Navigation Enhancements Technical Report

Project: theme01-builder

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Overview

Summary of navigation-focused enhancements delivered across six tasks, including implementation highlights and validation notes.

Task 1 – NAV-ROUTER: Integrate Client Router

Highlights:

- Introduced React Router v6 wrappers (`RouteProvider`, `AppRoutes`) to host the builder inside a client router.
- Blueprint context now respects router availability, delegating navigation to React Router while retaining a legacy fallback.
- BuilderShell hydrates blueprints from `window.location.pathname`, synchronising history state with internal navigation.

Key Files:

- src/main.tsx
- src/App.tsx
- src/theme01/foundation/renderer/Renderer.tsx

Verification:

- npm run test

Task 2 – NAV-PAGE-REGISTRY: Register Pages

Highlights:

- Defined `RouteNavItem`/`UrlNavItem` union types and a `BlueprintTree` alias for stored page snapshots.
- Seeded registry entries (`about`, `docs`, `404`) and exposed `resolvePage`, `resolveNotFoundPage`, and `usePage` helpers.
- Verified resolver behaviour for known, unknown, and 404 slugs via unit tests.

Key Files:

- src/theme01/foundation/route/pageRegistry.ts
- src/theme01/foundation/types.ts
- src/theme01/foundation/__tests__/pageRegistry.test.tsx

Verification:

- npx vitest run src/theme01/foundation/__tests__/pageRegistry.test.tsx

Task 3 – NAV-NAVBAR: NavBar Component

Highlights:

- Rebuilt `NavBar` to render `NavLink` for internal targets and anchors for external links, attaching `data-active` markers.
- Added keyboard activation (Enter/Space) and preserved accessible focus management.
- Covered click, keyboard, and external-link behaviour with focused tests.

Key Files:

- src/theme01/foundation/renderer/Renderer.tsx
- src/theme01/foundation/__tests__/navbar.test.tsx

Verification:

- npx vitest run src/theme01/foundation/__tests__/navbar.test.tsx

Task 4 – NAV-ACTIVE-STYLE: Active/Hover States

Highlights:

- Extended nav token mapping to emit hover and focus-visible utility classes for consistent visual feedback.
- Updated navbar tests to assert focus styling on internal and external nav items.

Key Files:

- src/theme01/foundation/renderer/Renderer.tsx
- src/theme01/foundation/__tests__/navbar.test.tsx

Verification:

- npx vitest run src/theme01/foundation/__tests__/navbar.test.tsx

Task 5 – NAV-404: Fallback Route

Highlights:

- Added a themed 404 blueprint and registry entry, plus helper accessors.

- Refactored routing into `AppRoutes`, redirecting unknown paths to `/404` when available.

- BuilderShell now hydrates the 404 blueprint before falling back to the legacy scaffold.

Key Files:

- src/theme01/blueprint/examples.ts

- src/theme01/foundation/route/RouteProvider.tsx

- src/App.tsx

Verification:

- npx vitest run src/theme01/foundation/__tests__/routeProvider.test.tsx

Task 6 – NAV-DEEPLINK-E2E: Deep Links & History

Highlights:

- Added history-driven tests using `HistoryRouter` to confirm back/forward navigation across slugs.

- Smoke-tested direct loads for every registered slug (including `/`, `/about`, `/docs`, `/404`).

Key Files:

- src/theme01/foundation/__tests__/routeProvider.test.tsx

- package.json (history dev dependency)

Verification:

- npx vitest run src/theme01/foundation/__tests__/routeProvider.test.tsx

Testing Summary

Executed `npm run test` after each task; the suite now includes registry, navbar, route provider, renderer, store, and fuzz tests. All tests pass.

Dependencies

- Runtime: `react-router-dom@^6.30.1`.

- Dev: `@testing-library/react@^16.3.0`, `history@^5.3.0`, `reportlab` (for documentation tooling).

Recommendations

- Publish Storybook entries for the 404 blueprint and navigation states.

- Extend real-browser E2E coverage (e.g., Playwright) if additional assurance is required.

Prepared for: Team Lead Review