigation Flow Overview – Desktop Application

The following diagram illustrates the navigation flow for the *UMGC Property Rentals* desktop application used by office staff. It provides a high-level view of how users move through the primary screens during property management activities.





*Figure 1 – Desktop User Flow*

This structure ensures that staff users can access all core functions efficiently while maintaining logical pathways between data entry, editing, and management operations.

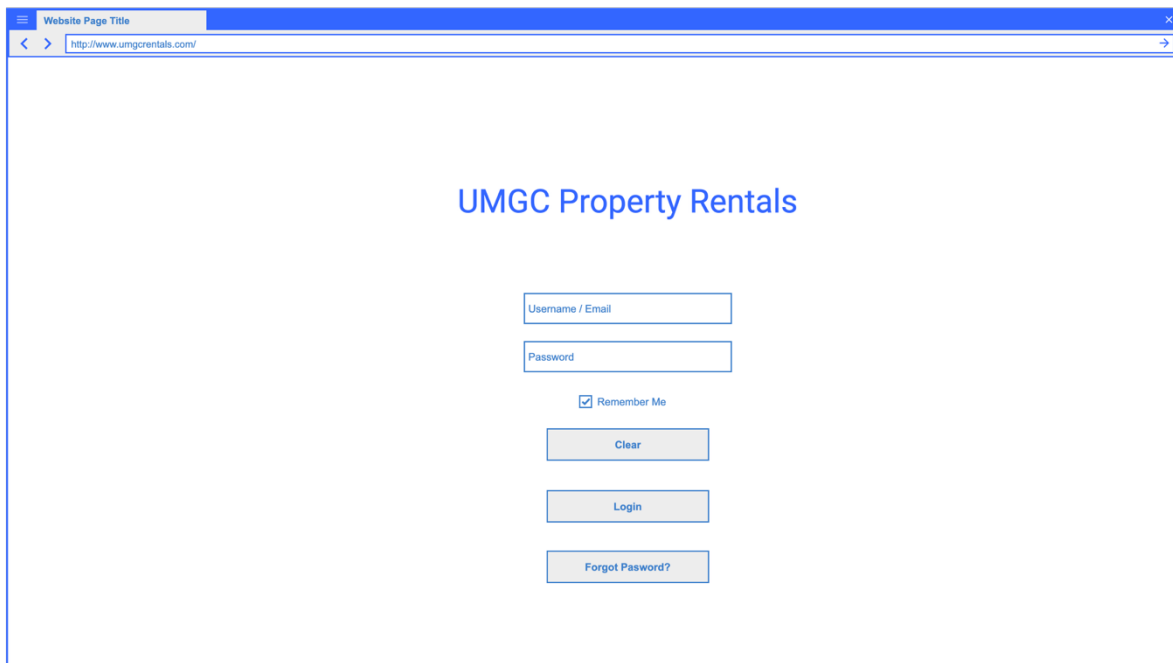


### 2.1.1 Login Screen

The Login Screen serves as the secure access point for *UMGC Property Rentals* office staff. It verifies user credentials before allowing entry into the system, protecting sensitive property and client data. The layout is intentionally simple, featuring input fields for username and password, along with clear buttons for logging in or resetting credentials. Immediate feedback is provided to ensure users are aware of authentication success or failure, reinforcing visibility of system status and supporting error prevention.

**Screen Name:** Desktop Login

**Image**

A screenshot of a web browser window displaying the login page for UMGc Property Rentals. The browser's address bar shows the URL "http://www.umgcrentals.com/". The page has a white background with a blue border. At the top center, the text "UMGC Property Rentals" is displayed in a blue, sans-serif font. Below this, there are two input fields: "Username / Email" and "Password", both with blue borders. Under the password field is a checkbox labeled "Remember Me" with a small blue checkmark. Below the checkbox are three buttons: "Clear", "Login", and "Forgot Password?", all with blue borders and light gray backgrounds. The buttons are arranged vertically and centered.

*Figure 2 – Login Page*



The screenshot shows a web browser window with the address bar displaying "http://www.umgcrentals.com/". The page title is "Website Page Title". The main heading is "UMGC Property Rentals". Below the heading, there is a login form with the following elements:

- Email input field: "stevens3452@anymail.com"
- Password input field: "\*\*\*\*\*"
- ☒ Remember Me
- Clear button
- Login button
- Forgot Password? button

Figure 3 - Login Page (Password Entry)

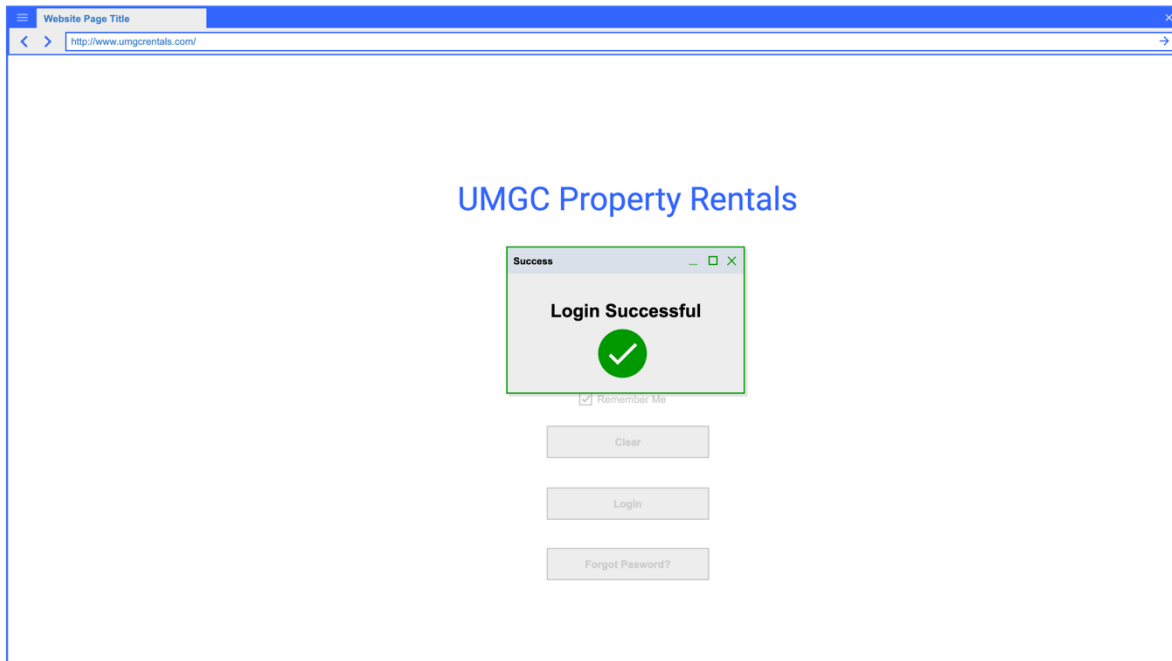
The screenshot shows the same login page as Figure 3, but with a validation error message displayed. The error message is a dialog box titled "Incorrect Credentials" with the following text:

**Login Failed**  
Your email or password is incorrect.  
Please try again.

Below the error message, the "Remember Me" checkbox is checked, and the "Clear", "Login", and "Forgot Password?" buttons are visible.

Figure 4 - Login Page (Validation)





*Figure 5 - Login Page (Success)*

### Internal UI Functionality

- Input fields for username and password.
- “Clear” button deletes the username and password fields.
- “Login” button enables after both fields are filled.
- Error message displayed if login fails.

### External UI Functionality

- Successful login transitions to the Property Dashboard module.
- Authentication verified via staff credentials database.



**Error and Confirmation States**

- Validation Popup: Appears when incorrect credentials are entered.
  - Message: *“Login Failed – Your email or password is incorrect. Please try again.”*
  - Popup border highlighted in red to indicate error.
  - User can dismiss with “OK” and re-enter credentials.
- Confirmation Popup: Appears upon successful authentication.
  - Message: *“Login Successful.”*
  - Green border and check-mark icon provide clear visual feedback.
  - Automatically transitions to the Property Dashboard after confirmation.

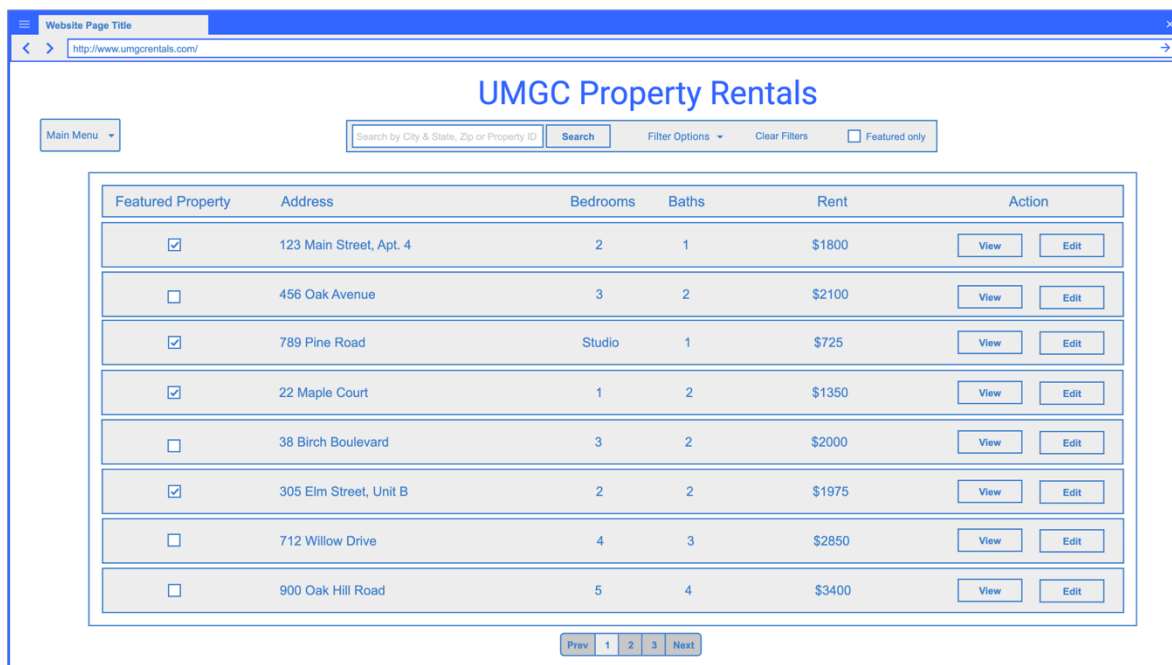


### 2.1.2 Property Dashboard

The *Property Dashboard* serves as the main workspace of the desktop application, allowing office staff to view, filter, and manage all registered property listings. The interface uses a clear tabular layout that lists key property information, including address, number of bedrooms and bathrooms, and monthly rent. Users can easily identify featured listings by the checkbox and corresponding yellow star indicator. The dashboard supports efficient navigation and property management through consistent action buttons and menu options.

**Screen Name:** Property Management Dashboard

#### Images



The screenshot displays the 'UMGC Property Rentals' web application. At the top, there is a navigation bar with a 'Main Menu' dropdown, a search bar with the placeholder 'Search by City & State, Zip or Property ID', and buttons for 'Search', 'Filter Options', 'Clear Filters', and a checkbox for 'Featured only'. Below the navigation bar is a table listing property details. Each row includes a checkbox for 'Featured Property', the 'Address', 'Bedrooms', 'Baths', 'Rent', and 'Action' buttons ('View' and 'Edit'). The table contains eight rows of data. At the bottom of the table, there is a pagination control with 'Prev', '1', '2', '3', and 'Next' buttons.

| Featured Property                   | Address                 | Bedrooms | Baths | Rent   | Action                                    |
|-------------------------------------|-------------------------|----------|-------|--------|---|
| <input checked="" type="checkbox"/> | 123 Main Street, Apt. 4 | 2        | 1     | \$1800 | <a href="#">View</a> <a href="#">Edit</a> |
| <input type="checkbox"/>            | 456 Oak Avenue          | 3        | 2     | \$2100 | <a href="#">View</a> <a href="#">Edit</a> |
| <input checked="" type="checkbox"/> | 789 Pine Road           | Studio   | 1     | \$725  | <a href="#">View</a> <a href="#">Edit</a> |
| <input checked="" type="checkbox"/> | 22 Maple Court          | 1        | 2     | \$1350 | <a href="#">View</a> <a href="#">Edit</a> |
| <input type="checkbox"/>            | 38 Birch Boulevard      | 3        | 2     | \$2000 | <a href="#">View</a> <a href="#">Edit</a> |
| <input checked="" type="checkbox"/> | 305 Elm Street, Unit B  | 2        | 2     | \$1975 | <a href="#">View</a> <a href="#">Edit</a> |
| <input type="checkbox"/>            | 712 Willow Drive        | 4        | 3     | \$2850 | <a href="#">View</a> <a href="#">Edit</a> |
| <input type="checkbox"/>            | 900 Oak Hill Road       | 5        | 4     | \$3400 | <a href="#">View</a> <a href="#">Edit</a> |

*Figure 6 – Desktop Property List Page*





Figure 7 – Desktop Property List Page (Menu)



Figure 8 – Desktop Property List Page (Filters)



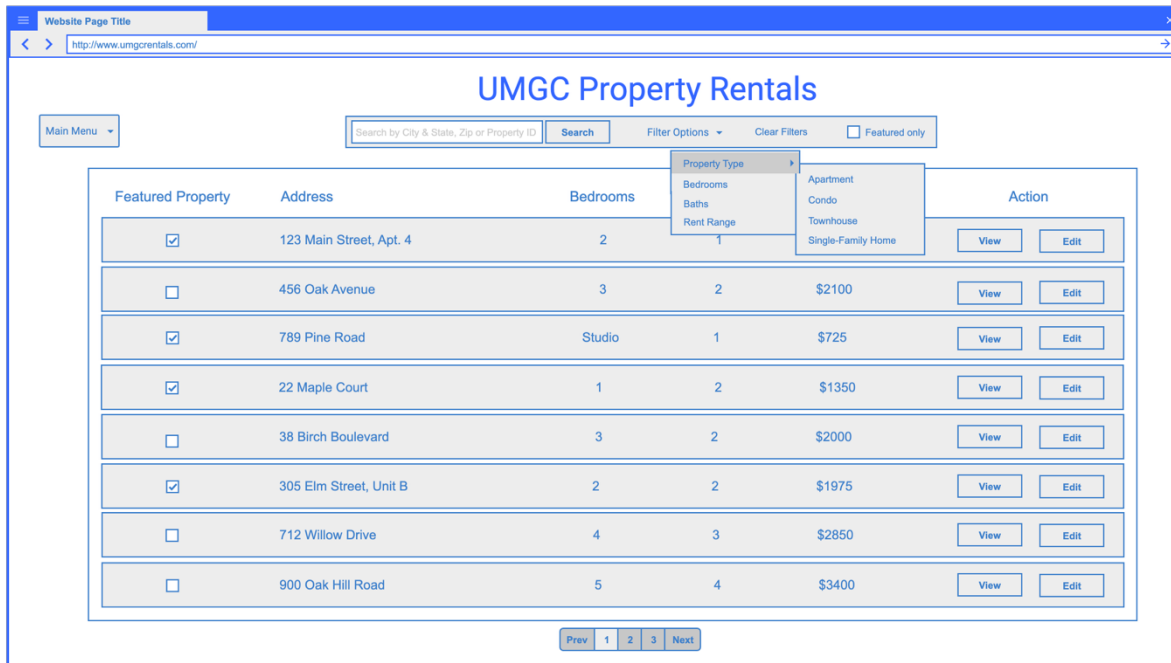


Figure 9 – Desktop Property List Page (Property Type Filter)

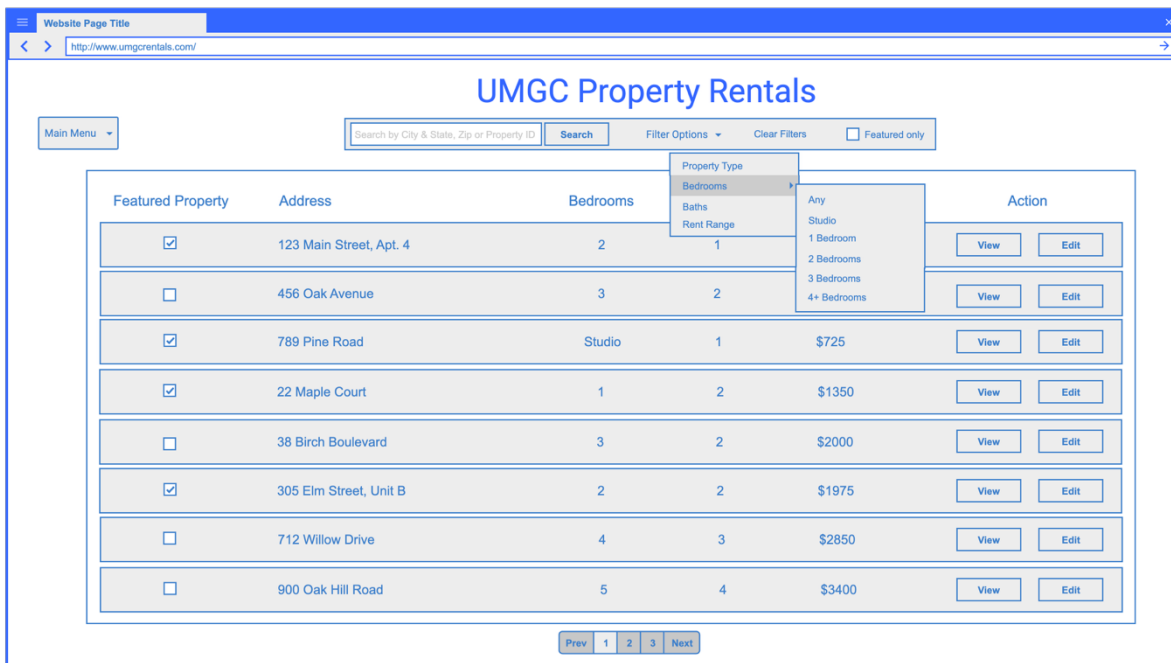


Figure 10 – Desktop Property List Page (Bedrooms Filter)



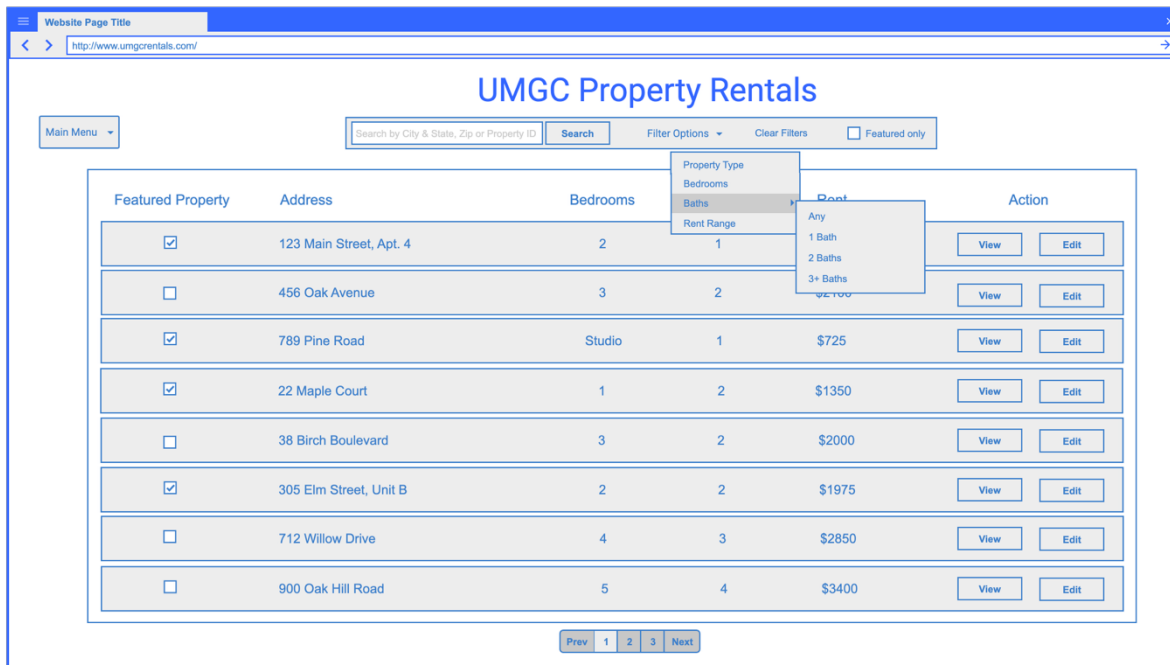


Figure 11 – Desktop Property List Page (Baths Filter)

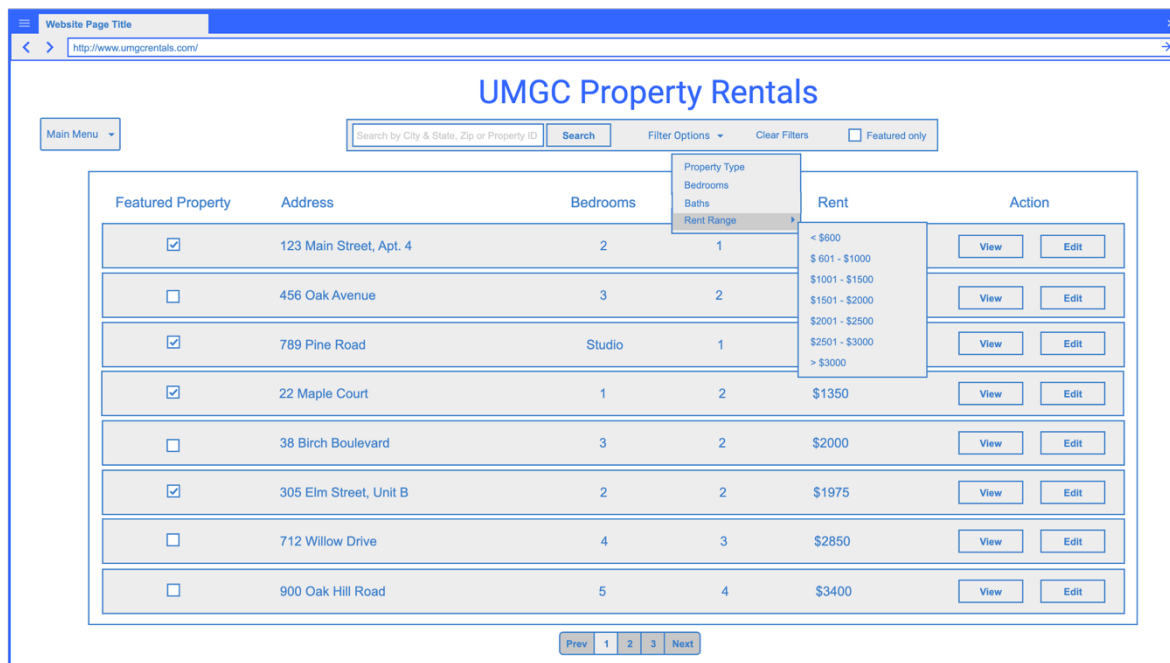


Figure 12 – Desktop Property List Page (Rent Range Filter)



**Internal UI Functionality**

- The Main Menu dropdown provides quick access to Dashboard, Add Property, Feature Management, and Logout options.
- The search bar allows users to search listings by City & State or ZIP Code.
- The filter options dropdown enables filtering by Property Type, Bedrooms, Baths, or Rent Range.
- The Featured Only checkbox displays only listings marked as featured.
- Each row displays a property's details and includes View and Edit buttons for record management.
- Pagination controls (Prev / 1 / 2 / 3 / Next) navigate between pages of results.

**External UI Functionality**

- The Dashboard retrieves all property listings from the main database upon loading.
- Search and filter actions refresh the property list dynamically without requiring a page reload.
- Changes made in Add Property or Edit Property screens are reflected instantly on return to the dashboard.
- The Featured Property checkbox state syncs with the database to determine which listings appear as featured in the public web and mobile apps.

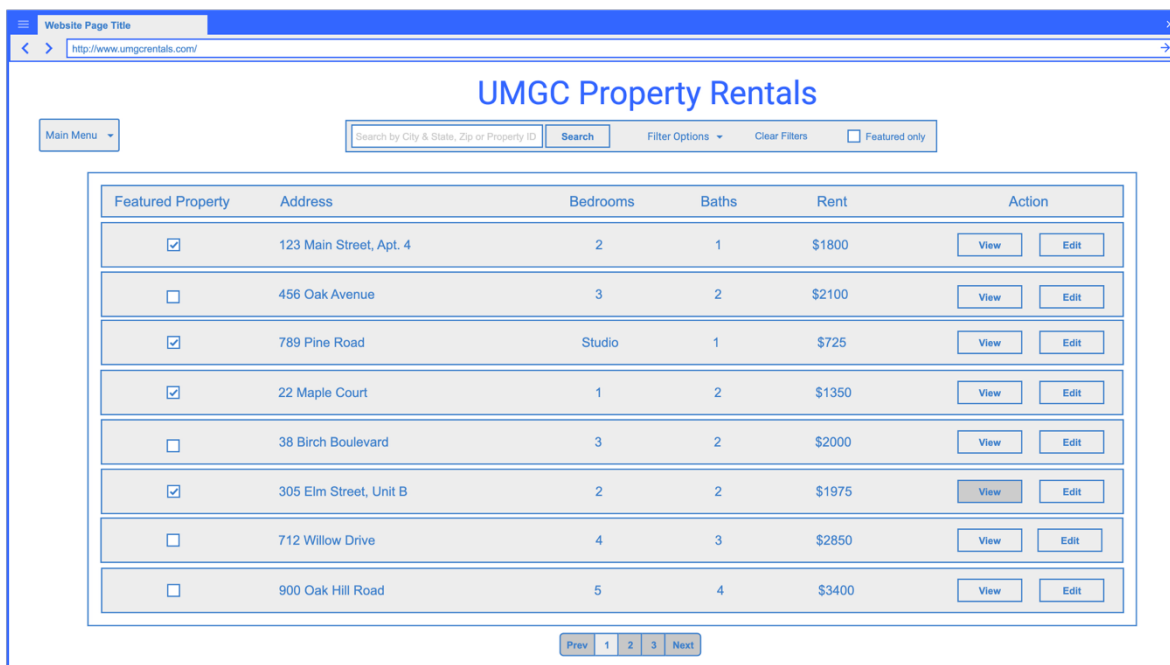


### 2.1.3 View Property Dashboard

The *View Property* Page provides a detailed overview of an existing property, allowing staff to review complete information, confirm listing data, and perform maintenance actions. The layout is divided into three main sections: property details, amenities, and gallery. Prominent action buttons — *Edit Property*, *Delete*, and *Back to List* — appear at the top for direct control and navigation. A featured listing checkbox visually indicates whether the property is highlighted in public listings.

**Screen Name:** View Property

#### Images



*Figure 13 – Desktop View Property Screen*



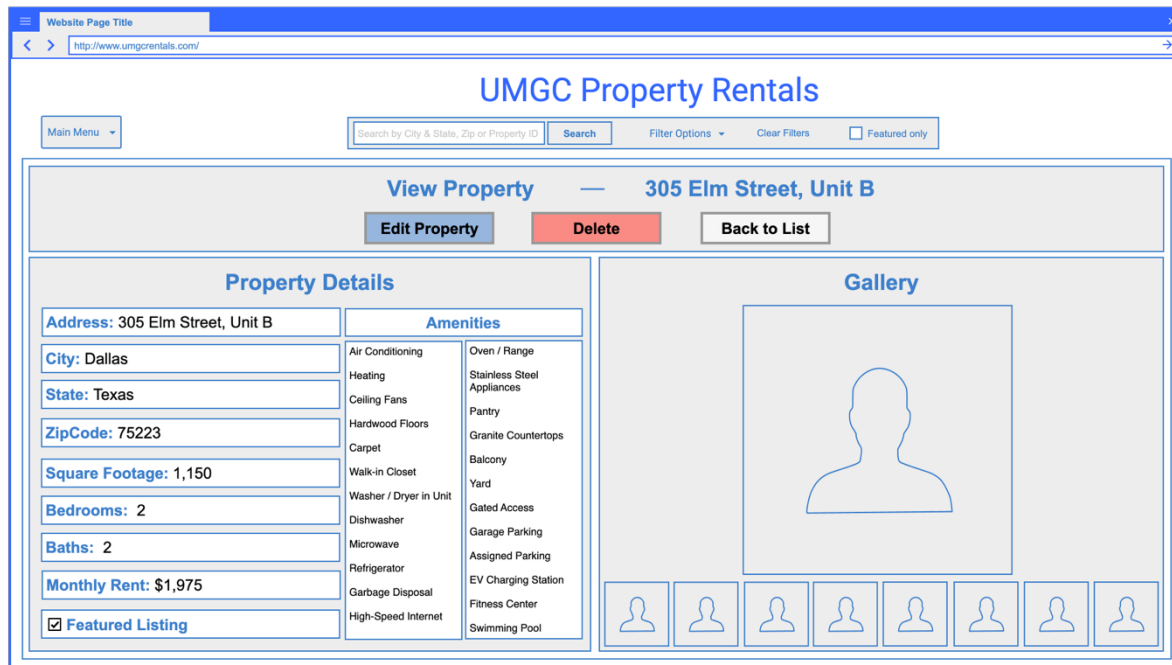


Figure 14 – Desktop View Property (Details Expanded)

### Internal UI Functionality

- Displays property metadata such as Address, City & State, ZIP Code, Square Footage, Bedrooms, Baths, and Monthly Rent in labeled read-only fields.
- Shows Amenities as a two-column list of checkable features managed through the Feature Management page.
- A Featured Listing checkbox indicates if the property is marked as featured; it is non-editable on this screen.
- The Gallery section previews uploaded property images in a grid with a main image placeholder.
- Action Buttons
  - Edit Property: opens the Edit Property Page for updating listing data.
  - Delete: triggers a confirmation popup before removing the property from the system.
  - Back to List: returns to the Property Dashboard.
- The Main Menu dropdown remains available for direct navigation to Dashboard, Add Property, Feature Management, or Logout.



**External UI Functionality**

- Fetches property details dynamically from the database based on the selected property ID.
- The Delete function connects to the property database and permanently removes the record upon confirmation.
- Edits made through the Edit Property Page automatically refresh and repopulate the View Property display.
- Featured listing status synchronizes with both the desktop and public-facing (web and mobile) versions to ensure consistent display across all platforms.



### 2.1.4 Add Property Screen

The *Add Property Screen* allows office staff to create new property listings by entering all relevant details, including address, rent, size, and amenities. The layout uses clear, labeled input fields arranged in a logical sequence to minimize data-entry errors. Dropdown menus and checkboxes simplify selection tasks, while a photo upload area allows users to attach multiple property images. The screen ensures that each listing is complete, accurate, and ready to appear on the public-facing web and mobile applications once saved.

**Screen Name:** Add New Property

#### Images

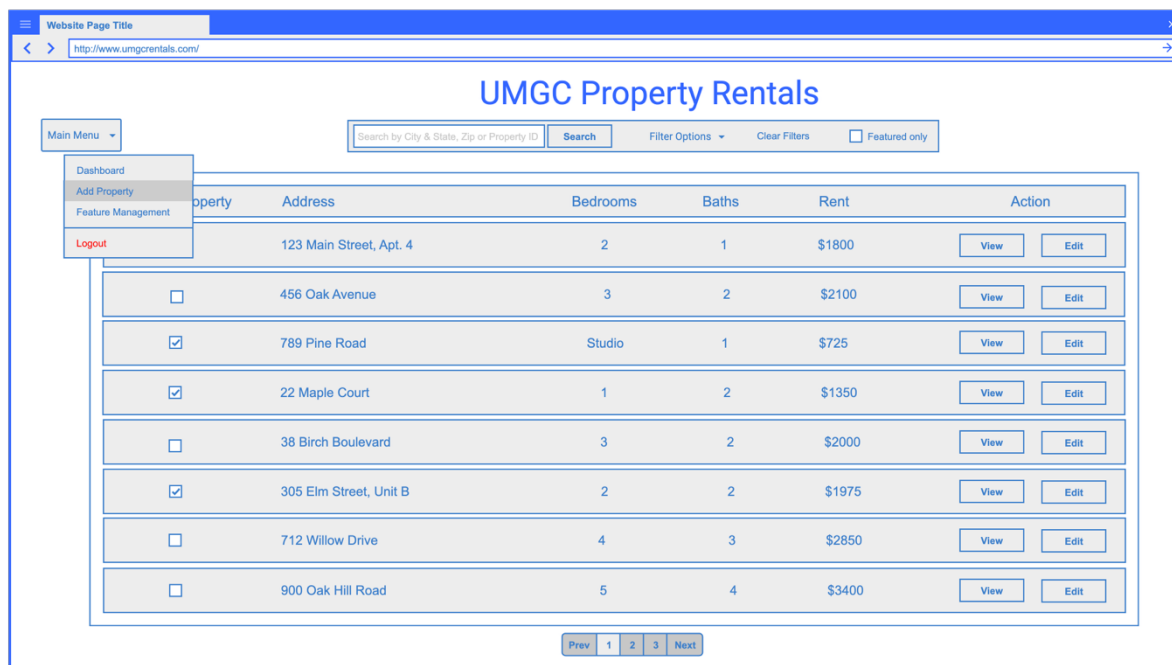


Figure 15 – Desktop Property List Page (Main Menu – Add Property Selected)



Website Page Title

http://www.umgcrentals.com/

## UMGC Property Rentals

Main Menu ▾

Search by City & State, Zip or Property ID  Filter Options ▾ Clear Filters ☐ Featured only

### Add A New Listing

**Address**

**City**  **State**  **ZipCode**

**Square Footage**  **Bedrooms**  **Baths**  **Monthly Rent**  ☐ **Featured Listing**

**Property Features**

**Property Photos**

Figure 16 – Desktop Add Property (Main Form Layout)

Website Page Title

http://www.umgcrentals.com/

## UMGC Property Rentals

Main Menu ▾

Search by City & State, Zip or Property ID  Filter Options ▾ Clear Filters ☐ Featured only

### Add A New Listing

**Address**

**City**  **State**  **ZipCode**

**Square Footage**  **Bedrooms**  **Baths**  **Monthly Rent**  ☐ **Featured Listing**

**Property Features**

**Property Photos**

Figure 17 – Desktop Add Property (Bedrooms/Baths Dropdown Selections)



Website Page Title

http://www.umgcrentals.com/

## UMGC Property Rentals

Main Menu

Search by City & State, Zip or Property ID Search Filter Options Clear Filters ☐ Featured only

### Add A New Listing

Address 123 Mockingbird Lane

City Dallas State TX ZipCode 75223

Square Footage Square Footage Bedrooms 2 Baths 2 Monthly Rent 1750 ☐ Featured Listing

Property Features

- ☒ Air Conditioning
- ☒ Balcony
- ☐ Deck
- ☐ Patio
- ☒ Cable
- ☒ Dishwasher
- ☐ EV Charging
- ☐ Fiber
- ☒ Fitness Center
- ☐ Garage
- ☒ High Speed Internet
- ☐ Laundry Facility

Upload image (drop files here)

Save

Figure 18 – Desktop Add Property (Property Features Selection Menu)

Website Page Title

http://www.umgcrentals.com/

## UMGC Property Rentals

Main Menu

Search by City & State, Zip or Property ID Search Filter Options Clear Filters ☐ Featured only

### Add A New Listing

Address 123 Mockingbird Lane

City Dallas State TX ZipCode 75223

Square Footage Square Footage Bedrooms 2 Baths 2 Monthly Rent 1750 ☐ Featured Listing

Property Features ☒ Air Conditioning

Preview

Upload image (drop files here)

Save Cancel

Figure 19 – Desktop Add Property - Feature Selected (Preview State)



Website Page Title

http://www.umgcrentals.com/

## UMGC Property Rentals

Main Menu

Search by City & State, Zip or Property ID Search Filter Options Clear Filters ☐ Featured only

Address

City  Dallas

ZipCode  75223

Square Footage  1250 Bedrooms  2 Baths  2 Monthly Rent  1750 ☐ Featured Listing

Property Features ☒ Air Conditioning

Upload image (drop files here)

Preview

Save Cancel

Information Error

**Missing or Invalid Information**

Please complete all required fields before saving.  
Highlighted fields must be corrected to continue.

OK

Figure 20 – Desktop Add Property – Validation Error (Missing Required Field Highlighted)

Website Page Title

http://www.umgcrentals.com/

## UMGC Property Rentals

Main Menu

Search by City & State, Zip or Property ID Search Filter Options Clear Filters ☐ Featured only

**Add A New Listing**

Address  123 Mockingbird Lane

City  Dallas State  TX ZipCode  75223

Square Footage  1250 Bedrooms  2 Baths  2 Monthly Rent  1750 ☐ Featured Listing

Property Features ☒ Air Conditioning

Upload image (drop files here)

Preview

Save Cancel

Figure 21 – Desktop Add Property – Validation Resolved (All Fields Completed)



The screenshot displays the UMGC Property Rentals website interface. At the top, there is a navigation bar with a "Main Menu" dropdown, a search bar labeled "Search by City & State, Zip or Property ID", and buttons for "Search", "Filter Options", "Clear Filters", and a "Featured only" checkbox. The main content area is titled "UMGC Property Rentals" and contains a form for adding a new property listing. The form includes fields for "Address", "City" (pre-filled with "Dallas"), "ZipCode" (pre-filled with "75223"), "Square Footage" (pre-filled with "1250"), "Bedrooms" (pre-filled with "2"), and "Rent" (pre-filled with "1750"). There is also a "Featured Listing" checkbox. Below the form, there is a "Property Features" section with a checkbox for "Air Conditioning" and a "Preview" section showing a row of seven placeholder images. At the bottom of the form, there are "Save" and "Cancel" buttons. A modal dialog box is overlaid on the form, titled "Success", with a green checkmark icon and the text "Property Added Successfully. The new listing has been added to the database." and an "OK" button.

Figure 22 – Desktop Add Property (Confirmation Message)



### Internal UI Functionality

- The Main Menu dropdown provides access to Dashboard, Add Property, Feature Management, and Logout options.
- The Add a New Listing header identifies the purpose of the screen.
- Text input fields are provided for:
  - Address, City, State, ZIP Code, Square Footage, Bedrooms, Baths, and Monthly Rent.
- Dropdown menus support structured data entry for:
  - Bedrooms (Studio – 4+ options) and Baths (1 – 3+ options).
- A Property Features dropdown lists all predefined amenities (e.g., Air Conditioning, Garage, Fitness Center, Swimming Pool).
- The Featured Listing checkbox allows the user to mark a property for public display.
- A Property Photos upload section includes:
  - Drag-and-drop upload area.
  - Thumbnail previews for up to five images.
- Buttons
  - Save (green): validates input and saves the new record.
  - Cancel (red): returns to the Property Dashboard without saving.

### External UI Functionality

- The system connects to the property database to create a new record when Save is clicked.
- Input validation ensures all mandatory fields (Address, City, State, Rent, Square Footage) are populated before submission.
- Uploaded photos are stored and associated with the new property ID.
- Upon successful creation, the user is redirected to the Property Dashboard, where the new property appears in the list.
- If Featured Listing is selected, the record is also marked for display on the Web and Mobile home pages as a featured property.



## Error and Confirmation States

- Validation Error Popup

Displays when required fields are incomplete.

- Title: *“Information Error”*

- Message

*“Missing or Invalid Information.*

*Please complete all required fields before saving.*

*Highlighted fields must be corrected to continue.”*

- Incomplete fields are outlined in red to draw attention.

- Confirmation Popup

Appears after a successful property submission.

- Title: *“Success”*

- Message

*“Property Added Successfully.*

*The new listing has been added to the database.”*

- Includes a green checkmark icon and an OK button to close.

- The system then returns the user to the Property Dashboard.



### 2.1.5 Edit Property Screen

The *Edit Property Screen* allows office staff to modify details of an existing property listing. The layout mirrors the Add Property Screen for visual consistency, but all relevant fields are pre-filled with existing data to support quick and accurate edits. Users can adjust property information such as address, square footage, rent, amenities, and featured status. The interface reinforces data integrity through clear labeling, dropdown selections, and visual confirmation before saving updates.

**Screen Name:** Edit Existing Property

#### Images



*Figure 23 – Desktop Edit Property Page (Main Menu – Edit Existing Listing Selected)*



The screenshot shows a web browser window with the URL <http://www.umgcrentals.com/>. The page title is "UMGC Property Rentals". Below the header, there is a "Main Menu" dropdown and a search bar with the placeholder "Search by City & State, Zip or Property ID". To the right of the search bar are "Filter Options", "Clear Filters", and a "Featured only" checkbox.

The main form is titled "Edit An Existing Listing". It contains the following fields:

- Address:** 305 Elm Street, Unit B
- City:** Dallas
- State:** TX
- ZipCode:** 75223
- Square Footage:** sixteen
- Bedrooms:** 3
- Baths:** 2
- Monthly Rent:** \$2,755
- Featured Listing:** ☒

Below these fields is a "Property Features" section with a dropdown menu that is expanded, showing the following options:

- ☒ Air Conditioning
- ☒ Balcony
- ☐ Deck
- ☐ Patio
- ☐ Cable
- ☒ Dishwasher
- ☒ EV Charging
- ☐ Fiber
- ☒ Fitness Center
- ☒ Garage
- ☒ High Speed Internet
- ☐ Laundry Facility

At the bottom of the form, there is a "Save" button. To the left of the "Property Features" section, there is an "Upload image (drop files here)" button. To the right, there are three placeholder icons for property photos.

Figure 24 – Desktop Edit Property (Features Expanded)

The screenshot shows the same web browser window as Figure 24, but with the "Property Features" dropdown menu collapsed. The "Property Features" section now shows a single checked option: ☒ Air Conditioning.

Below the "Property Features" section is a "Property Photos" section with a row of seven placeholder icons for property photos. To the left of this row is an "Upload image (drop files here)" button.

At the bottom of the form, there are two buttons: "Save" and "Cancel".

Figure 25 – Desktop Edit Property (Fields Updated – Pre-Validation State)



The screenshot shows the 'Edit An Existing Listing' form in a web browser. The form fields include Address (305 Elm Street), City (Dallas), ZipCode (75223), Square Footage (sixteen), Bedrooms (3), and Monthly Rent (\$2,755). The 'Featured Listing' checkbox is checked. A modal dialog titled 'Information Error' is displayed in the center, with the text: 'Missing or Invalid Information. Please complete all required fields before saving. Highlighted fields must be corrected to continue.' and an 'OK' button. The 'Square Footage' field is highlighted with a red border. Below the form is a 'Property Photos' section with an 'Upload image' button and seven placeholder icons. At the bottom are 'Save' and 'Cancel' buttons.

Figure 26 – Desktop Edit Property (Validation Error – Missing or Invalid Field Highlighted)

The screenshot shows the 'Edit An Existing Listing' form with the corrected entry. The form fields are: Address (305 Elm Street, Unit B), City (Dallas), State (TX), ZipCode (75223), Square Footage (1,650), Bedrooms (3), Baths (2), and Monthly Rent (\$2,755). The 'Featured Listing' checkbox is checked. The 'Property Features' dropdown is set to 'Air Conditioning'. The 'Square Footage' field is no longer highlighted. The 'Property Photos' section and 'Save'/'Cancel' buttons remain at the bottom.

Figure 27 – Desktop Edit Property (Validation Resolved – Corrected Entry)



The screenshot displays the 'Edit An Existing Listing' form on the UMGC Property Rentals website. A modal window titled 'Success' is centered on the screen, indicating that the property has been updated successfully. The background form contains the following fields and options:

- Search Bar:** Search by City & State, Zip or Property ID. Includes a 'Search' button, 'Filter Options' dropdown, 'Clear Filters' button, and a 'Featured only' checkbox.
- Form Fields:**
  - Address:** 305 Elm Street, U
  - City:** Dallas
  - ZipCode:** 75223
  - Square Footage:** 1,650
  - Bedrooms:** 3
  - Rent:** \$2,755
  - Featured Listing:** ☒
  - Property Features:** ☒ Air Conditioning
- Property Photos:** A section with an 'Upload image (drop files here)' button and seven placeholder icons for photos.
- Buttons:** 'Save' (green) and 'Cancel' (red) buttons at the bottom.

**Success Message:**

**Property Updated Successfully**  
The updated listing has been added to the database.  
OK

Figure 28 – Desktop Edit Property (Confirmation Message – Property Updated Successfully)



**Internal UI Functionality**

- Displays existing property information in editable text fields for:
  - Address, City, State, ZIP Code, Square Footage, Bedrooms, Baths, and Monthly Rent.
- Dropdown menus for Bedrooms and Baths allow users to adjust values using standard options
  - (e.g., Studio – 4+ Bedrooms, 1 – 3+ Baths).
- Property Features dropdown displays all available amenities with checkboxes to indicate currently selected features.
- Featured Listing checkbox allows toggling whether the property appears as a featured listing on web and mobile interfaces.
- Photo Upload Section
  - Allows new photos to be uploaded or existing ones replaced.
  - Displays thumbnails of current property images for preview.
- Action Buttons
  - Save (green): Validates edits and commits updates to the database.
  - Cancel (red): Discards all unsaved changes and returns to the Property Dashboard.
- Main Menu Dropdown: Provides navigation to Dashboard, Add Property, Feature Management, or Logout.



**External UI Functionality**

- Upon opening, the screen retrieves existing property data from the database using the selected Property ID.
- Input fields are validated for format and completeness (e.g., numeric rent, five-digit ZIP Code).
- When Save is clicked, the system updates the corresponding record in the property database.
- Updated information syncs immediately with the Property Dashboard and public-facing Web and Mobile platforms.
- Properties flagged as Featured are automatically reflected under the Featured Only filters across all views.



## Error and Confirmation States

- Validation Error Popup

Appears when one or more required fields contain missing or invalid information.

- Message

*“Missing or Invalid Information*

*Please complete all required fields before saving.*

*Highlighted fields must be corrected to continue.”*

- Example: Non-numeric or incomplete square footage is outlined in red to prompt correction.

- Validation Resolved

Displays corrected input (e.g., numeric “1,650” replacing invalid “sixteen”) before allowing submission.

- Confirmation Popup

Appears upon successful update of property data.

- Message

*“Property Updated Successfully — The updated listing has been added to the database.”*

- Includes a green checkmark icon and “OK” button to confirm and close.
  - The user is returned to the Property Dashboard.



### 2.1.6 Manage Features Screen

The *Manage Features Screen* allows administrative staff to maintain and standardize the set of available property features used throughout the system. This ensures that every property listing draws from the same controlled vocabulary—supporting data consistency and reducing redundancy. Staff can add, edit, or remove features such as Balcony, EV Charging, or Fitness Center, each categorized by type (e.g., Interior, Community, Parking). The layout prioritizes clarity, with a sortable table and color-coded action buttons providing immediate visual feedback for system interactions.

**Screen Name:** Feature Management

#### Images



Figure 29 – Desktop Feature Management (Main Menu – Feature Management Selected)



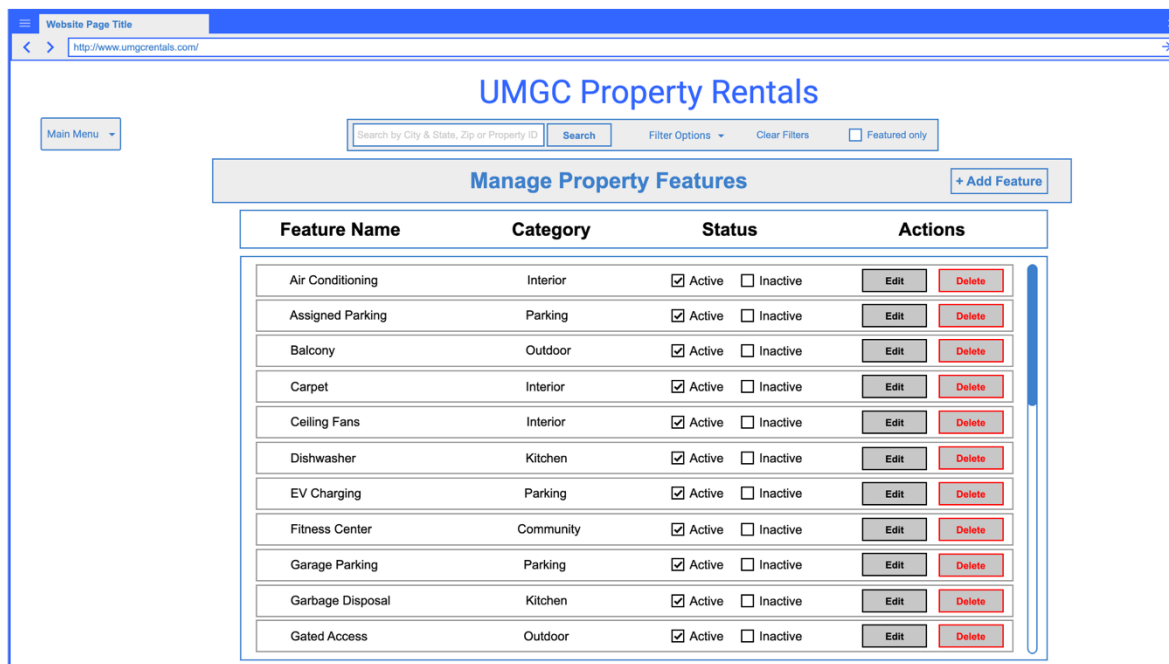


Figure 30 – Desktop Feature Management (Full Table Display)

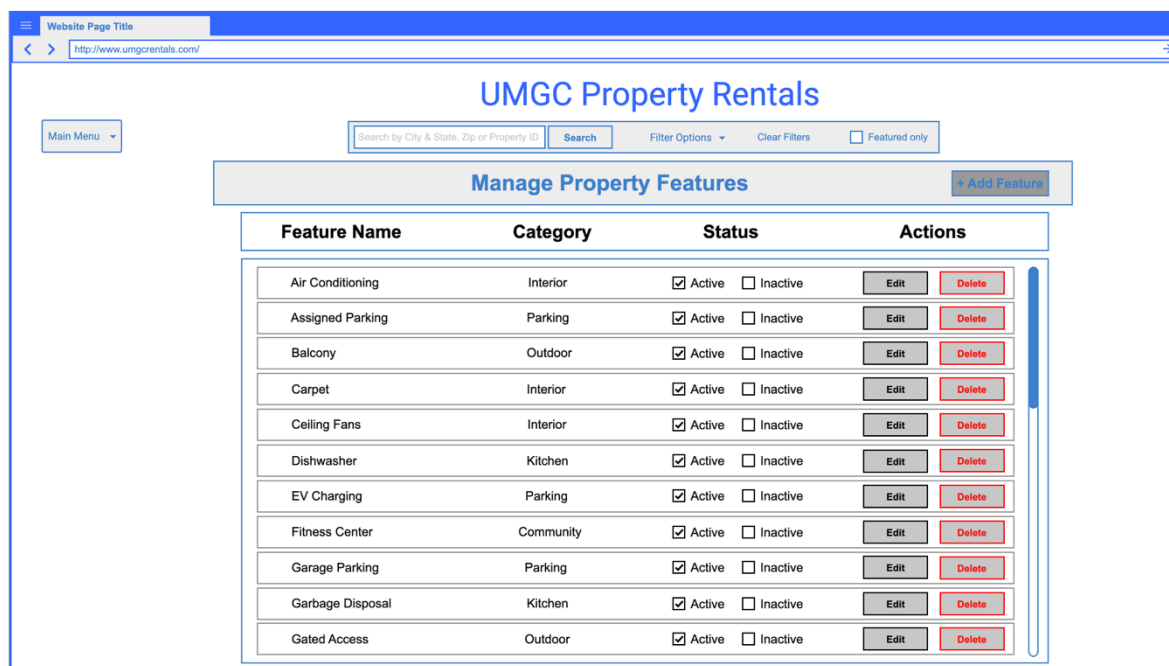


Figure 31 – Desktop Feature Management (Add Feature Button Selected)



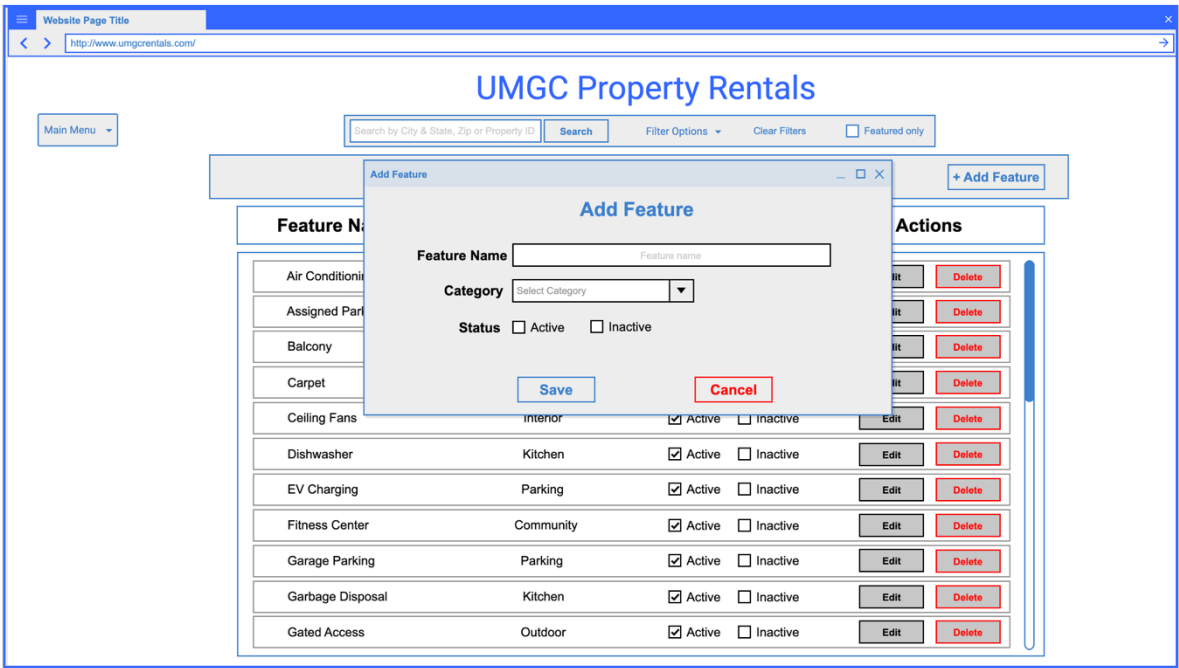


Figure 32 – Desktop Feature Management (Add Feature Dialog – Empty Fields)

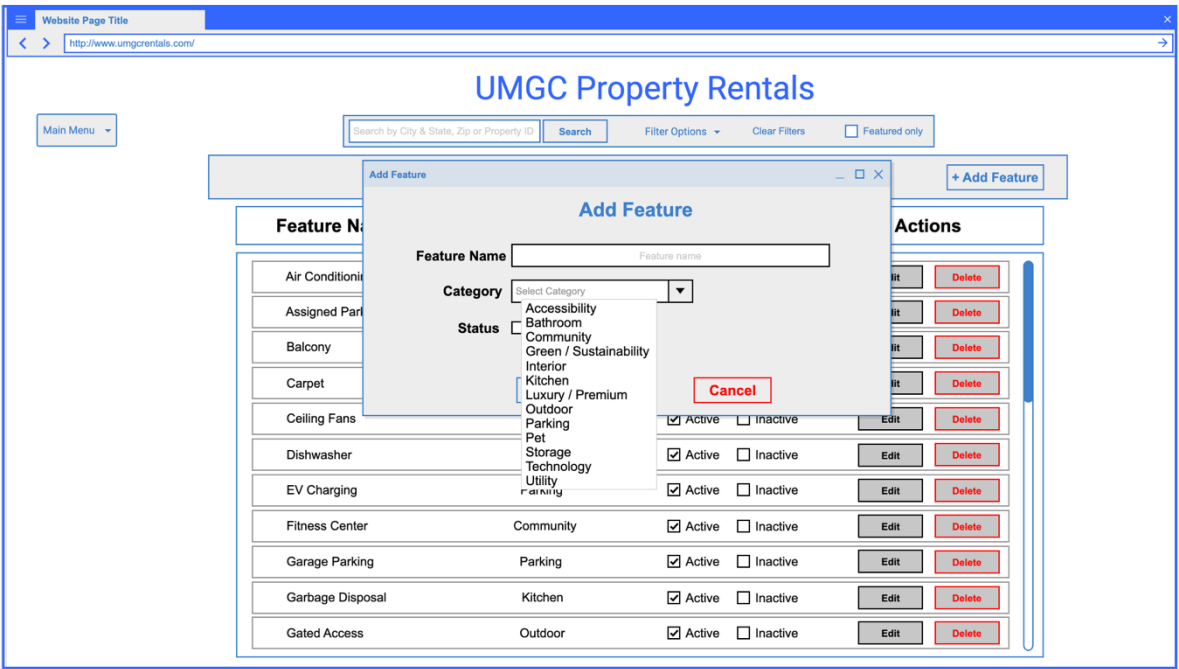


Figure 33 – Desktop Feature Management (Add Feature Category Dropdown Expanded)



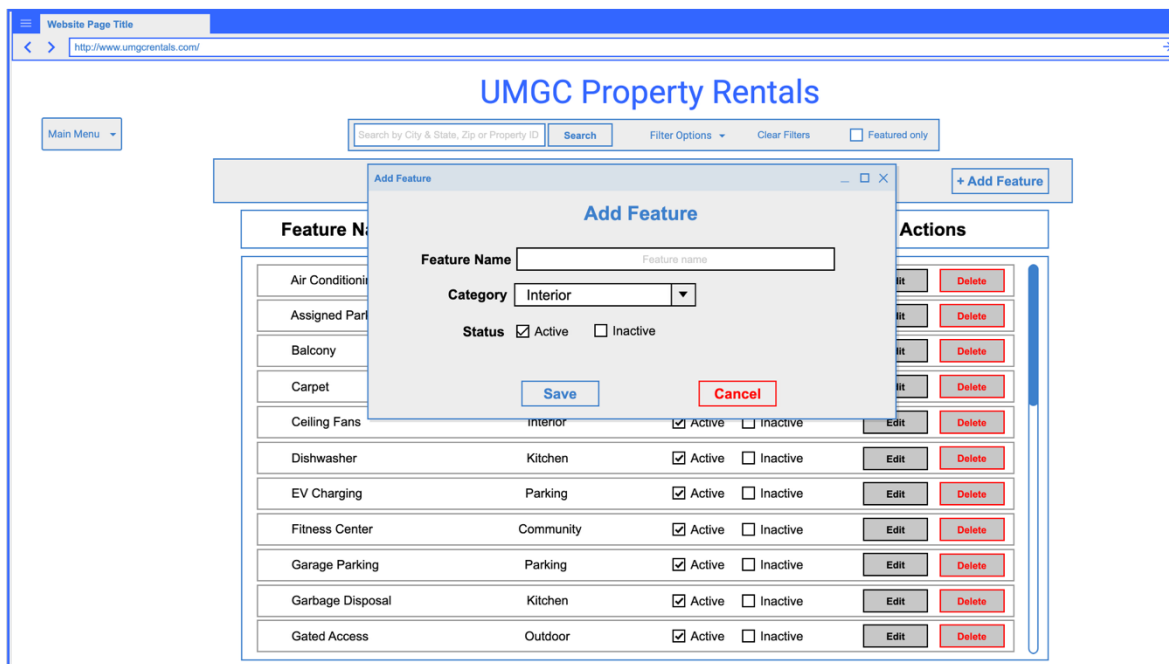


Figure 34 – Desktop Feature Management (Add Feature – Field Entry in Progress)

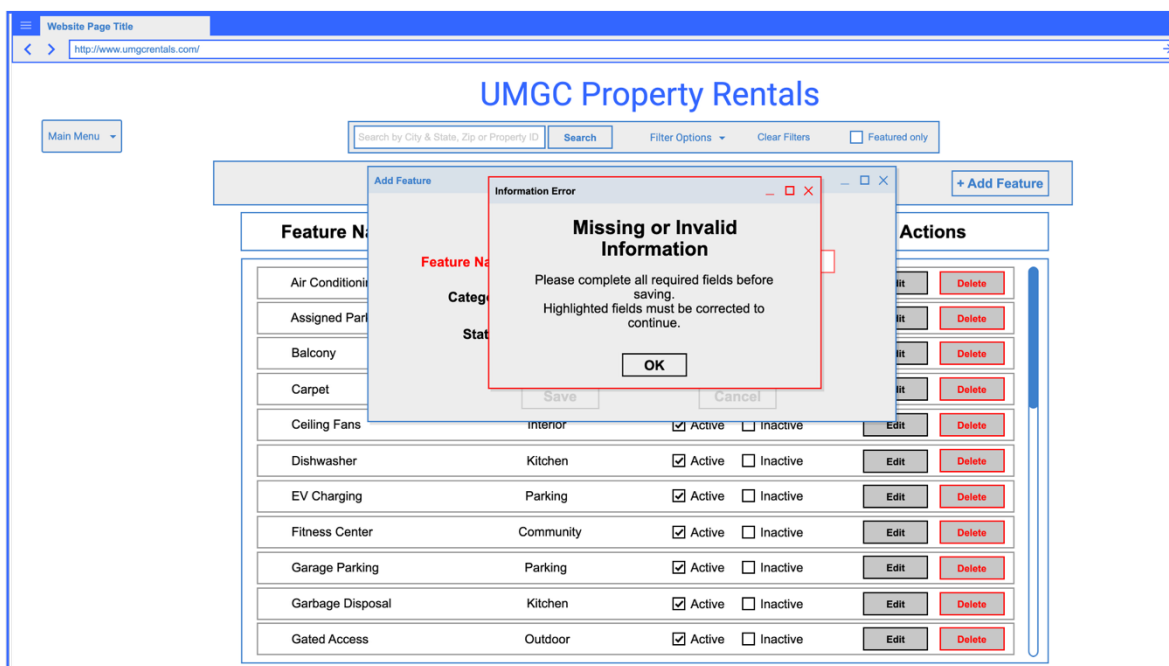


Figure 35 – Desktop Feature Management (Validation Error – Missing Required Field Highlighted)



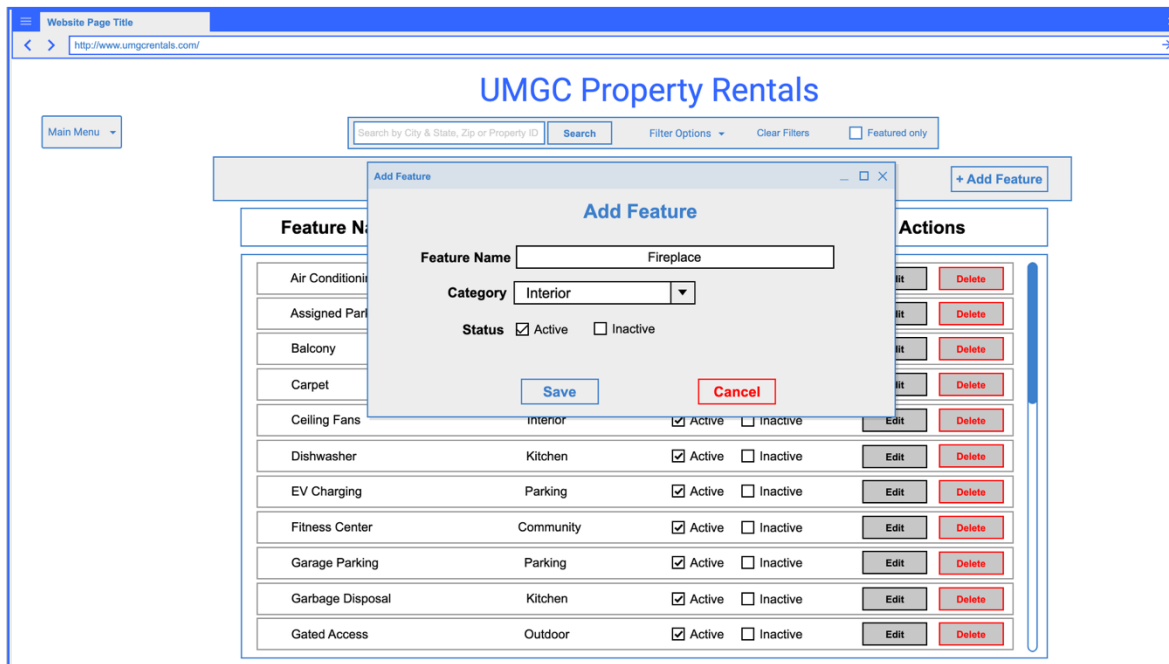


Figure 36 – Desktop Feature Management (Validation Resolved – All Fields Completed)

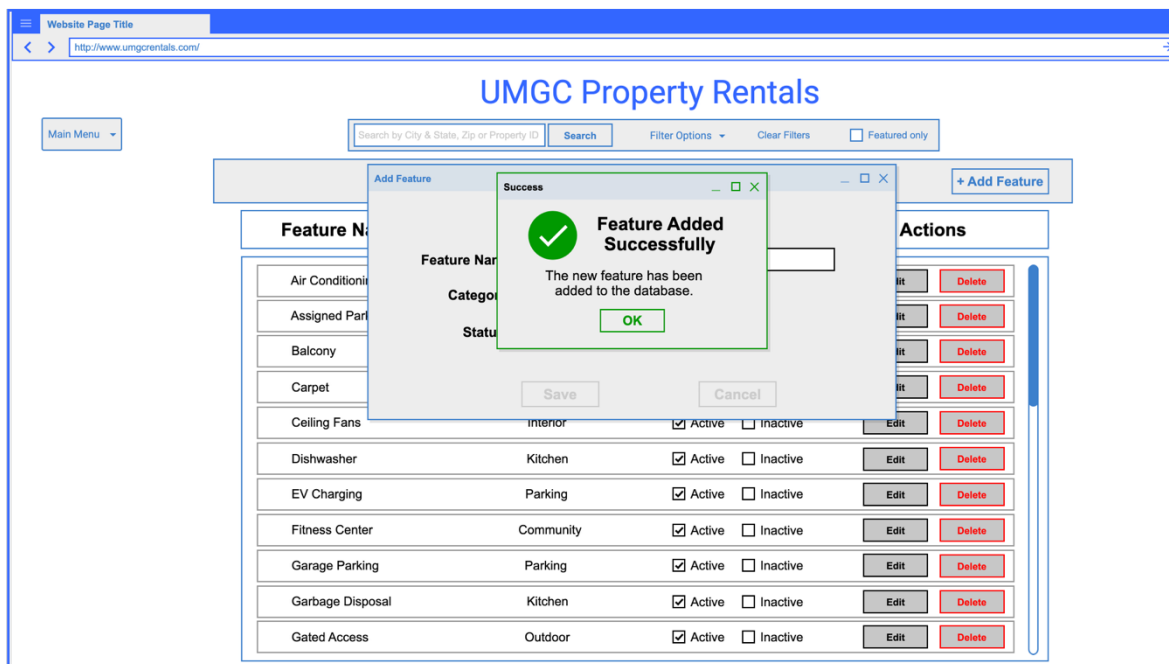


Figure 37 – Desktop Feature Management (Confirmation Popup – Feature Added Successfully)



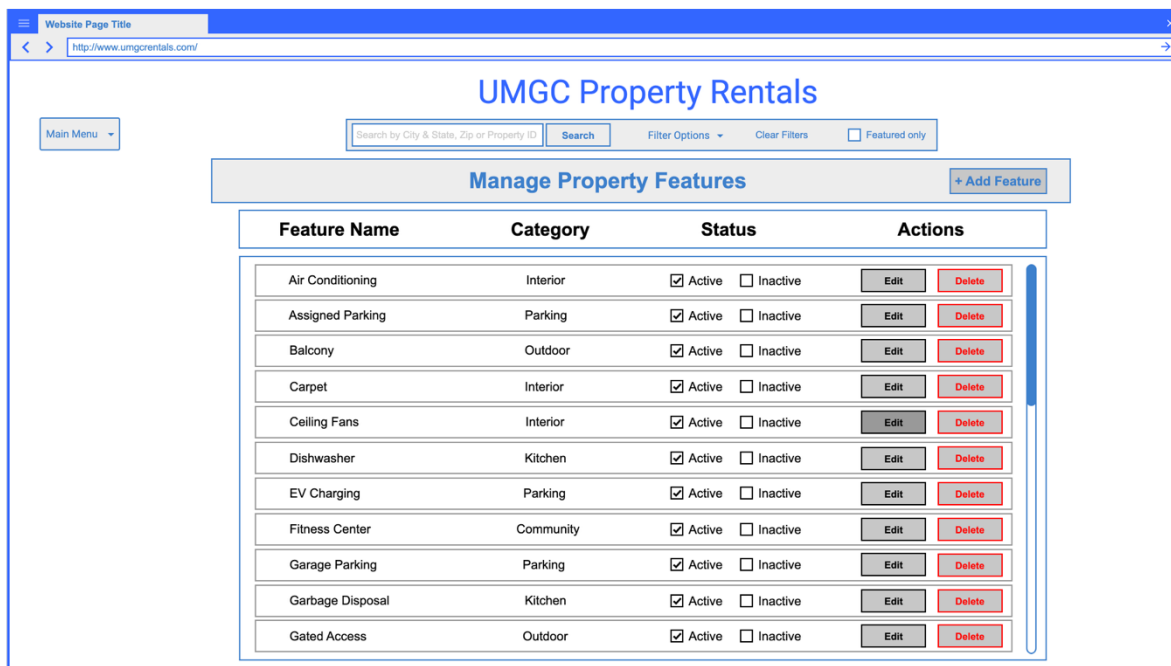


Figure 38 – Desktop Feature Management (Edit Feature Button Selected)

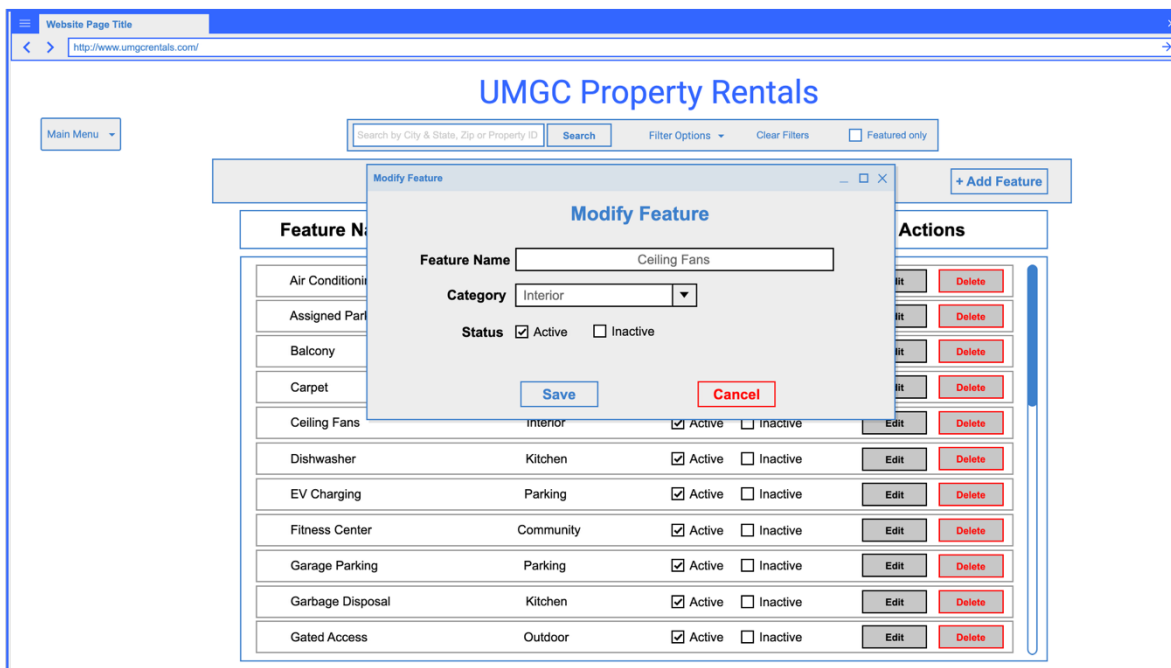


Figure 39 – Desktop Feature Management (Edit Feature Dialog – Pre-Filled Data)



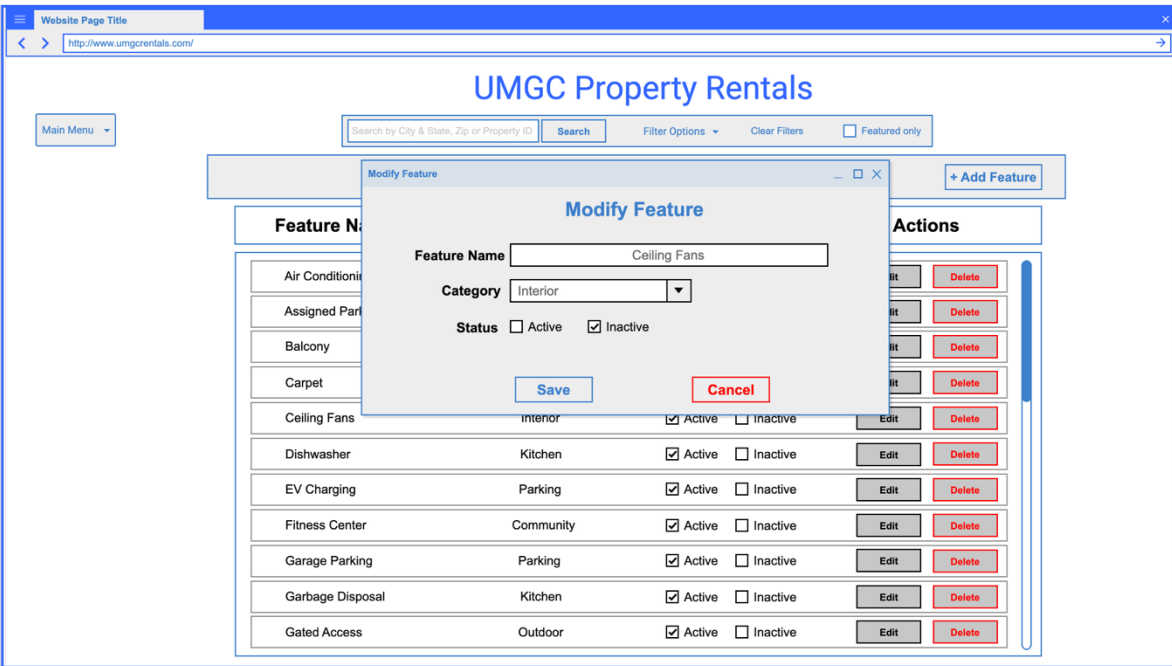


Figure 40 – Desktop Feature Management (Edit Feature Dialog – Status Changed)

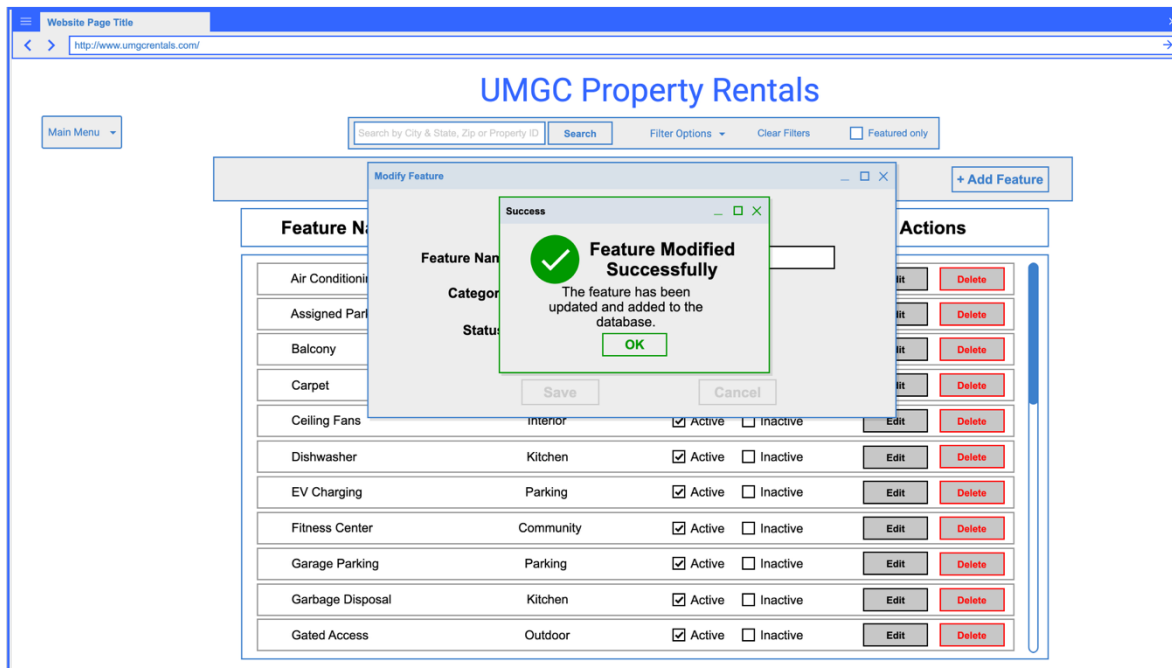


Figure 41 – Desktop Feature Management (Edit Feature Confirmation Popup)



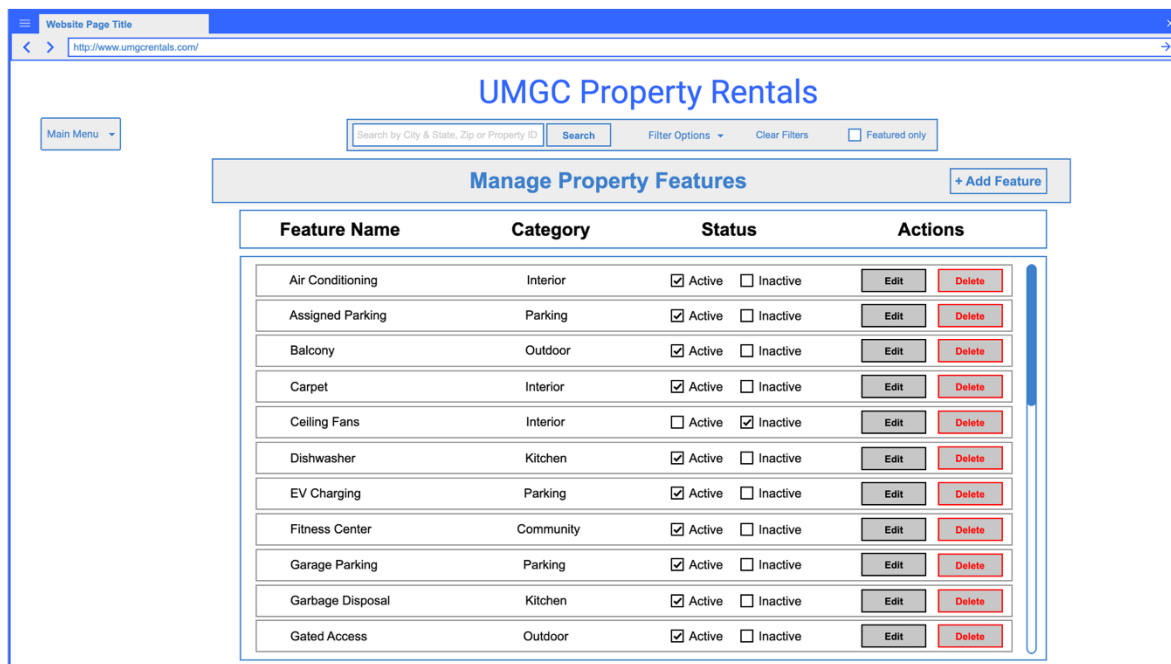


Figure 42 – Desktop Feature Management (Post-Update – Feature Table Synced)

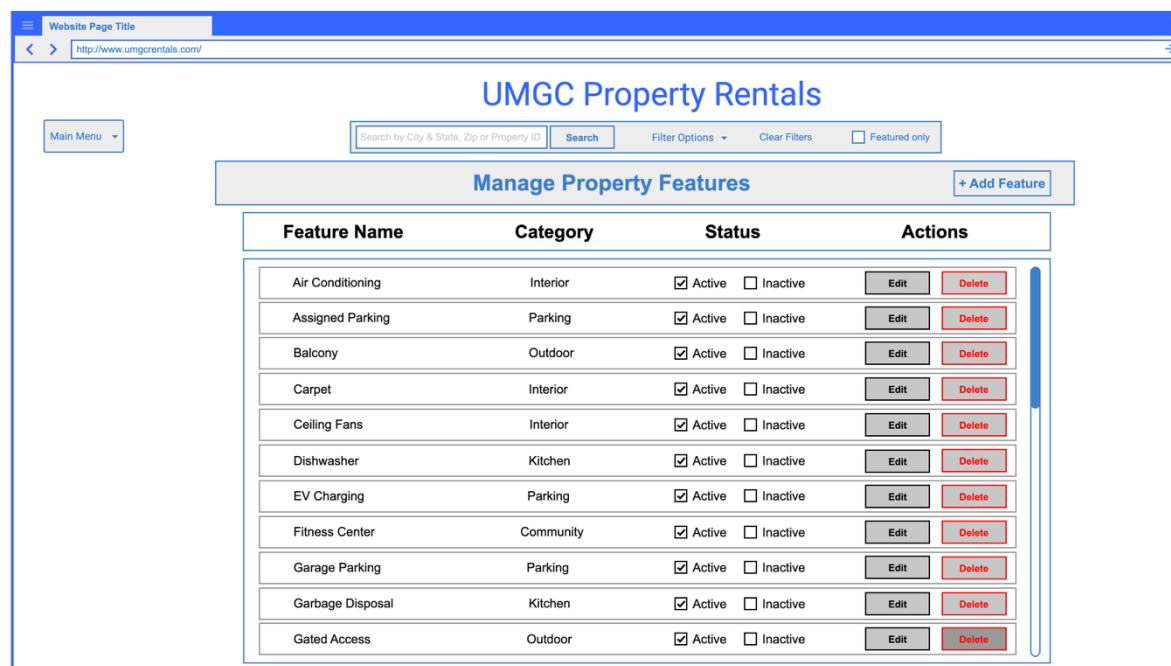


Figure 43 – Desktop Feature Management (Initial Feature List – Delete Button Selected)



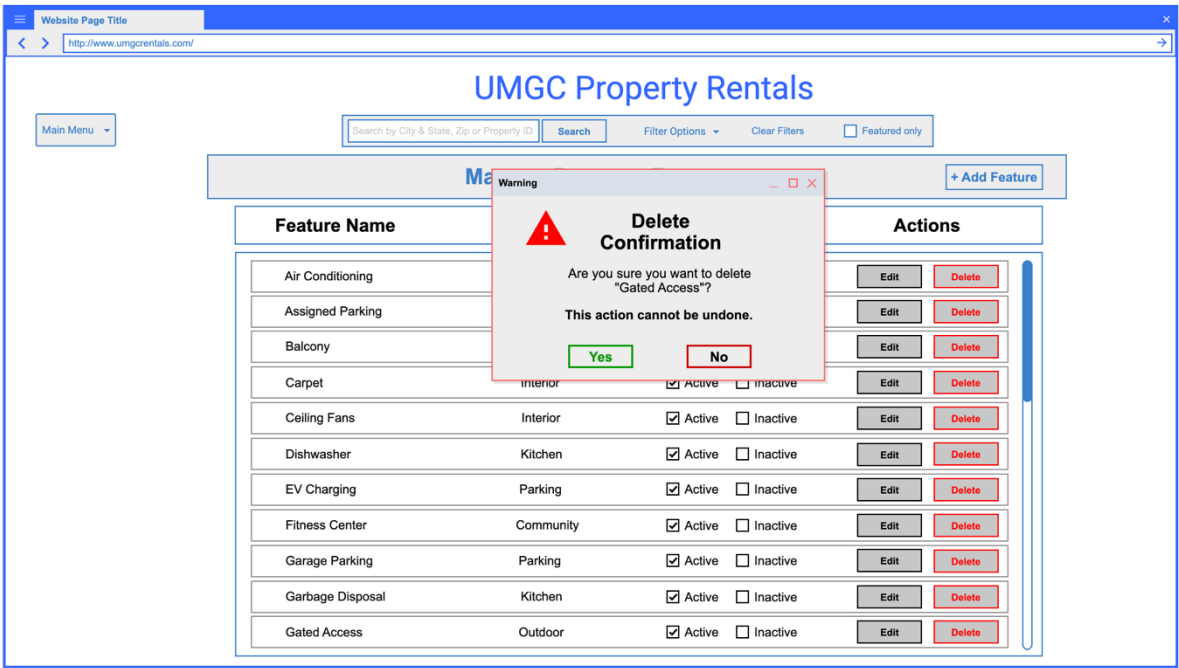


Figure 44 – Desktop Feature Management (Delete Confirmation Dialog)

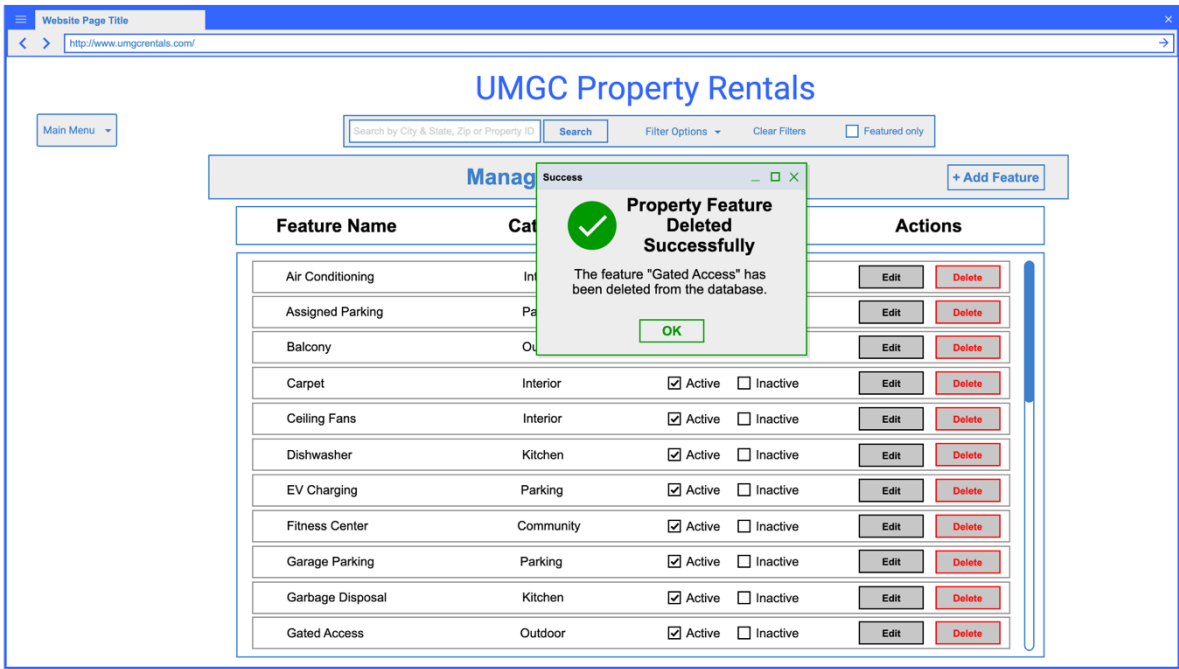


Figure 45 – Desktop Feature Management (Feature Deleted Successfully Confirmation)



The screenshot displays the UMGC Property Rentals web application. At the top, there is a navigation bar with a "Main Menu" dropdown and a search bar labeled "Search by City & State, Zip or Property ID". Below the search bar, there are "Filter Options" and "Clear Filters" buttons. The main content area is titled "Manage Property Features" and includes a "+ Add Feature" button. A table lists various features with their categories, status, and actions.

| Feature Name        | Category  | Status   | Actions                                     |
|---------------------|-----------|--|---|
| Air Conditioning    | Interior  | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |
| Assigned Parking    | Parking   | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |
| Balcony             | Outdoor   | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |
| Carpet              | Interior  | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |
| Ceiling Fans        | Interior  | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |
| Dishwasher          | Kitchen   | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |
| EV Charging         | Parking   | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |
| Fitness Center      | Community | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |
| Garage Parking      | Parking   | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |
| Garbage Disposal    | Kitchen   | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |
| Granite Countertops | Indoor    | <input checked="" type="checkbox"/> Active <input type="checkbox"/> Inactive | <a href="#">Edit</a> <a href="#">Delete</a> |

Figure 46 – Desktop Feature Management (Updated Feature List – Post Deletion)



## Internal UI Functionality

- Feature Table
  - Displays existing features in a tabular layout with columns for Feature Name, Category, Status, and Actions.
  - Each feature row includes a Status checkbox that toggles between Active and Inactive.
  - The table supports scrolling for long lists and real-time updates following add/edit/delete actions.
- Action Buttons
  - Add Feature – Opens a modal dialog where staff can input a new feature name, assign a category, and set its status.
  - Edit – Opens a modal pre-filled with the selected feature's information for modification.
  - Delete – Opens a confirmation dialog requiring user confirmation before removing the feature permanently.
- Modal Windows
  - Both Add Feature and Edit Feature modals contain:
    - Feature Name input field.
    - Category dropdown (Interior, Community, Parking, Other).
    - Status selection (Active/Inactive).
  - Buttons within Modal:
    - Save (blue): Validates and commits the feature to the database.
    - Cancel (red): Closes the modal without saving changes.



**External UI Functionality**

- Add, edit, and delete operations directly modify the centralized Features database.
- Validation logic prevents duplicate feature names across categories.
- Updates propagate instantly across all modules that depend on feature data, including Add Property and Edit Property screens.
- The feature list is dynamically refreshed after each change to reflect current active/inactive states.
- Only Active features appear as selectable options on all linked interfaces (Desktop, Web, and Mobile).
- Deletion events are logged in the server records for administrative tracking.



## Error and Confirmation States

- Validation Error Popup

Triggered when a user attempts to save with incomplete or invalid input.

- Message Text

*“Missing or Invalid Information*

*Please complete all required fields before saving.*

*Highlighted fields must be corrected to continue.”*

- Triggered by: Clicking Save when Feature Name or Category is empty.
  - Affected input fields are bordered in red for user visibility.

- Validation Resolved

Once all required fields are correctly filled, the Save button becomes active and the dialog allows submission.

- Confirmation Popup – Add Feature

Appears immediately after successfully saving a new feature.

- Message Text

*“Feature Added Successfully*

*The new feature has been added to the database.”*

- Triggered by: Clicking Save on the Add Feature modal with all fields completed.
  - Includes a green checkmark icon and an OK button to close the dialog.
  - On confirmation, the modal closes and the feature appears in the updated table.

- Confirmation Popup – Edit Feature

Appears after successfully modifying an existing feature.

- Message Text

*“Feature Updated Successfully*

*The selected feature details have been updated in the database.”*

- Triggered by: Clicking Save in the Edit Feature dialog.
  - Automatically returns the user to the refreshed feature list view.



- Delete Confirmation (Warning Popup)

When the Delete action is selected, a system modal confirms the removal request.

- Message Text

*“Delete Confirmation*

*Are you sure you want to delete this feature?*

*This action cannot be undone.”*

- Triggered by: Selecting Delete on a feature row.

- Buttons

- Yes (green)

- No (red)

- Selecting Yes proceeds with deletion and triggers the success popup; No cancels the action.

- Delete Success Popup

Appears after confirming deletion.

- Message Text

*“Property Feature Deleted Successfully*

*The selected feature has been deleted from the database.”*

- Triggered by: Selecting Yes in the Delete Confirmation dialog.

- Includes a green checkmark and OK button; closing the dialog refreshes the table view.

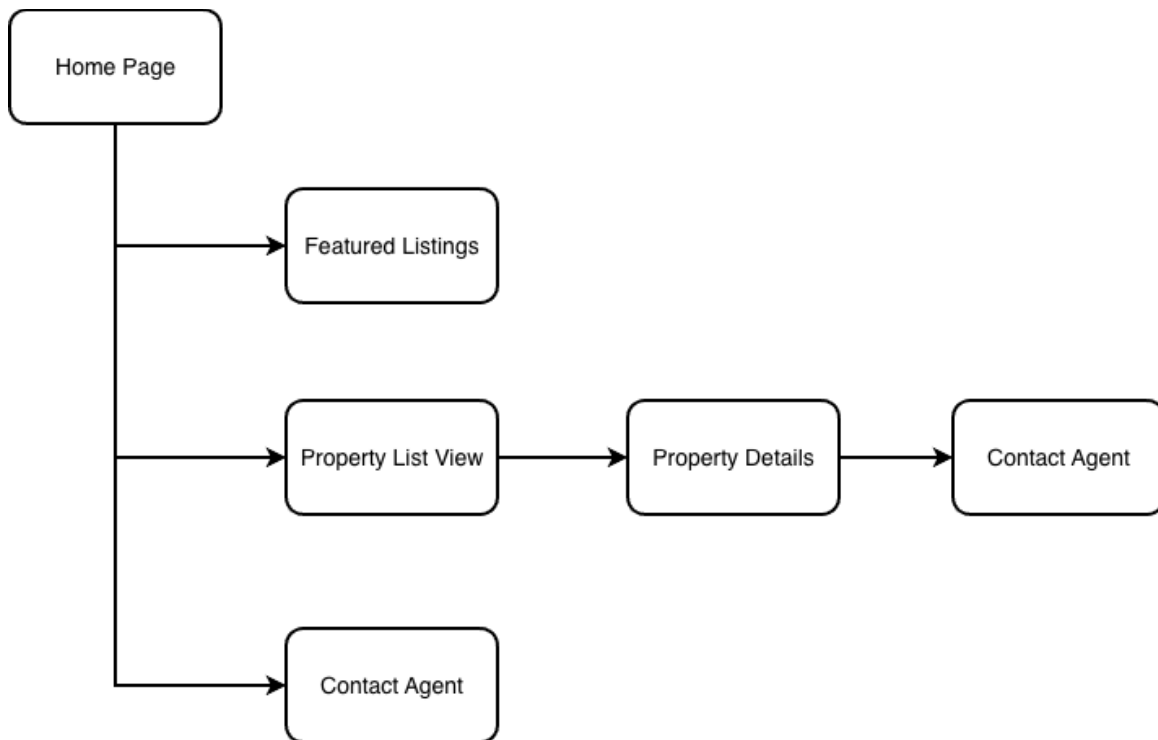


## 2.2 Web Application (Renters)

The web application serves as the primary platform for renters to browse and explore available properties. It offers an intuitive, visually appealing interface optimized for desktop and laptop web browsers. Users can search for properties, apply filters, view detailed listings, and contact the *UMGC Property Rentals* office for more information. The design prioritizes ease of navigation, clarity of information, and a seamless browsing experience while maintaining a consistent visual identity across the entire platform.

### Navigation Flow Overview – Web Application

The web application enables renters to browse and inquire about properties using an intuitive and direct navigation path. The diagram below summarizes the flow of interactions within the public web interface.



*Figure 47 – Web User Flow*

This linear yet flexible structure allows renters to locate properties of interest, explore detailed listings, and initiate contact without unnecessary navigation steps.

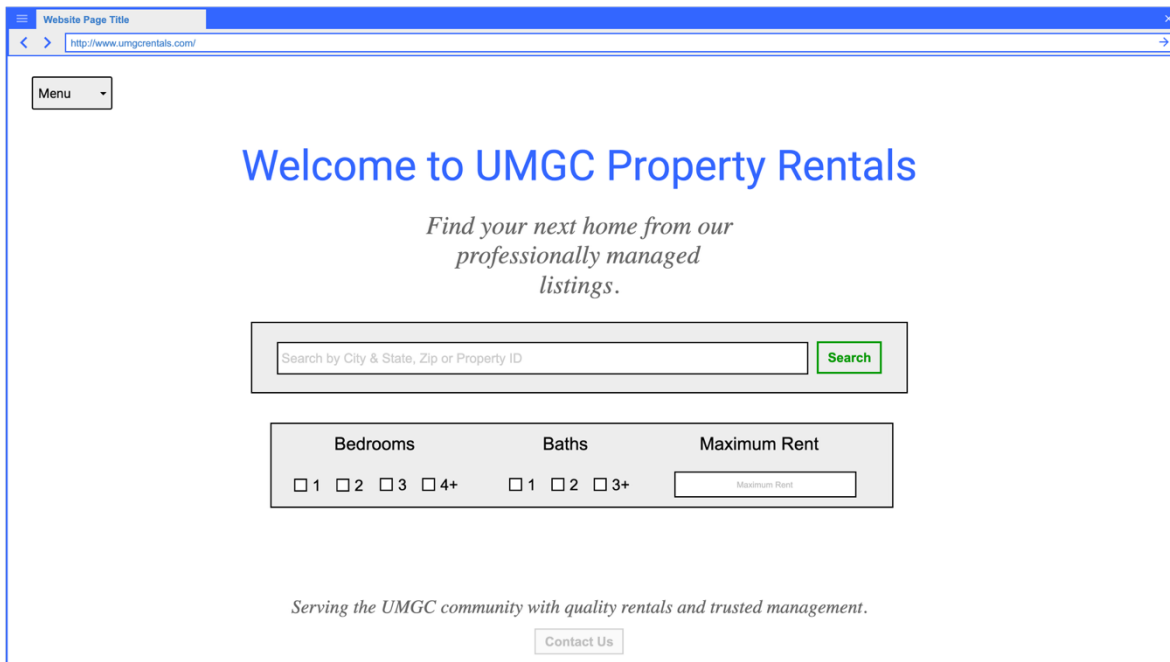


### 2.2.1 Home Page

The *Home Page* serves as the entry point for renters accessing the *UMGC Property Rentals* web application. It provides a clean and welcoming introduction to the site, emphasizing ease of navigation and immediate access to essential functions. The design centers on a prominent search interface that allows users to filter by City & State, ZIP Code, Bedrooms, Bathrooms, or maximum rent. A concise welcome message and a visible “*Contact Us*” button reinforce trust and professionalism. The simple layout and high-contrast buttons promote accessibility and readability across all screen sizes.

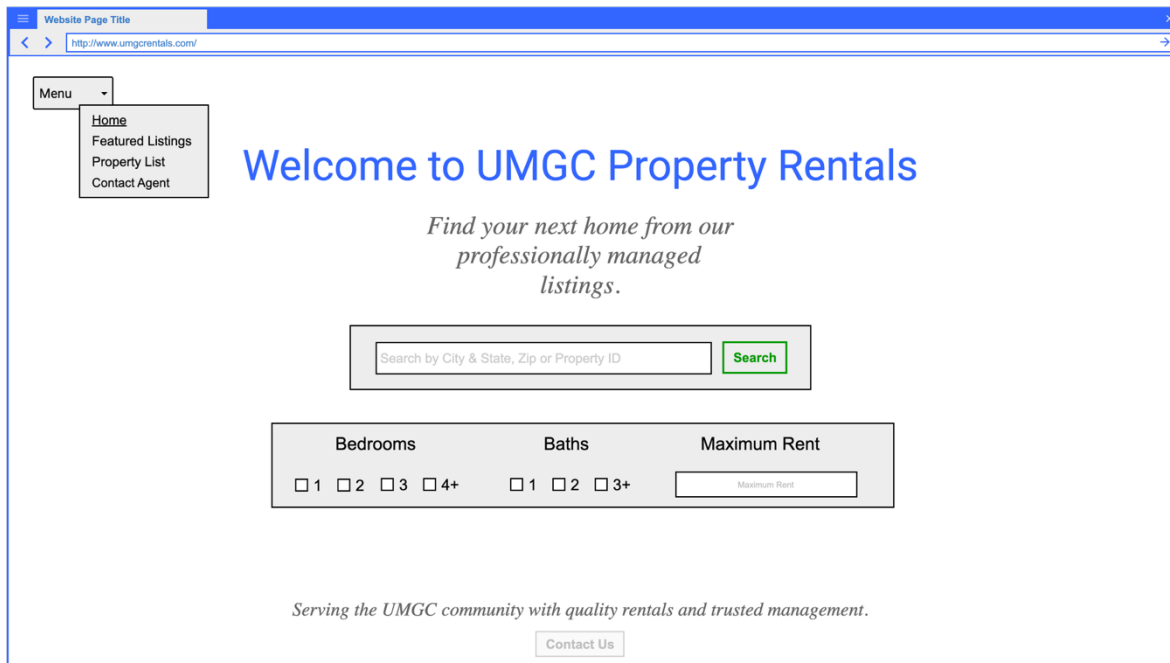
**Screen Name:** Web Landing Page

**Image**



*Figure 48 – Web Home Page Screen*





*Figure 49 – Web Home Page Screen Menu*

### Internal UI Functionality

- Prominent search bar accepts input by City & State or ZIP Code.
- Filter checkboxes allow users to specify the number of bedrooms, bathrooms, and maximum rent.
- Menu button expands to reveal key navigation options: Home, Featured Listings, Property List, and Contact Agent.
- Contact Us button (footer) links directly to the inquiry form.

### External UI Functionality

- Executes search queries and redirects to the Property List screen with results based on entered criteria.
- If no filters are entered, the system defaults to displaying featured properties only.
- Menu navigation dynamically loads each linked page without requiring a full refresh.
- Pulls introductory text and featured listings from the live property database.



### 2.2.2 Featured Listings Page

The *Featured Listings Page* highlights premium or prioritized rental properties that have been marked as featured by office staff within the desktop application. This page provides renters with a curated selection of high-visibility listings, allowing them to quickly view desirable or recently updated properties. Each listing card displays an image placeholder, address, rental price, and a “View” button for direct access to detailed information. Featured properties are visually distinguished with a gold star icon beside the address, emphasizing their prominence.

**Screen Name:** Featured Listings

#### Images

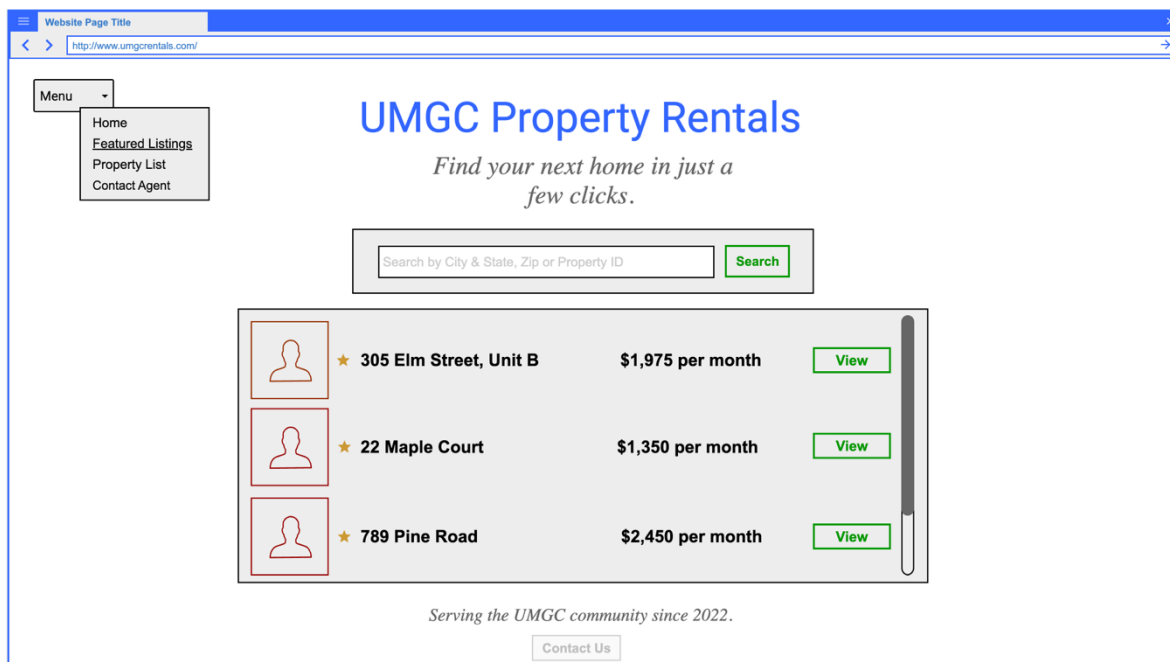


Figure 50 – Web Property Featured Listings Page



**Internal UI Functionality**

- Listing Cards: Display key property details — thumbnail image, address, rent, and quick “*View*” button.
- Gold Star Icon: Identifies featured properties pulled from the backend database.
- Scrollable List: Allows users to browse multiple featured rentals within the same screen.
- Menu Navigation: Accessible via the hamburger menu for quick switching between Home, Property List, and Contact Agent pages.
- Search Bar: Remains active, enabling refinement of featured results by City & State, or ZIP Code.

**External UI Functionality**

- Automatically populates featured properties from the active property database.
- “*View*” button redirects to the Property Detail Page with preloaded listing data.
- Ensures data synchronization with the Desktop Application’s Featured Property selections.
- Retrieves and displays updated rental prices and availability in real time.



### 2.2.3 Search Results Page

The *Search Results Page* displays rental properties that match a user's search parameters, combining efficiency with readability. Results are presented in a vertically scrolling list of property cards, each showing a thumbnail image, address, brief description, and rent per month. A consistent, minimal layout helps renters quickly scan listings and identify relevant options. Filters and search bars remain visible, allowing users to adjust their search criteria dynamically without navigating away. Featured properties are visually highlighted with a gold star icon, emphasizing premium listings managed by the office.

**Screen Name:** Property Search Results

#### Images

The screenshot shows a web browser window with the URL <http://www.umgcrentals.com/>. The page has a blue header bar with the text "Website Page Title". Below the header, there is a "Menu" dropdown button. The main content area features a large blue heading "Welcome to UMGC Property Rentals" and a subheading "Find your next home from our professionally managed listings." Below this, there is a search bar with the text "Dallas, Texas" and a green "Search" button. Underneath the search bar, there are three filter sections: "Bedrooms" with checkboxes for 1, 2, 3, and 4+; "Baths" with checkboxes for 1, 2, and 3+; and "Maximum Rent" with a text input field containing "2500". At the bottom of the page, there is a footer with the text "Serving the UMGC community with quality rentals and trusted management." and a "Contact Us" button.

Figure 51 – Web Property Listings Page (Options Selected)



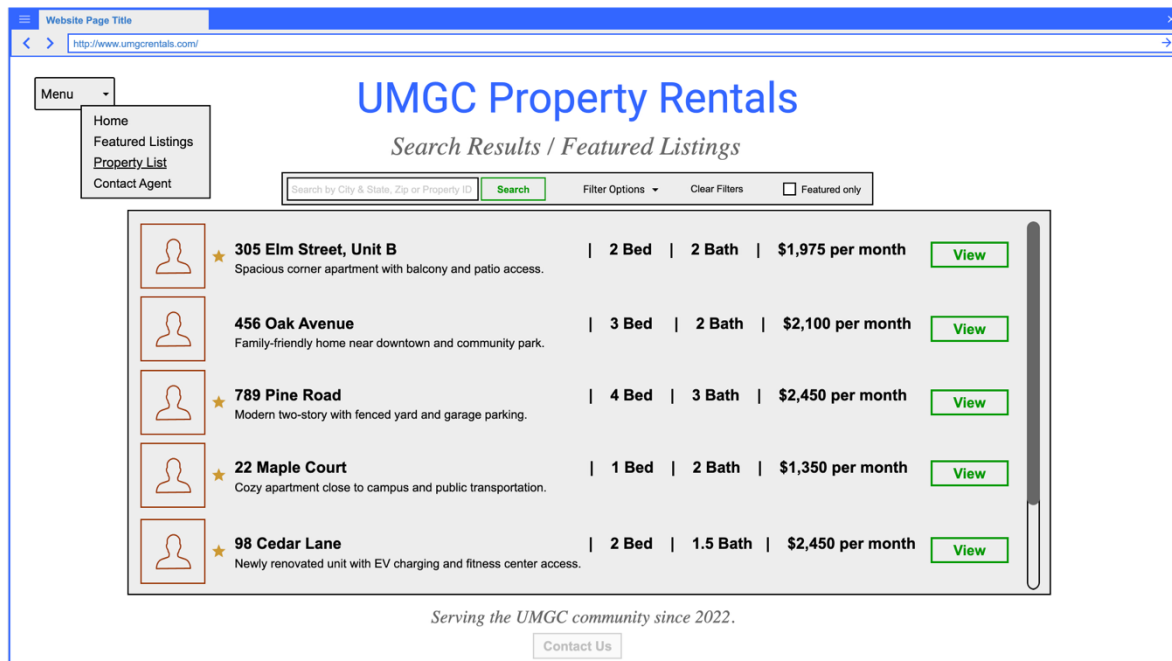


Figure 52 – Web Property Listings Page (Filters Applied)

### Internal UI Functionality

- Search Bar: Allows refinement by City & State or ZIP Code directly from the results screen.
- Filter Options: Dropdown tools enable filtering by rent range, number of bedrooms, and features.
- Clear Filters Button: Resets the displayed list to all available or featured listings.
- Property Cards: Include property photo placeholders, address, rent, and a “View” button.
- Featured Star Indicator: Marks promoted or staff-highlighted listings.
- Persistent Navigation Menu: Provides access to Home, Featured Listings, Property List, and Contact Agent pages.



**External UI Functionality**

- Retrieves matching listings dynamically from the live property database.
- Applies real-time filtering and sorting without reloading the entire page.
- “*View*” button redirects the user to the Property Details Page, carrying over the selected property’s data.
- Displays the latest rent and availability information synced from the desktop management system.
- Defaults to showing featured listings when no filters are applied.

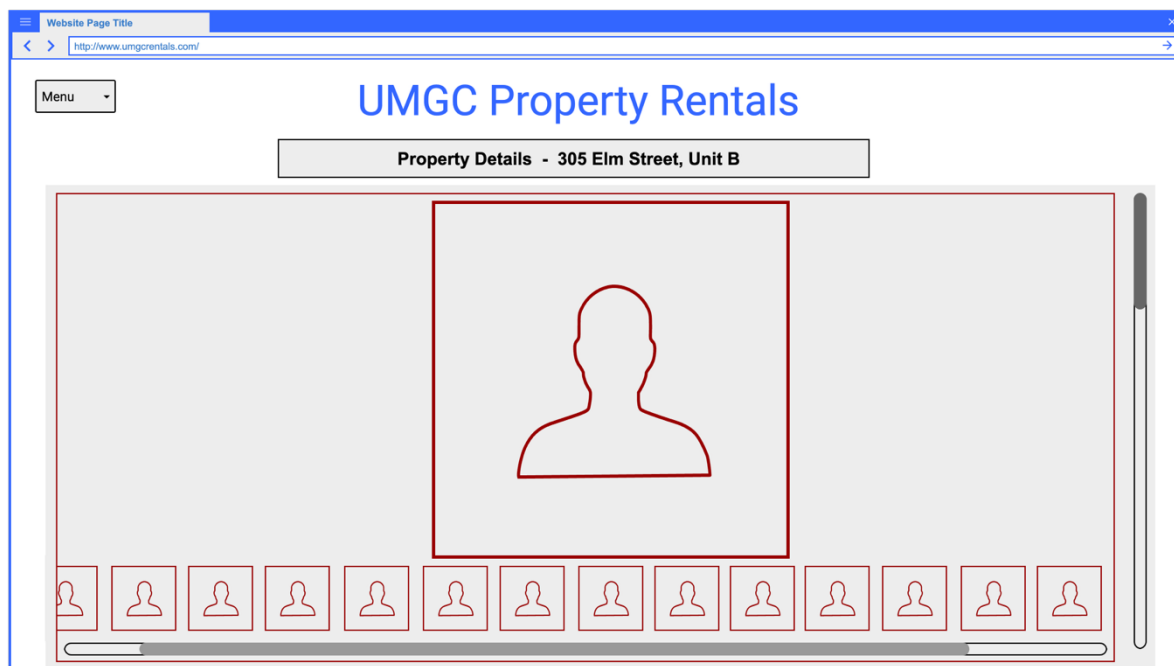


### 2.2.4 Property Details Page

The *Property Details Page* provides renters with a complete overview of a selected property, combining essential listing data, high-quality visuals, and direct contact functionality. The design prioritizes clarity and engagement, separating content into logical sections for photos, property specifications, amenities, and communication. Users can scroll through the image gallery, review property features, and submit inquiries directly from the same page. This integrated approach enhances user experience by minimizing navigation and keeping the renter focused on the property details.

**Screen Name:** Property Information

#### Images



*Figure 53 – Web Property Details Page (Image Gallery)*





Figure 54 – Web Property Details Page (Property Information and Description)



Figure 55 – Web Property Details Page (Property Features)



The screenshot displays a web browser window with the address <http://www.umgrentrials.com/>. The page title is "Website Page Title". The main heading is "UMGC Property Rentals". Below the heading is a sub-header "Property Details - 305 Elm Street, Unit B". The main content area is titled "Contact Agent" and contains a form with the following fields:

- Name**: Full name
- Email**: Email Address
- Telephone**: Telephone Number
- Message**: Enter the message for the agent.

A green "Submit" button is located below the form. To the right of the button, a note states: "\* Submitting this form sends your inquiry to our leasing staff." Below the form, the text "Serving the UMGC community since 2022." is displayed, followed by a "Contact Us" button.

Figure 56 – Web Property Details Page (Contact Agent Form)

The screenshot displays the same web browser window as Figure 56, but with a validation error message displayed. The error message is titled "Information Error" and contains the text: "Missing or Invalid Information". Below this, it says: "Please complete all required fields before saving. Highlighted fields must be corrected to continue." An "OK" button is located below the message. The form fields are highlighted in red, indicating they are required. The "Email" field is highlighted in red, and the "Name" field is highlighted in red. The "Submit" button is disabled (grayed out). The note "\* Submitting this form sends your inquiry to our leasing staff." is still present.

Figure 57 – Web Property Details Page (Validation Error – Missing or Invalid Information)



Web Site Page Title

http://www.umgrentrals.com/

Menu

# UMGC Property Rentals

Property Details - 305 Elm Street, Unit B

## Contact Agent

Name

Email

Telephone

Message

Enter the message for the agent.

Submit

Success

Message Sent!

A leasing consultant will contact you within 2 days.

OK

\* Submitting this form sends your inquiry to our leasing staff.

Serving the UMG community since 2022.

Contact Us

Figure 58 – Web Property Details Page (Form Submission Confirmation)

### Internal UI Functionality

- Image Gallery – Displays a main photo area with horizontally scrollable thumbnails.
- Structured Property Data – Lists address, city, state, bedrooms, bathrooms, square footage, rent amount, and featured status.
- Property Description – Provides a narrative summary highlighting unique features and management details.
- Feature Checklist – Displays associated amenities (e.g., Air Conditioning, Balcony, Washer/Dryer, Fitness Center Access).
- Contact Agent Form – Includes fields for Name, Email, Telephone, and Message.
  - Submitting the form triggers front-end validation.
  - Missing required fields activate the Validation Error Popup.



**External UI Functionality**

- Dynamically loads property data and images from the database based on *Property ID*.
- “*Contact Agent*” form connects directly to the property management system for lead tracking and agent response.
- Supports responsive layout for both desktop and mobile browsers.
- Displays a confirmation message after successful submission.
- Returns to Search Results Page after user acknowledgment.
- Synchronizes updates with the desktop system to ensure consistent property details and availability across all platforms.



## Error and Confirmation States

- Validation Error – Missing or Invalid Information
  - Triggered by: Clicking Submit when required fields (e.g., Email or Message) are left blank or incorrectly formatted.
  - Popup Title: Information Error
  - Message Text

*“Missing or Invalid Information*  
*Please complete all required fields before saving.*  
*Highlighted fields must be corrected to continue.”*
  - The popup appears in a red-bordered dialog with an OK button.
  - Invalid fields (e.g., Email) are highlighted in red.
  - The form remains visible beneath the popup to allow correction.
- Form Submission Confirmation
  - Triggered by: Successful completion and submission of the “Contact Agent” form.
  - Message Text

*“Message Sent Successfully*  
*Your inquiry has been submitted to the leasing staff. A representative will contact you shortly.”*
  - Displays a green checkmark icon and OK button.
  - On confirmation, the popup closes and the user is redirected back to the Property Details Page or Search Results Page.



### 2.2.5 Contact Form Page

The *Contact Form Page* enables renters to reach out directly to UMGC Property Rentals staff with questions or requests for more information. It provides a straightforward communication channel for potential tenants, ensuring inquiries are specific, organized, and easy to process. The layout emphasizes simplicity and professionalism through clearly labeled input fields and visual hierarchy that guides user attention. Built-in validation checks prevent incomplete submissions, while confirmation pop-ups reinforce successful communication and user confidence.

**Screen Name:** Inquiry Form

#### Images

Website Page Title

http://www.umgcrentals.com/

Menu

- Home
- Featured Listings
- Property List
- Contact Agent

## UMGC Property Rentals

Contact Our Leasing Team

Have a question about our listings or want to schedule a tour?  
Send us a message and our team will reach out to you soon.

**Get In Touch**

**Name**

**Email**

**Telephone**

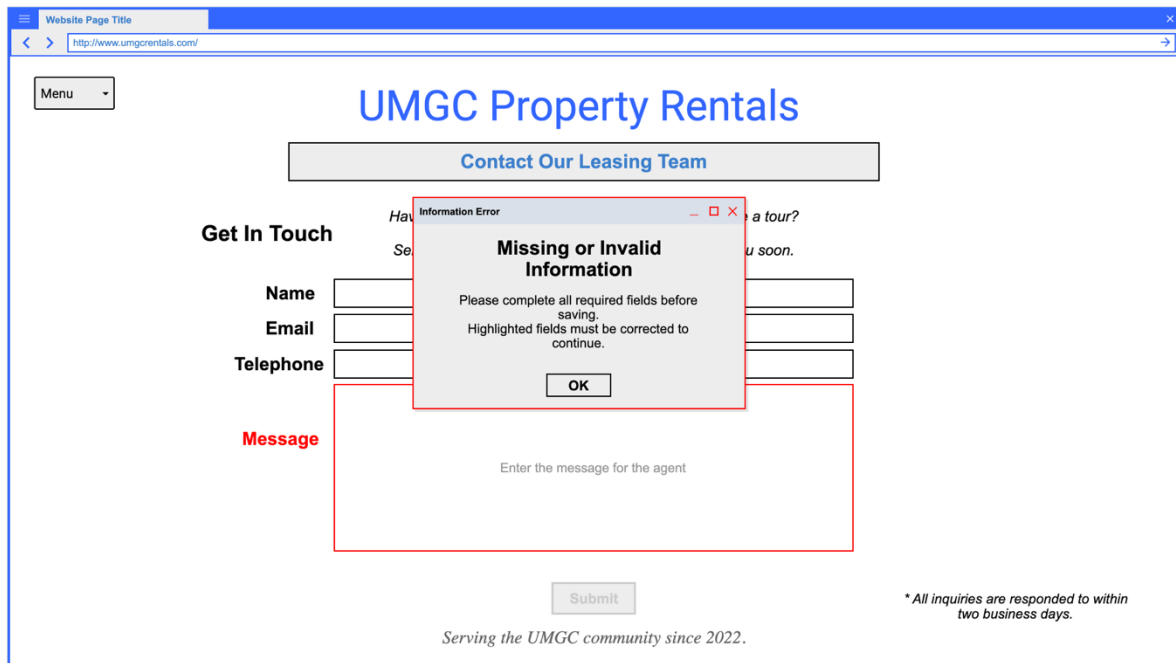
**Message**

\* All inquiries are responded to within two business days.

Serving the UMGC community since 2022.

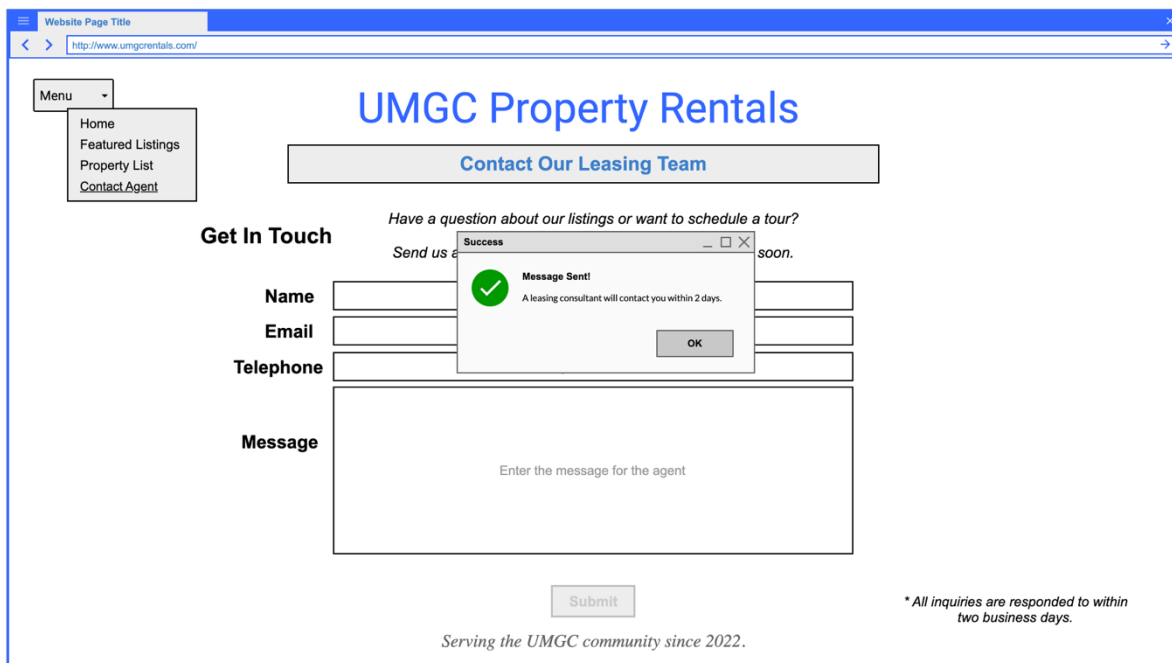
Figure 59 – Web “Contact Agent” Page





The screenshot shows a web browser window with the URL <http://www.umgcrentals.com/>. The page title is "Website Page Title". The main heading is "UMGC Property Rentals". Below the heading is a button labeled "Contact Our Leasing Team". On the left, there is a "Menu" dropdown. The main content area is titled "Get In Touch" and contains a form with fields for "Name", "Email", "Telephone", and "Message". A red border highlights the "Message" field. A modal dialog box titled "Information Error" is displayed in the center, with the message: "Missing or Invalid Information. Please complete all required fields before saving. Highlighted fields must be corrected to continue." and an "OK" button. At the bottom, there is a "Submit" button and a footer that reads "Serving the UMGc community since 2022." and "\* All inquiries are responded to within two business days."

Figure 60 – Web Contact Form Page (Validation Error – Missing or Invalid Information)



The screenshot shows the same web browser window as Figure 60, but with a different modal dialog box. The dialog box is titled "Success" and contains a green checkmark icon, the text "Message Sent!", and a message: "A leasing consultant will contact you within 2 days." with an "OK" button. The "Message" field in the form is now empty. The footer remains the same: "Serving the UMGc community since 2022." and "\* All inquiries are responded to within two business days."

Figure 61 – Web Contact Form Page (Submission Confirmation)



**Internal UI Functionality**

- Input Fields: Name, Email, Telephone, and Message.
- Submit Button: Triggers field-level validation and displays appropriate error or confirmation pop-ups.
- Inline Validation: Required-field checks and email-format verification occur immediately on submission.
- Error Handling
  - Missing or incorrect entries highlight the affected fields in red.
  - A modal error dialog appears prompting correction before submission proceeds.
- Clean Layout: Consistent font size, spacing, and alignment ensure high readability across devices.

**External UI Functionality**

- Submits inquiry data directly to the *UMGC Property Rentals* office email system for routing to leasing staff.
- Displays a confirmation dialog confirming successful form submission.
- Redirects the user back to the Property Details Page after confirmation.
- Server logs capture timestamped inquiries for staff review and response tracking.
- All messages receive a response within two business days.



## Error and Confirmation States

- Validation Error – Missing or Invalid Information
  - Triggered by: Clicking Submit when any required field (Email, Name, or Message) is empty or invalid.
  - Popup Title: Information Error
  - Message Text

*“Missing or Invalid Information*  
*Please complete all required fields before saving.*  
*Highlighted fields must be corrected to continue.”*
  - A red-bordered popup appears with an OK button.
  - The field labels and borders of invalid entries turn red.
  - Form input remains available beneath the popup for user correction.
- Submission Confirmation
  - Triggered by: Clicking Submit after all fields validate successfully.
  - Message Text

*“Message Sent Successfully*  
*Your inquiry has been submitted to our leasing staff. A representative will contact you soon.”*
  - Displays a green checkmark icon and OK button.
  - Closing the popup redirects the user to the Property Details Page.
  - The system records the timestamp and inquiry ID in server logs.

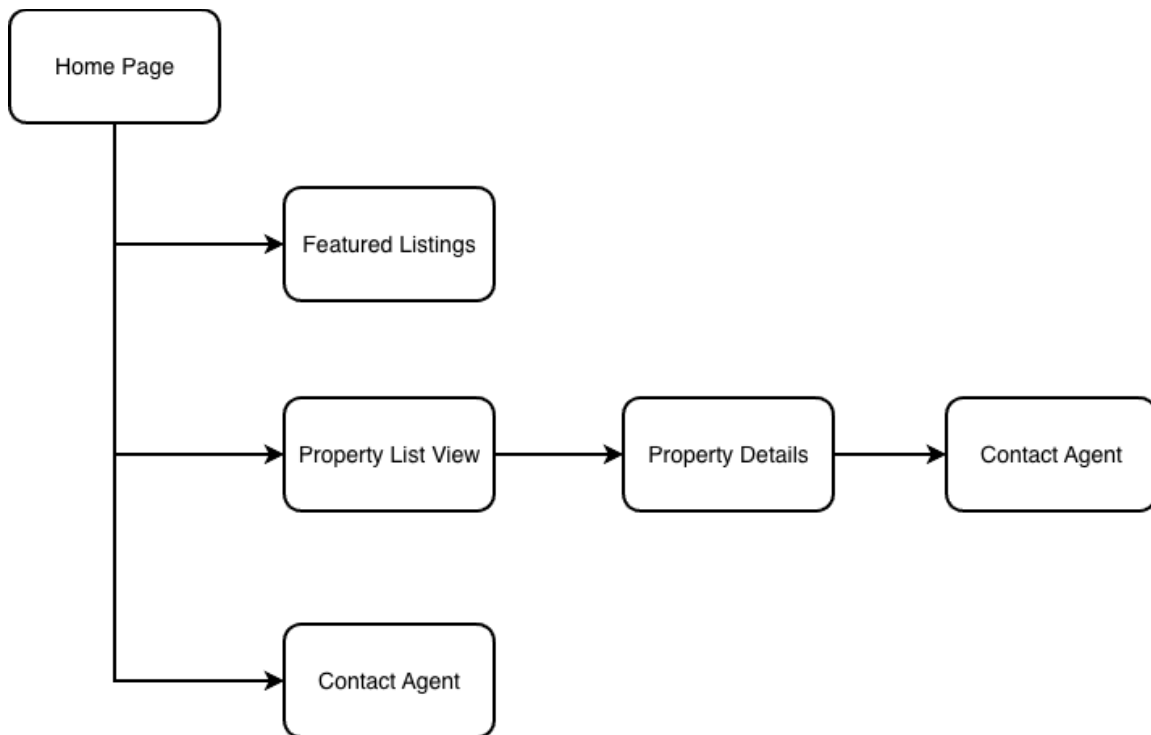


## 2.3 Mobile Application (Renters)

The mobile application extends the functionality of the web interface to smartphones and tablets, allowing renters to access property listings conveniently on the go. It features a simplified layout and responsive design optimized for smaller screens, ensuring that all core actions—such as searching, viewing, and contacting—remain fast and intuitive. Key elements like icons, menus and buttons are adapted for touch interaction, while maintaining consistency with the web platform to support a cohesive user experience across all devices.

### Navigation Flow Overview – Mobile Application

The mobile application simplifies the web experience into a compact, touch-friendly interface designed for smartphones and tablets. The following diagram illustrates how renters navigate through the mobile screens.



*Figure 62 – Mobile User Flow*

This flow minimizes effort by reducing steps between search, viewing, and communication, optimizing the experience for one-handed and on-the-go use.

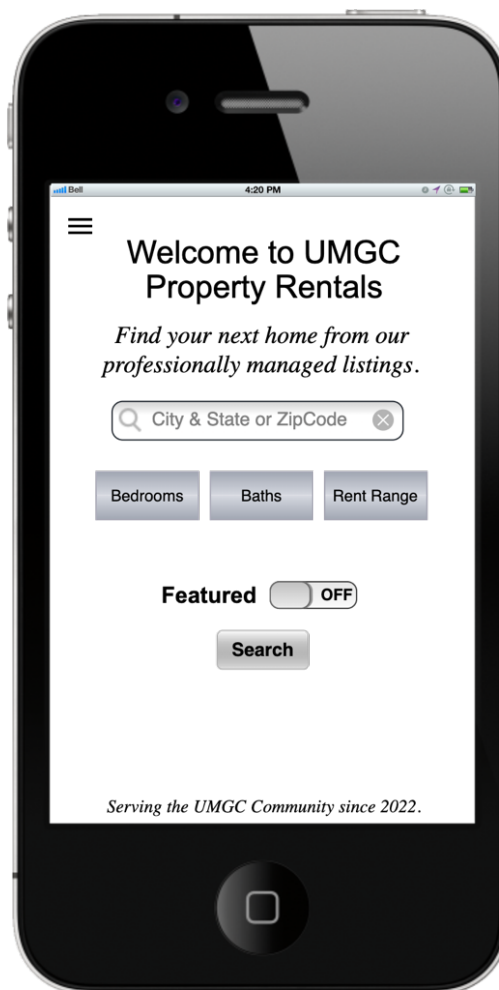


### 2.3.1 Mobile Home Screen

The *Mobile Home Screen* serves as the main access point for renters using the *UMGC Property Rentals* mobile application. Designed for simplicity and speed, it emphasizes direct search and intuitive navigation. The layout features a responsive, vertically aligned interface with a prominent search bar, filter buttons for Bedrooms, Bathrooms, and rent range, and a toggle for featured listings. The inclusion of a collapsible hamburger menu ensures users can easily reach secondary screens such as the property list or contact form without cluttering the main view.

**Screen Name:** Mobile Home

**Images**



*Figure 63 – Mobile Home Page (Default View)*



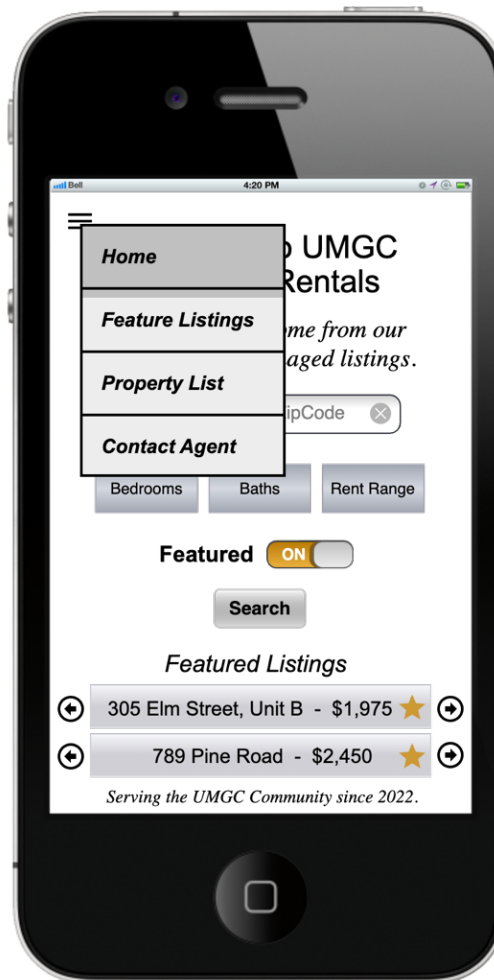
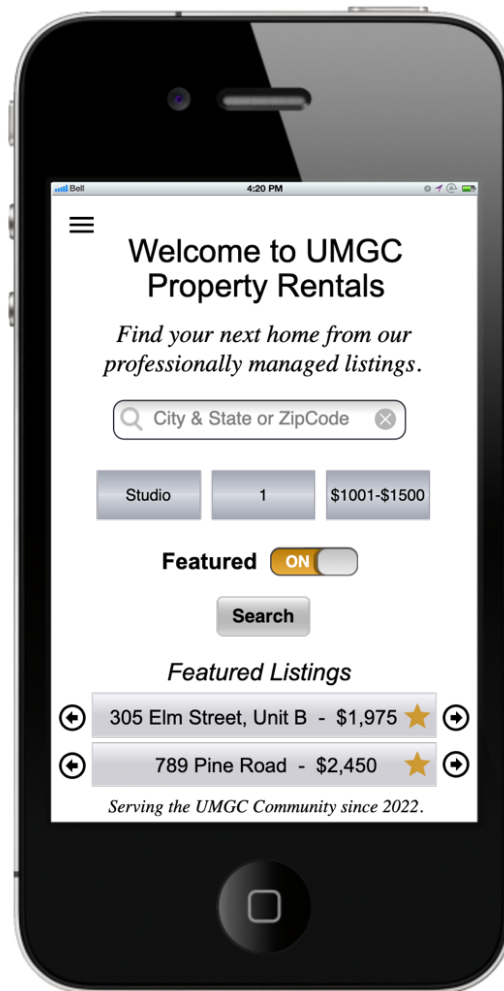


Figure 64 – Mobile Home Page (Menu Expanded)





*Figure 65 – Mobile Home Page (Filters Applied)*

### Internal UI Functionality

- Search bar for entering City & State or ZIP Code.
- Filter buttons for Bedrooms, Bedrooms, and rent range selection.
- Toggle switch to display featured listings only.
- Hamburger navigation menu with links to Home, Property List, Featured Listings, and Contact Agent.



**External UI Functionality**

- Executes search and redirects to the Property List Screen.
- Featured toggle displays highlighted listings when activated.
- Menu navigation provides seamless access to key app areas.
- Automatically retrieves current property data from the shared web database.



### 2.3.2 Property List View

The *Property List View* displays all available rental properties matching the renter's selected filters. Designed for quick browsing on mobile devices, this screen prioritizes readability and tap-based navigation. Each property is presented as a compact list item displaying the address, rent amount, and a "View" button for accessing detailed property information. A featured icon highlights premium listings, while navigation buttons ("Next" and "Back") enable efficient movement through result sets without reloading the entire page.

**Screen Name:** Mobile Search Results

**Images**

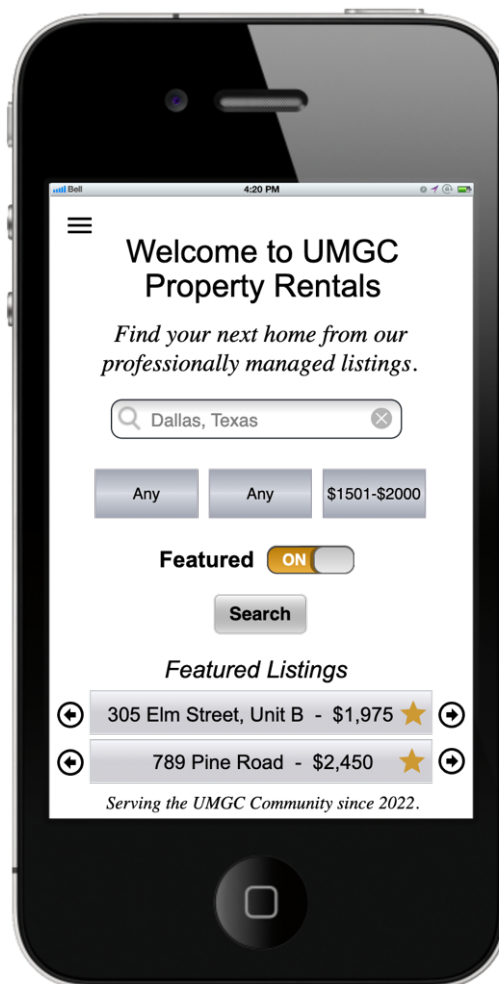


Figure 66 – Mobile Property List Page (Search Results)



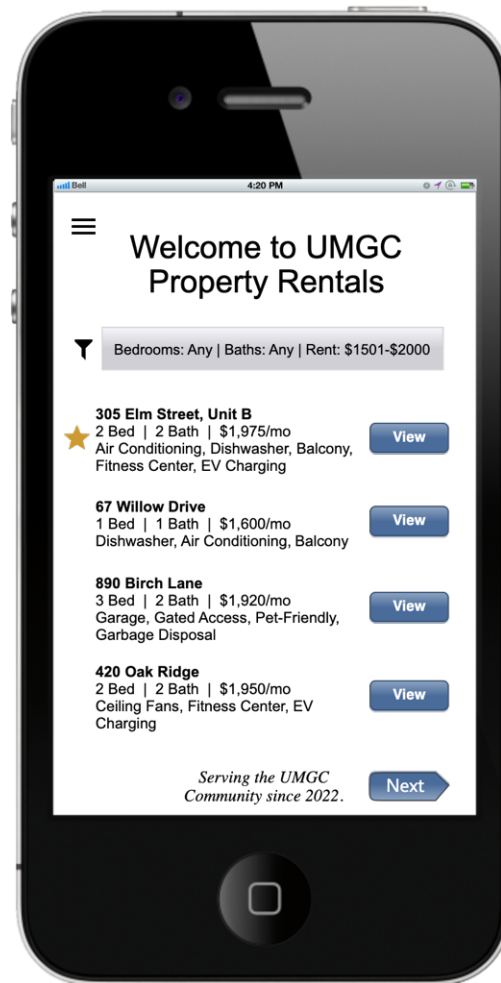
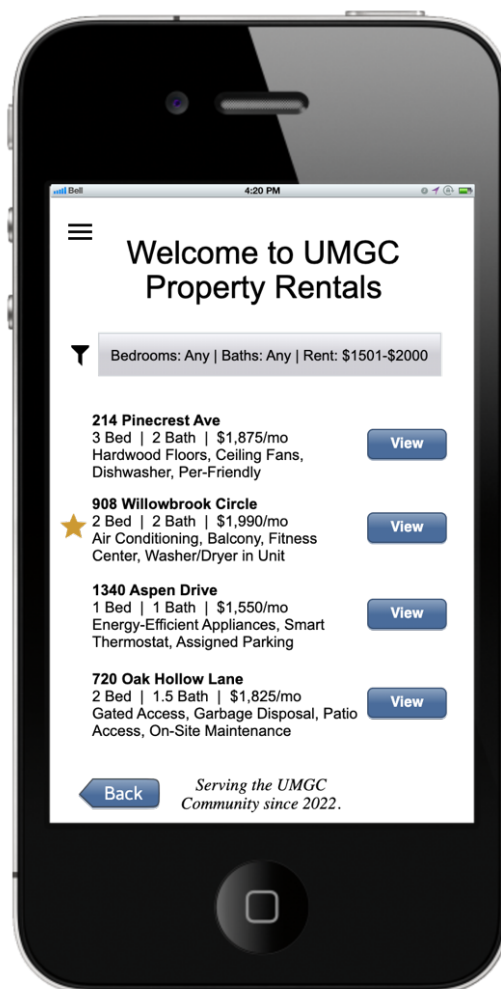


Figure 67 – Mobile Property List Page (Next Page)





*Figure 68 – Mobile Property List Page (Back Navigation)*

### Internal UI Functionality

- Scrollable list displaying property address, rent, and featured status.
- “View” button for each listing to access full property details.
- Paging controls (“Next” and “Back”) for navigation between result sets.
- Compact layout optimized for one-handed mobile interaction.



**External UI Functionality**

- Loads listings from the shared *UMGC Property Rentals* database based on search filters.
- Selecting “*View*” transitions to the Property Detail View.
- Pagination retrieves additional data without reloading the interface.
- Listings automatically refresh when new search criteria are applied.



### 2.3.3 Property Detail View

The *Property Detail View* provides renters with an in-depth look at a selected property, optimized for mobile devices. The design emphasizes clarity, organization, and engagement by presenting key information—such as address, rent, and amenities—within a scrollable, visually structured layout. High-resolution images and clean typography guide the user’s focus to essential details, while a persistent “*Contact Agent*” button encourages immediate interaction. The layout ensures that renters can review property information quickly and transition seamlessly to the inquiry process.

**Screen Name:** Mobile Property Details

#### Images

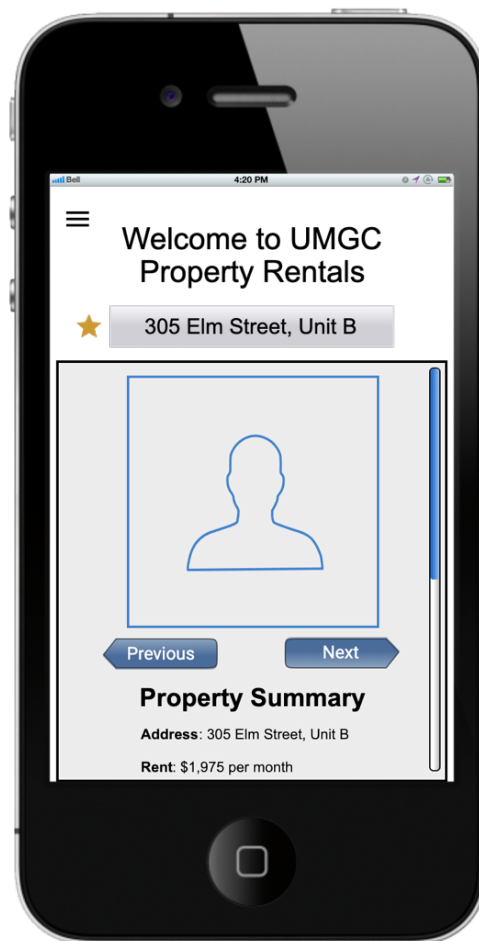
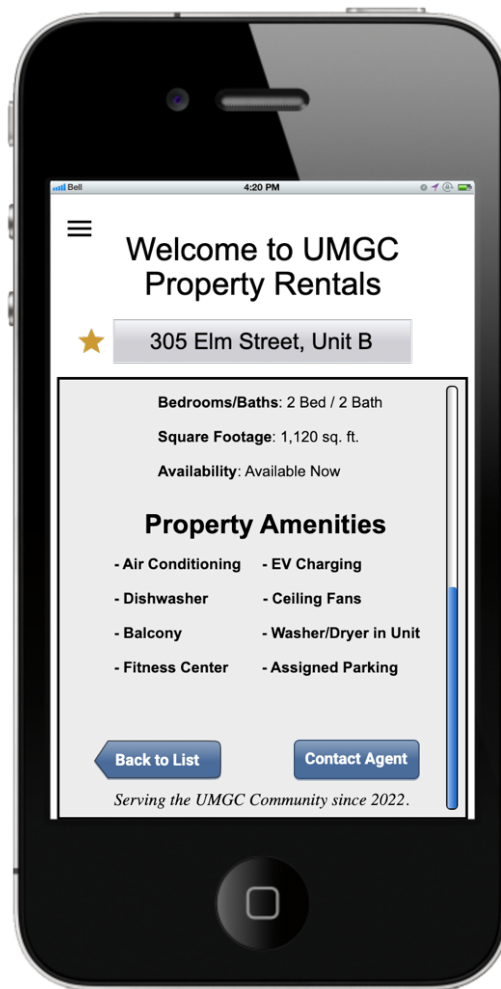


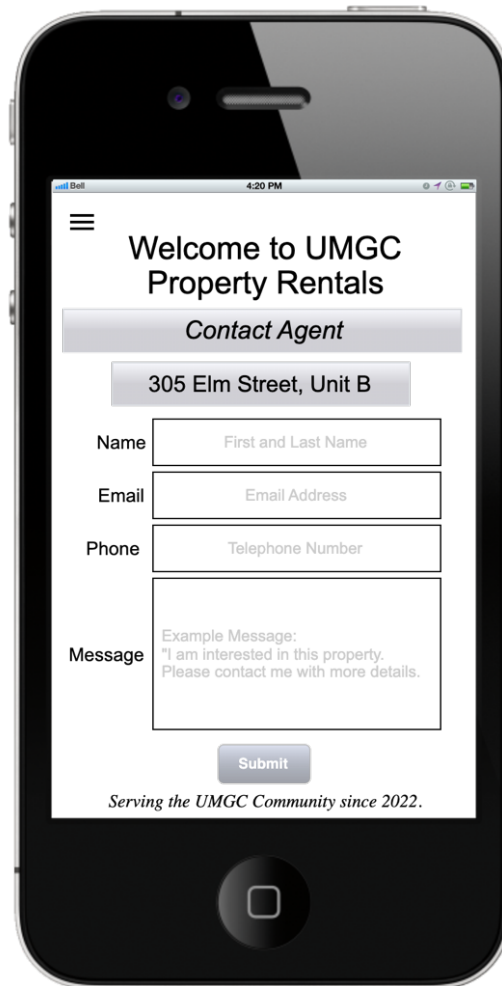
Figure 69 – Property Detail Summary





*Figure 70 – Property Amenities & Actions*





4:20 PM

☰

## Welcome to UMG Property Rentals

*Contact Agent*

305 Elm Street, Unit B

Name

Email

Phone

Message 

Example Message:  
"I am interested in this property.  
Please contact me with more details."

*Serving the UMG Community since 2022.*

*Figure 71 – Contact Agent Form*



4:20 PM

Wellcome to UMGC  
Property Rentals

Contact Agent

Name [ ]

Email [ ]

Phone [ ]

Message

Missing / incorrect Fields

Please fill in all required fields.  
Correct highlighted areas to  
continue.

OK

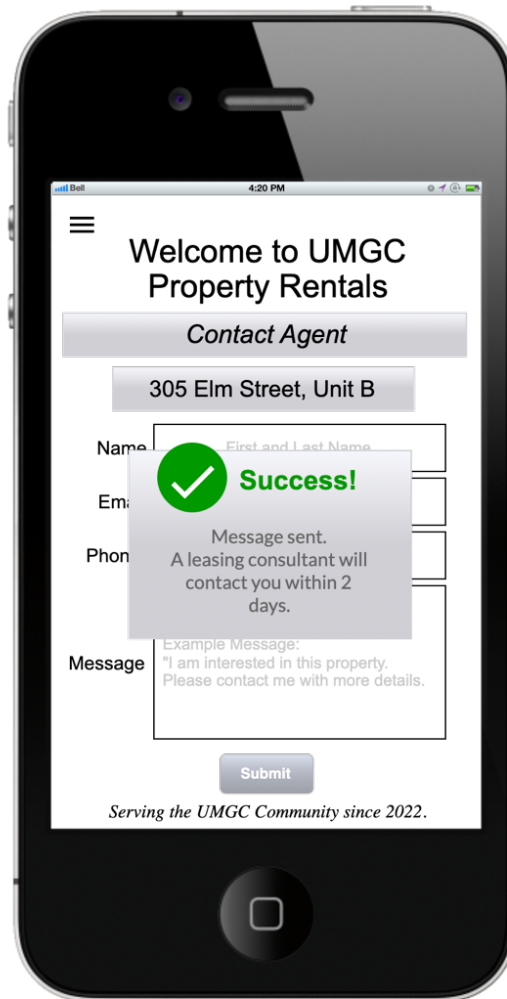
Example Message:  
"I am interested in this property.  
Please contact me with more details."  
Ensure to add the property name  
and/or address

Submit

Serving the UMGC Community since 2022.

*Figure 72 – Contact Agent Form (Validation Error – Missing or Incorrect Fields)*





*Figure 73 – Contact Agent Form (Submission Confirmation)*



**Internal UI Functionality**

- Scrollable Sections: Displays images, address, rent, and amenities in vertically scrollable format.
- Swipeable Photo Area: Allows left/right swipe for “*Next*” and “*Previous*” navigation through the gallery.
- Persistent Contact Agent Button: Anchored at the bottom for quick access to the inquiry form.
- Inquiry Form Modal
  - Fields include Name, Email, Telephone, and Message.
  - On submission, validates required fields and email format.
  - Displays an Error Popup if validation fails.
  - Displays a Confirmation Popup when submission succeeds.
- Back to List Button: Returns the user to the Property List screen without losing search context.

**External UI Functionality**

- Dynamically retrieves property data (images, rent, description, amenities) from the UMGC Rentals database.
- The Contact Agent form auto-fills the property’s name and address before submission.
- Successfully submitting the form sends an inquiry message to UMGC’s leasing staff.
- Popups display confirmation feedback to assure the renter their message was delivered.
- The app automatically refreshes if property information changes in the central system.



## Error and Confirmation States

- Validation Error – Missing or Incorrect Fields
  - Triggered by: Pressing Submit with one or more required fields left empty or incorrectly formatted.
  - Popup Title: Missing / Incorrect Fields
  - Visual Elements
    - Red warning icon
    - Message Text

*“Please fill in all required fields.  
Correct highlighted areas to continue.”*
    - OK button (closes popup).
    - Field labels (e.g., Name, Message) turn red, and input borders are outlined in red for visibility.
- Submission Confirmation
  - Triggered by: Pressing Submit when all entries are valid.
  - Popup Title: Success
  - Message Text

*“Message Sent Successfully  
Your inquiry has been submitted to our leasing staff. A representative will contact you soon.”*
  - Green checkmark icon displayed.
  - OK button closes the popup and returns to the Property Detail View.
  - Inquiry is logged in backend records with timestamp and property ID.



### 2.3.4 Contact/Inquiry Screen

The *Contact/Inquiry Screen* enables renters to directly reach UMGC Property Rentals staff with questions or requests for more information. The mobile-friendly layout is intentionally minimal, reducing cognitive load and supporting efficient interaction on small screens. Essential fields—Name, Email, Phone, and Message—are clearly labeled and spaced for touch input to ensure accuracy. After submission, an on-screen confirmation message reassures users that their inquiry has been received, enhancing trust and usability.

**Screen Name:** Mobile Inquiry

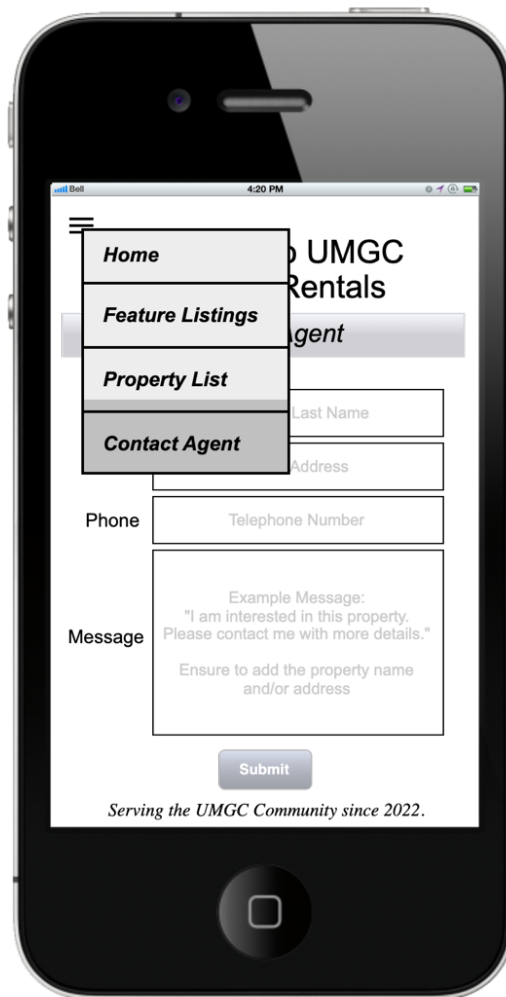
**Images**

The image shows a mobile phone screen with the following layout:

- Header: "Welcome to UMGC Property Rentals"
- Button: "Contact Agent"
- Form Fields:
  - Name: "First and Last Name"
  - Email: "Email Address"
  - Phone: "Telephone Number"
  - Message: "Example Message: 'I am interested in this property. Please contact me with more details.' Ensure to add the property name and/or address"
- Submit Button: "Submit"
- Footer: "Serving the UMGC Community since 2022."

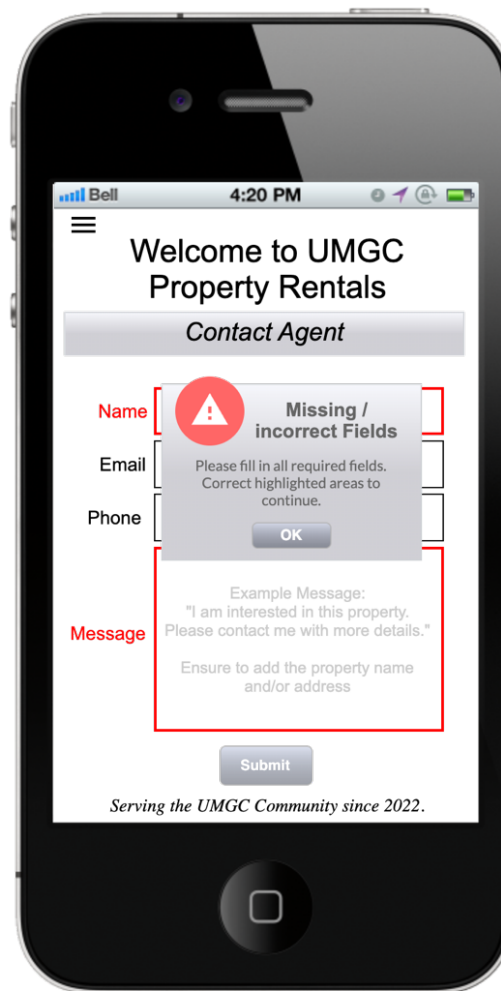
*Figure 74 – Mobile Contact Inquiry Page (Main Form)*





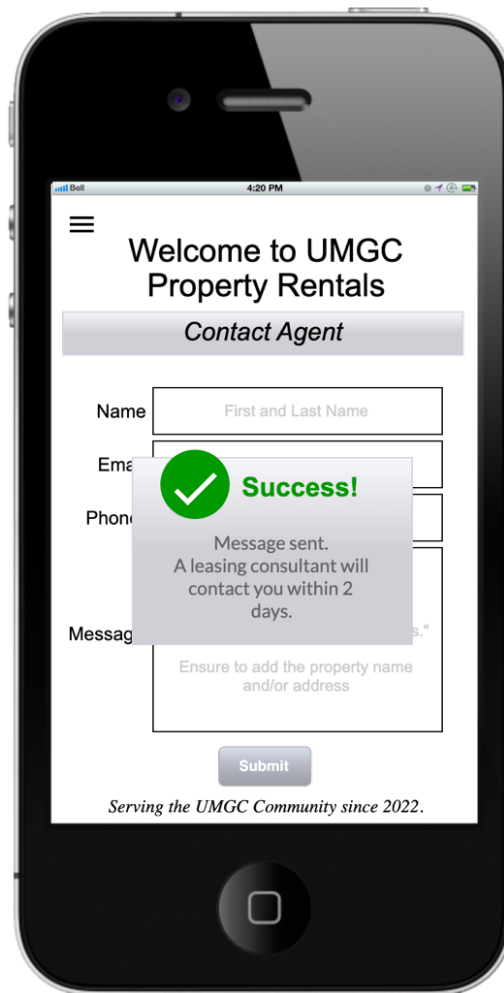
*Figure 75 – Mobile Contact Inquiry Page (Menu Expanded)*





*Figure 76 – Mobile Contact Inquiry Page (Validation Error – Missing or Invalid Information)*





*Figure 77 – Mobile Contact Inquiry Page (Confirmation)*



**Internal UI Functionality**

- Compact Layout: Single-column structure optimized for thumb reach and mobile ergonomics.
- Input Fields: Name, Email, Phone, and Message are required for submission.
- Field Validation
  - Validation ensures required fields are not left blank.
  - Email format is automatically checked before submission.
  - When validation fails, a popup alert appears (see Error and Confirmation States).
- Submit Button
  - Disabled until all required fields pass validation.
  - Triggers either a validation alert or a confirmation popup.
- Navigation: Hamburger menu allows quick return to Home, Property List, or Featured Listings.

**External UI Functionality**

- Sends inquiry data directly to *UMGC Property Rentals* through secure API integration.
- Displays a visual confirmation message upon successful submission.
- Clears all input fields after confirmation to prepare for future inquiries.
- Synchronizes inquiry logs with backend systems for follow-up tracking.
- Maintains real-time connectivity to ensure accurate property identification and message delivery.



## Error and Confirmation States

- Validation Error – Missing or Invalid Information
  - Triggered by: Pressing Submit when one or more required fields are empty or contain invalid input.
  - Popup Title: Missing or Invalid Information
  - Message Text

*“Please fill in all required fields.  
Correct highlighted areas to continue.”*

    - Button: OK
  - Visual Indicator
    - Highlighted fields (Name, Email, or Message) outlined in red.
    - Corresponding field labels display in red text for emphasis.
- Submission Confirmation
  - Triggered by: Pressing Submit when all input passes validation.
  - Popup Title: Message Sent Successfully
  - Message Text

*“Your inquiry has been sent to UMGc Property Rentals.  
A leasing representative will contact you shortly.”*

    - Button: OK
  - Visual Indicators
    - Green checkmark icon.
    - Popup dismisses automatically after acknowledgment.
    - Form resets to blank state.



## 2.4 User Interface Styling Guide

This section defines the visual standards applied across all *UMGC Property Rentals* interfaces to ensure consistency, readability, and brand alignment. It specifies the color palette, typography, and iconography used throughout the desktop, web, and mobile platforms.

### Color Palette

| Element   | Color Name | Hex Code | Usage   |
|-----------|------------|----------|---|
| Primary   | UMGC Blue  | #003366  | Headers, primary buttons, top navigation bars |
| Secondary | Gold       | #FFD700  | Featured listings, highlights, star icons     |
| Accent    | Light Gray | #F2F2F2  | Background panels, data cards                 |
| Error     | Red        | #CC0000  | Validation messages, delete confirmations     |
| Success   | Green      | #009900  | Save confirmations, success pop-ups           |

### Typography

- Font Family: Arial / Helvetica / Sans-serif
- Headings: Bold, 18–24 pt depending on hierarchy
- Body Text: Regular, 12–14 pt
- Line Spacing: 1.2x height for optimal readability.
- Labels and Buttons: All caps, 12 pt, medium weight



## Icons and Buttons

- Icons are sourced from a consistent, modern UI library (e.g., Font Awesome or Material Design) to ensure scalability and cross-platform rendering consistency.
- Button colors convey intent:
  - Green = Confirm / Save
  - Red = Cancel / Delete
  - Blue = Add / Edit
- Hover and focus states darken by approximately 10% to indicate interaction.
- All buttons include accessible labels and color contrast ratios compliant with WCAG 2.1 standards.

## Layout and Spacing

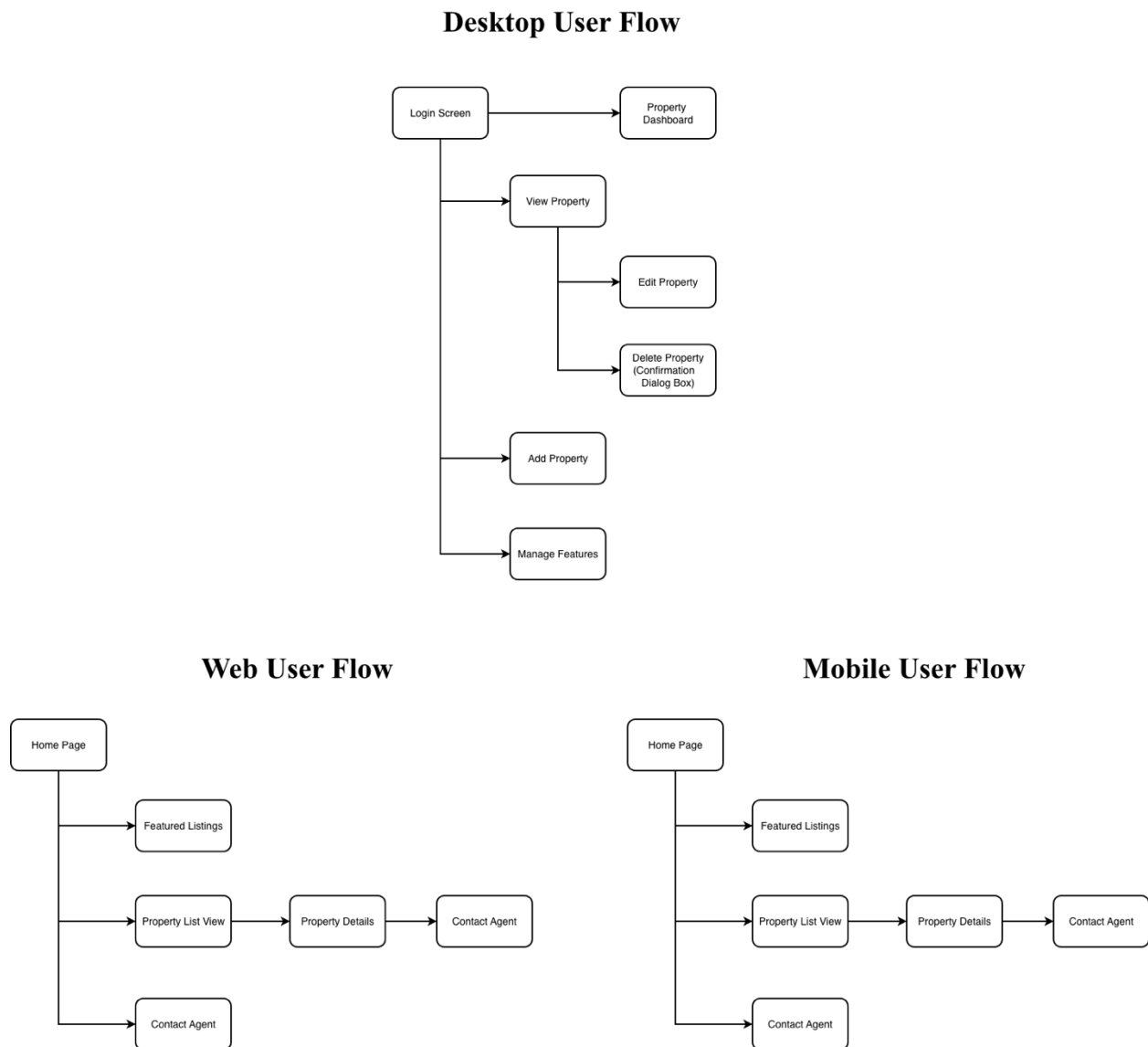
- Minimum padding: 12 px on all content containers.
- Minimum 16 px spacing between interactive elements.
- Form fields align left with a minimum 10 px gutter between labels and input areas.

**Note:** Some mockups appear in grayscale due to Pencil's limited color export options. The intended on-screen color scheme adheres to the palette defined above.



## 2.5 Navigation flow diagram (Comprehensive)

The following consolidated diagram illustrates how all three platforms—desktop, web, and mobile—connect to provide a cohesive user experience across the *UMGC Property Rentals* system.



*Figure 78 – Comprehensive User Flow*

This overarching flow demonstrates that data consistency and shared functionality exist across all platforms while maintaining separate user experiences optimized for their respective audiences.



The graphical interface designs for the desktop, web, and mobile applications of *UMGC Property Rentals* demonstrate a unified commitment to usability, accessibility, and consistency across all platforms. Each interface was developed to address the specific needs of its intended users while maintaining a cohesive visual identity and interaction model. Collectively, these designs support efficient task completion and promote a clear, intuitive workflow for both office staff and renters. This comprehensive approach ensures that every interaction aligns with established usability principles and accessibility standards. The following section examines how Jakob Nielsen's *10 Usability Heuristics for User Interface Design* were applied throughout the design process to enhance clarity, minimize errors, and promote an inclusive, user-centered experience.



### 3. Heuristic Design Considerations

The user interface designs for UMGc Property Rentals were developed in alignment with Jakob Nielsen's (2024) *10 Usability Heuristics for User Interface Design*. Each heuristic informed the layout, interaction flow, and functionality decisions across the desktop, web, and mobile platforms. By grounding every design choice in these principles, the project ensures that both staff and renter interfaces remain intuitive, consistent, and efficient. The following list summarizes how each heuristic was incorporated into the design process and interface elements:

1. **Visibility of System Status** – Users receive real-time feedback through progress indicators, confirmation pop-ups, and loading messages when performing actions such as saving or submitting data.
2. **Match Between System and the Real World** – The interface uses familiar real estate terms (e.g., “Bedrooms”, “monthly rent”, “features”) and organizes information in a natural, property-focused manner.
3. **User Control and Freedom** – Undo, cancel, and back options allow users to correct mistakes or exit tasks without losing progress.
4. **Consistency and Standards** – Common icons, button placements, and interaction styles are maintained across all platforms for predictability.
5. **Error Prevention** – Input validation, required field indicators, and confirmation dialogs reduce data-entry mistakes before submissions.
6. **Recognition Rather than Recall** – Visible labels, dropdown lists, and filter menus minimize the need for users to remember information between screens.
7. **Flexibility and Efficiency of Use** – Features such as search filters, quick navigation buttons, and saved searches enable both new and experienced users to interact efficiently.
8. **Aesthetic and Minimalist Design** – Clean layouts and consistent color schemes keep the focus on essential property details without unnecessary visual clutter.
9. **Help Users Recognize, Diagnose, and Recover from Errors** – Clear, consistent error messages in plain language explain problems and suggest corrective actions.
10. **Help and Documentation** – Contextual help icons, tooltips, and accessible support links assist users when clarification or additional guidance is needed.



Collectively, these heuristics ensure that the *UMGC Property Rentals* interfaces are intuitive, efficient, and accessible. They support a positive user experience across all devices and reinforce the system's commitment to user-centered design.



### 3.1 Accessibility and Responsive Design

The *UMGC Property Rentals* interfaces were designed to comply with the Web Content Accessibility Guidelines (WCAG) 2.1 Level AA, ensuring inclusivity and usability for individuals with diverse abilities and technologies. The design emphasizes equal access by incorporating multiple forms of feedback, high contrast visuals, and adaptive layouts that perform consistently across devices.

#### Accessibility Features

- **Keyboard Navigation**

All interactive components, including buttons, menus, and form fields, support logical keyboard navigation using Tab and Enter keys. Focus order follows a predictable sequence to maintain usability and accessibility.

- **Alternative Text and ARIA Labels**

Images and icons include descriptive alternative text and ARIA labels following WAI-ARIA best practices to enhance screen reader compatibility.

- **Form Validation**

Validation messages use plain, human-readable language (e.g., “*Please enter a valid ZIP Code.*”) to improve comprehension for all users.

- **Color Contrast**

Text and background color contrast meet a minimum ratio of 4.5:1 for standard text and 3:1 for large text, satisfying WCAG readability requirements.

- **Focus Indicators**

Visible focus outlines remain active for users relying on keyboard or assistive navigation, ensuring orientation and control at all times.



## Responsive Design

- **Adaptive Layouts**

Interfaces automatically adjust to different screen sizes and orientations:

- **Desktop/Web:** 16:9 widescreen layout with multiple content columns.
- **Tablet:** Two-column adaptive layout.
- **Mobile:** Single-column scrollable layout optimized for touch.

- **Touch Targets**

Buttons maintain a minimum interactive area of  $44 \times 44$  px with at least 8 px spacing between touch targets for accuracy and ease of use.

- **Navigation Menus**

Navigation collapses into a hamburger icon on smaller devices to conserve screen space while maintaining full accessibility.

- **Responsive Text and Icons**

Typography and icons scale dynamically to preserve visual balance, legibility, and hierarchy across all resolutions and orientations.

By prioritizing accessibility and responsive behavior, the design ensures that all users—regardless of device, ability or context — can interact with the *UMGC Property Rentals* system seamlessly and effectively.



### 3.2 Interactive Feedback and Micro-Interactions

Micro-interactions are small, purposeful interface responses that guide user behavior and reinforce the system's responsiveness. They provide subtle visual and auditory cues that communicate progress, acknowledgment, and change of state. These interactions bridge the gap between user input and system feedback, helping users feel in control and confident as they perform actions such as submitting forms, saving data, or navigating menus. The following interactions were intentionally incorporated throughout the *UMGC Property Rentals* desktop, web, and mobile interface designs to create a smoother, more engaging user experience.

- **Button Feedback:** Buttons darken slightly when pressed or tapped, confirming user interaction and preventing duplicate clicks.
- **Form Submission Animation:** A brief spinner icon (approximately one second) appears during saving or message submission, visually signaling that the system is processing the request.
- **Menu Transitions:** The mobile navigation slides smoothly from the left edge of the screen, maintaining visual continuity and reducing perceived motion abruptness.
- **Hover Tooltips:** Desktop icons display short descriptions (for example, “*Edit Property*” or “*Delete Listing*”) to enhance recognition and reduce memory load.
- **Notification Fade:** Success or error banners appear briefly — approximately two seconds — and fade out automatically, preventing clutter while ensuring acknowledgment of system status.

Collectively, these micro-interactions foster trust and satisfaction by offering real-time, context-appropriate feedback. They improve task flow, reduce uncertainty, and subtly humanize the interface by making system behavior predictable and responsive. These enhancements ensure that users receive immediate, intuitive feedback on every action, reinforcing a consistent, user-centered experience.



## 4. Conclusion

This document outlines the complete user interface design specifications for the *UMGC Property Rentals* multi-platform system. The desktop, web, and mobile designs emphasize usability, accessibility, and visual consistency across all devices. Each interface enables users to complete tasks efficiently while maintaining a cohesive and intuitive visual experience. The design process and resulting prototypes adhere to Jakob Nielsen's *10 Usability Heuristics for User Interface Design*, ensuring the final system delivers clarity, user control, and a positive, confidence-inspiring user experience.



## Appendix A – Summary Of Design Enhancements

This appendix provides an overview of the key improvements made throughout the UMG Property Rentals user interface design documentation. Each enhancement area reflects iterative refinements that improve usability, accessibility, consistency, and overall user experience across desktop, web, and mobile platforms. The table below maps each improvement to its corresponding section for easy reference.

| Improvement Area           | Enhancement Added   | Section            |
|----------------------------|---|--------------------|
| UI Consistency             | Added standardized style guide with defined palette, typography, and layout standards | 2.4                |
| Navigation Clarity         | Added individual and comprehensive navigation flow diagrams                           | 2.1, 2.2, 2.3, 2.5 |
| Accessibility              | Added WCAG compliance and responsive design notes                                     | 3.1                |
| Error Handling             | Added confirmation and error message mockups  | 2.1.4 – 2.2.5      |
| Interactivity              | Added micro-interactions and feedback mechanisms                                      | 3.2                |
| Documentation Completeness | Clarified grayscale mockup note for color intent                                      | 2.4                |



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