

Real Estate Business Website - RR Developers

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Annotation

This paper documents the design, implementation, and evaluation of a professional real-estate website for R R Developers, created to improve online visibility, generate leads, and support digital marketing. The project used WordPress, Elementor, custom HTML/CSS/JavaScript, and SEO tooling (Rank Math, Google Search Console) to deliver a responsive, conversion-focused site. The study reports implementation choices, performance and lead-capture outcomes, testing strategy, and recommendations for future enhancements such as CRM integration and immersive property tours. **From the project document:** “RR Developers wanted a professional website to bring their real estate business online, improve visibility, and support digital marketing efforts.” This sentence summarizes the client need that motivated the work.



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1. Introduction and Literature Context

Problem statement. Small and mid-sized real-estate developers often lack a centralized, professional digital presence; this reduces discoverability, fragments lead capture, and weakens buyer trust. R R Developers faced these exact challenges and commissioned a website to act as a 24/7 virtual office and lead engine.

Research objective. The objective was to design and evaluate a maintainable, SEO-friendly website that showcases property portfolios (residential flats, society plots, row houses, farmhouses), captures qualified inquiries, and improves operational lead handling.

Context and related practice. Best practice for real-estate websites emphasizes mobile-first design, fast load times (Core Web Vitals), structured data for listings, and short speed-to-lead workflows (instant notifications + CRM). WordPress with a page builder (Elementor) is a common, cost-effective platform for rapid deployment and client autonomy; SEO plugins (Rank Math) and form plugins (Forminator) provide essential indexing and lead capture features.

2. Methodology and System Design

2.1. Research Approach

This is a **design-science case study**: build an artifact (the website), measure technical and operational outcomes, and reflect on lessons learned. Data sources included project artifacts (wireframes, content), server logs, form entries, and manual usability tests.

2.2. Functional and Non-functional Requirements

Functional: property listing management; search and filters; inquiry capture; WhatsApp and call integration; admin content management.

Non-functional: mobile responsiveness; page load < 3s on typical mobile networks; secure form handling; SEO-ready markup and sitemaps.

2.3. High-level Architecture

Presentation layer: Elementor-built pages with custom HTML/CSS/JS for carousels, 3D viewer hooks, and interactive property cards.

Application layer: WordPress core, Rank Math (SEO), Forminator (forms), SMTP for reliable email delivery.

Data layer: MySQL (standard WordPress tables plus custom tables for properties, images, and inquiries). The project implemented a normalized schema for categories, properties, property_images, and inquiries to support filtering and reporting.

2.4. Data Flow

Browse/Search: user → frontend filters → SQL query → results.

Lead capture: Forminator → validation → saved to forminator_entries and custom inquiries table → email + WhatsApp notification to sales rep.

SEO sync: Rank Math generates sitemaps → Google Search Console crawls and indexes pages.

3. Implementation and Optimization

3.1. Development Phases

Months 1–2 (Planning & Content): requirement analysis, wireframes, and SEO content generation using AI tools for draft copy; logo and brand palette finalized.

Months 3–4 (Core Development): WordPress setup, Elementor templates, header/footer, homepage with JavaScript carousel and 3D design sections.

Months 5–6 (Integration & Launch): Forminator integration, WhatsApp/call floating buttons, Rank Math configuration, caching and image optimization, final testing and client approval.

3.2. Key Technical Decisions and Rationale

Platform choice: WordPress + Elementor for maintainability and client editing capability.

SEO tooling: Rank Math for automated sitemaps, schema (RealEstateListing), and meta management.

Forms and lead flow: Forminator to persist entries and enable export to CRM; immediate notifications via WhatsApp to reduce speed-to-lead.

Performance: convert images to WebP, lazy load media, enable page caching and CDN where available; custom JS minimized and deferred.

3.3. Database and Query Examples

A normalized schema was implemented with tables for categories, properties, property_images, and inquiries. Example queries used for the site:

Advanced search with featured image:

Sql

```
SELECT p.id, p.title, p.price, p.location, i.image_url
```

```
FROM properties p
```

```
LEFT JOIN property_images i ON p.id = i.property_id AND i.is_featured = TRUE
```

```
WHERE p.status = 'Available'
```

AND p.price BETWEEN 2000000 AND 5000000

AND p.location LIKE '%Mulshi%'

AND p.category_id = 2

ORDER BY p.price ASC;

Leads by category report:

Sql

```
SELECT c.name AS category_name, COUNT(l.id) AS total_leads
```

```
FROM categories c
```

```
JOIN properties p ON c.id = p.category_id
```

```
LEFT JOIN inquiries l ON p.id = l.interested_property_id
```

```
GROUP BY c.name
```

```
ORDER BY total_leads DESC;
```

4. Testing, Results, and Discussion

4.1. Testing Strategy

Unit tests: validate SQL queries and backend functions (e.g., inquiry persistence).

Integration tests: ensure frontend forms communicate with backend and email/WhatsApp notifications trigger.

Functional tests: property filtering, status updates (Available → Sold), image handling.

Performance tests: page load under simulated 4G; search queries on large datasets to validate indexing and SQL indexes.

UAT: visual accuracy of 3D renders, mobile dialer behavior for call buttons, and map coordinates.

4.2. Measured Outcomes

Performance: after optimization, key pages loaded under 3 seconds on 4G emulation; Core Web Vitals improved through image optimization and caching.

Lead capture: forms reliably saved entries to forminator_entries and custom inquiries table; immediate notifications reduced first-response time in pilot tests.

SEO & Indexing: sitemaps submitted via Rank Math; initial indexing of core pages observed in Search Console; early impressions for hyper-local queries began appearing (longer-term monitoring required).

Usability: mobile-first layout and clear CTAs improved engagement in usability sessions; property cards increased click-through to detail pages.

4.3. Limitations

Short evaluation window: organic SEO gains require months; current search visibility is preliminary.

Training data for advanced features: any AI/ML features (e.g., recommendation engines) would require sufficient historical lead and behavior data.

Competition: large property portals retain strong domain authority; independent sites must focus on hyper-local, high-intent queries.

5. Conclusion and Future Work

Conclusion. The R R Developers website converted a fragmented offline presence into a centralized, SEO-ready digital asset that supports lead generation and brand credibility. The combination of WordPress, Elementor, Rank Math, and Forminator provided a pragmatic balance between customization and maintainability. **From the project document:** “*Project Objective: To showcase projects professionally, build customer trust, generate inquiries, and create a strong online presence.*” This statement encapsulates the project’s success criteria and final outcome.

Recommendations and future enhancements.

CRM integration: connect form entries to a CRM (HubSpot, Zoho, or Salesforce) to enable lead scoring, automated follow-ups, and conversion analytics.

A/B testing: run experiments on CTAs, hero images, and form placements to quantify conversion lift.

Immersive media: implement 360° virtual tours and AR/VR walkthroughs for premium listings to increase engagement and remote conversion.

Analytics & predictive scoring: apply simple ML models to historical lead data to prioritize high-propensity prospects.

Content program: expand hyper-local landing pages and neighborhood guides to capture long-tail search traffic.

References

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3. **Tanenbaum A. S., Wetherall D. J.** *Computer Networks*. Pearson, 2011.
4. **Project artifacts:** R R Developers project documentation and implementation notes (site: www.rohanrathoddevelopers.com).