Building Futures: Sustainable Architecture Solution to South Africa's Housing Crisis Ivan Sandler, and Erin Angell

Introduction

Housing inequality has deep historical and economic roots, and rising living costs continue to exacerbate the issue in many regions. Traditional building methods fail to meet the demands of low-income communities, prompting a need for more effective solutions. This project investigates how sustainable architecture and material choices can reduce maintenance costs and improve living conditions, with a particular focus on cost-effectiveness and scalability. By identifying the core challenges faced by disadvantaged communities, the study highlights the promise of innovative, eco-friendly construction methods in tackling pressing housing shortages. **Research Methodologies** We used a qualitative mix of literature review and architect interviews to gauge the real-world viability of sustainable building methods. Case studies

of new builds and retrofits revealed how eco-focused strategies diverge from conventional practice. Thematic coding of interview data, plus secondary research, highlighted barriers such as policy hurdles, labor gaps, and material costs.

Housing Met vs. Housing Requests

Housing Requested 80%

Palo Alto High School

Housing Met 20%

Governm Collaborat Partnering with pu agencies, unlocking subsid and simplifying permits are v to scaling sustainable construction

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| Data & Findings | C |
|---------------------------------|-------|
| Sustainable housing cuts costs | Sust |
| and improves living through | hou |
| upcycled materials and | of li |
| community-led design. | air, |
| However, gaps in skilled labor, | gain |
| outdated regulations, and high | and |
| upfront costs remain key | wor |
| barriers. Expert insights | poli |
| suggest participatory models | road |
| can succeed—if backed by | ado |
| training, policy | the |
| reform, and lasting | com |
| support. | |
| | |

Implications and Next Steps

| 1 | 2 Skilled Leber |
|------------|------------------------|
| 上 . | Z. Skilled Labor |
| nent | Targeted training will |
| tion | grow the workforce |
| blic | needed to construct |
| lies, | and maintain greener |
| vital | and more sustainable |
| on. | structures. |
| | |

3. Community Engagement Working with I stakeholders k projects cultura relevant, afford and durable.



Conclusions and Analysis tainable architecture cuts ising costs and boosts quality ife—better insulation, cleaner and lower bills. Scaling these ns hinges on solving logistical financial bottlenecks like **kforce training and incentive** icies. Pilot projects offer a dmap for broader, cost-saving ption that turns eco-friendly ory into real munity impact.

4. Further Research Future studies should quantify cost savings across regions and refine models for different types of economic contexts.