It's great to hear that you've moved forward with the project and have a detailed build plan. I'm happy to collaborate and provide some targeted insights based on the research and your team's brief. The STRYDA.ai concept is well-defined and clearly addresses the core pain points identified in my report.

Here is a breakdown of your key requests and some strategic input to help guide your development.

1. Scope Checks: Validating V1 & V2

The V1 and V2 product scopes you've outlined are strongly aligned with the identified needs of New Zealand builders. The market analysis revealed that the industry is struggling with a fragmented landscape of desktop-focused tools, opaque pricing, and a significant administrative burden associated with compliance and product information.[1] Your plan to build a genuinely mobile-first app that focuses on a "compliance safety net" and a voice-first interface directly tackles these issues.[2]

Key areas where your plan aligns with market gaps:

- **V1 Voice-first Q&A:** A core finding from research commissioned by BRANZ was that building control officers (BCOs) themselves envision an AI chatbot that can "find information as quickly as possible," such as verifying lintel sizes or material compatibility.[6] This indicates a strong, unfulfilled desire for a tool that can provide quick, cited answers, which is exactly the core value proposition of STRYDA.ai.[5]
- **V2 Product Finder:** Your V2 plan to include a product finder is particularly strategic given the government's recent policy to allow thousands of new overseas products into the market.[7] This change creates a new information problem for builders who need a fast, reliable way to vet these materials for compliance and specifications. Your product finder, which can scan a label or manual to auto-pull a PDF, would directly solve this contemporary industry challenge.[7]
- **V2 Offline Cache:** The research highlights that a lack of mobile support is a major frustration with many existing apps, forcing field workers to return to the office to input data.[2] Your plan to include an offline cache for code snippets and manuals directly addresses the practical reality of working on a job site with poor connectivity, a feature noted as a strength in a competitor, Raken's, offerings.[8]

The V1/V2 split seems robust. Your V1 focuses on the core, high-value problem of

instant, cited compliance answers, which is a powerful differentiator. The V2 features, particularly the Job Pack Generator and Offline Cache, build on this foundation to solve deeper, more complex workflow problems.

2. Source Mapping: Top NZ Documents

Based on the research, here are the top documents and data sets to prioritize for indexing:

- **Core Building Code & Standards:**
  - The **New Zealand Building Code** itself, which is contained in the Building Regulations 1992.[9]
  - **Acceptable Solutions and Verification Methods** from the Ministry of Business, Innovation and Employment (MBIE).[11]
  - **NZS 3604:2011** for timber-framed buildings, identified in the research as a key standard that BCOs would want an AI to check compliance against.[12]
- **Product Information:**
  - **Manufacturer installation manuals** for commonly used products, especially those mentioned in your brief like fireplaces, claddings, roofing, fixings, and wet-area systems.
- **Publicly Available Data:**
  - The **Licensed Building Practitioners (LBP) API** provides a list of all registered practitioners and could be used to verify credentials or populate user profiles.[13]
  - Council guidance pages are mentioned as a data source in your brief.[5] While fragmented, these could be useful for specific local requirements.

3. Question Taxonomy: Top Day-One Queries

Here are some "day-one" questions (by trade) that would be ideal for a pilot, derived from builder and council frustrations in the research:

- **Carpentry/Framing:**
  - "What size lintel do I need for this window opening in a timber-framed building?" (Requires: span, load, wood type).[6]

    - "How many dwangs/nogs do I need for this wall?" (Requires: stud height, bracing type).[5]
- **Cladding/Waterproofing:**
    - "Can I put this type of cladding on a building in a high wind zone?" (Requires: cladding product, wind zone).[5]
    - "What are the required flashing dimensions for a window penetration in this area?" (Requires: window size, wind zone, E2/AS1 table reference).[6]
- **Wet Areas/Plumbing:**
    - "Does E3/AS1 allow for a shower to be installed on a timber floor without a tray?" (Requires: subfloor type, location in building)
    - "What is the required waterproofing for this wet area in a residential bathroom?" (Requires: room size, material)
- **Fire & Safety:**
    - "What's the required clearance for a [brand name] fireplace from timber and gib?" (Requires: brand, model, material).[5]
    - "What are the fire rating requirements for a party wall between two units?" (Requires: building type, material)

4. Compliance Alternatives Library: Common Fail Cases

The concept of a "Compliance Alternatives Library" is a powerful one. Based on the research, here are some common fail cases to build out with compliant fallback patterns:

- **Hearth Clearances:** The product brief specifically mentions this, which is an excellent starting point.[5] The library could propose alternative hearth constructions, different lining materials, or adjusting clearances, with citations from the relevant NZS standards and manufacturer manuals.
- **Material Compatibility:** The research mentions questions about whether certain materials can be in contact with one another, such as in E2/AS1 Table 21.[6] A common fail case would be a material selection that violates this. The library could propose compliant alternative material combinations with specific references.
- **Non-compliant Designs:** The research highlights a case where a council's error in granting consent for a non-compliant home led to a dispute.[15] Your app could serve as a proactive check, for example, by suggesting a compliant stud height or retaining wall design if the user's prompt is ambiguous or falls outside the

standard.

5. Kiwi Voice Pack: ASR/TTS Recommendations

To achieve the "Kiwi tone" and "tradie lingo fluent" functionality in your voice system, you would need to prioritize a text-to-speech (TTS) and automatic speech recognition (ASR) pipeline that is either natively trained on or can be fine-tuned with a large corpus of New Zealand English, including regional slang and common abbreviations.[5] While the research doesn't name specific technologies, a platform like Vertex AI Agent Builder, which you already mention in the brief, can be used to create agents that can understand and respond with company-specific terminology.[16] The key would be to train the model on a proprietary dataset of New Zealand-specific terms and speech patterns.

6. Edge Cases: Identifying Ambiguous Specs

Your brief correctly identifies that the app should disclose uncertainty when the code is ambiguous.[5] This is a critical safety and liability feature. Based on the research, here are some edge cases where such a disclosure would be necessary:

- **Complex Disputes:** The legal and compliance landscape is fraught with ambiguity, such as the confusion between a Certificate of Compliance (CoC) and a Code Compliance Certificate (CCC).[17] The app should be careful to define these and other complex legal terms.
- **Council-Specific Requirements:** The research shows that a council's own processes can lead to errors, and that their obligations do not always extend to providing design solutions.[15] An AI agent should be trained to acknowledge that council-specific guidance might be needed in addition to a general code answer.
- **Evolving Regulations:** The Building Code is constantly evolving, with MBIE holding biannual reviews.[11] The app must be able to version-stamp its answers with the date of the document used, as your brief suggests, to prevent reliance on outdated information.[5]

7. Evaluation Plan: Proposing an Eval Set

Your proposal for a small evaluation set is a smart approach to ensuring the quality and precision of the AI's answers. You can use the "day-one" questions listed above as a starting point. For each question, you would define the expected answer, the specific clause or page number from the source document (e.g., NZS 3604:2011, Building Regulations), and the correct citation format.[5] This would allow for a clear, repeatable process to measure the accuracy and reliability of the AI agent.

Let me know if you would like me to expand on any of these points. I am here to help.

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