

An effective AI assistant for German home renovations should guide homeowners through a structured, end-to-end workflow that reduces uncertainty, enforces compliance, and optimizes costs and funding. The stages below outline the process and key decision points the assistant should support, aligned with your project scope and course

## **Intake and goal setting**

- Collect property basics (location, year built, size, ownership, occupancy) and user goals (comfort, safety, resale value, energy savings, timeline, budget) to tailor guidance and eligibility
- Surface constraints early: heritage status, apartment vs. single-family, multi-owner consent (WEG), and whether occupants can vacate during works

## **Baseline assessment**

- Help the user compile existing documents: floor plans, past permits, energy certificate, photos; generate a structured “current state” record to reuse across steps.image.jpg+1
- Provide a quick diagnostic to flag common old-building risks (moisture, electrical load, asbestos/lead, structural settlement) and recommend expert inspections where needed.

## **Scope definition and prioritization**

- Translate goals and issues into a scope of works across envelope, heating/ventilation, electrical/plumbing, interiors, and accessibility; mark dependencies and seasonal constraints.
- Prioritize with a decision aid: safety/compliance first, then damage prevention, then energy/comfort upgrades, then cosmetics; show trade-offs among cost, savings, and disruption.

## **Budgeting and cost control**

- Generate itemized cost ranges by measure and region, including soft costs (planning, permits, waste, scaffolding) and contingency; track budget vs. scope in real time.
- Detect hidden-cost risks (e.g., outdated wiring behind walls) and recommend contingency percentages and investigative openings before final quotes.

## **Permits and legal compliance**

- Map required permits, notifications, and technical standards based on scope and location; list required drawings, certificates, and sequencing to avoid illegal starts.
- Create a compliance checklist with due dates, responsible parties, and document templates for submissions and inspections.

## **Incentives and financing**

- Match each planned measure to BEG/BAFA grants and KfW loans, checking timing rules (apply before start), expert confirmations, and stackability; compute expected grant/repayment-subsidy impacts on net cost.
- Provide financing options (bank renovation loans, mortgage top-ups, KfW programs) with required documentation and an exportable lender package.

## **Vendor discovery and procurement**

- Generate trade-by-trade contractor shortlists, request-for-quote templates, and comparable bill-of-quantities; normalize bids for apples-to-apples review.image.jpg+1
- Score bids on cost, availability, warranty, certifications, and references; flag unusually low or incomplete offers to reduce change-order risk.

## **Planning and scheduling**

- Build a dependency-aware schedule across trades, factoring lead times for windows/heat pumps, permit approval windows, and seasonal weather; auto-adjust when dates slip.
- Prepare site-readiness and occupant logistics plans (temporary heating/water, dust control, access) to minimize disruption.

## **Execution support and quality control**

- Provide daily/weekly task lists, acceptance criteria, and photo checklists per trade; capture site logs, variations, and approvals to maintain audit trails.image.jpg+1
- Automate invoice capture, contract compliance checks, and progress-based payment approvals; verify that funded measures meet technical specs needed for grants.

## **Commissioning, documentation, and claims**

- Guide final inspections, commissioning tests, and defect lists; ensure manuals, warranties, and as-built drawings are archived.image.jpg+1
- Assemble the funding “proof-of-use” package and submit within deadlines; prompt for missing expert confirmations and certificates required for disbursement.

## **Post-renovation optimization and insurance**

- Recommend energy-usage monitoring and fine-tuning of controls; schedule maintenance for heat pumps/ventilation and envelope checks to preserve efficiency gains.image.jpg+1
- Review insurance updates from construction to occupancy, ensuring coverage transitions and documenting risk mitigations that may reduce premiums.

## **Cross-cutting assistant capabilities**

- Personalization: Context-aware tips based on building age, region, and user priorities; multilingual prompts and plain-language summaries of technical/legal steps.
- Compliance guardrails: Pre-start checks that block risky actions (e.g., signing unconditional contracts before grant/loan commitment) and alerting on permit lapses.
- Evidence and export: One-click export of application bundles (grants/loans), contractor packs, and professor-ready progress summaries to support coursework and audits.