Vietnam Action Plan: Home Automation Project

Purpose: structured, location-independent progress while Raspberry Pi remains in the UK.

Phase 1 – Project & Repository Setup

1. Create a GitHub repository with clear folder structure.
2. Add documentation folder and upload system blueprint PDF.
3. Write a concise README describing goals, architecture, and safety approach.

Phase 2 – Offline Home Assistant Logic

1. Write Home Assistant YAML automations using placeholder entities.
2. Focus on sleep mode, motion lighting, Garmin button webhooks, and morning routines.
3. Add comments explaining design decisions and intent.

Phase 3 – Hardware Prototyping

1. Purchase ESP32 boards and sensors (PIR, CO■, pressure).
2. Wire and flash ESPHome firmware locally.
3. Test sensor readings and tune thresholds via logs.

Phase 4 – Standalone Logic Development

1. Write Python modules to process sensor data (noise filtering, thresholds).
2. Simulate sensor input and validate logic with tests.
3. Prepare logic for later porting into Home Assistant.

Phase 5 – Garmin Integration Planning

1. Define Garmin watch button mappings and intent.
2. Write webhook-based Home Assistant automations.
3. Document manual overrides and safety behaviour.

Phase 6 – Morning Display Design

1. Design a passive morning dashboard layout.
2. Select data sources: sleep, calendar, environment, heating.
3. Document layout sketches or mockups.

Phase 7 – UK Deployment Preparation

1. Write a deployment checklist for pairing real devices.
2. List entity IDs to replace and automations to enable.
3. Plan final safety checks and testing.

Outcome

Upon returning to the UK, the project should be fully designed, documented, and partially implemented. The remaining work will focus on device pairing and final deployment rather than system design.