

# ADDRESSING THE AFFORDABLE LIVING CHALLENGE IN SOUTH AFRICA

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Historic, economic and socio challenges resulted in a backlog of affordable housing in South Africa and Sub-Saharan Africa of more than 3.6 million and 44 million respectively. The current approach of realising living spaces is not solving the problem and the backlog is growing.

The knowledge, technology and resources for affordable housing are available but are applied in an isolated and fragmented way. This challenge has already been overcome in other industries, like manufacturing, by using an integrated approach by converting information about the challenges, the people and available technologies into useful solutions. Instead of focussing on construction solutions only, the iLima Africa Construction Innovation Platform (ACIP) provides a Socio-technical Engineering Solution that integrates the community parameters with advanced construction technology solutions.

The ACIP AI-Platform takes a complete lifecycle approach for the livable village exceeding 20 years. The village is like the acorn tree that needs to be correctly planted and nurtured to deliver the yield well into the future. The solution delivers the village at lower cost, shorter time, improved quality and better sustainability, while involving the community in decisions right from the start.

The approach is to Plan, Configure, Build and Operate the village and its buildings accommodating the inputs from the authority and community to form a sustainable society. A Big Data Platform collects information into a Decision Support System that identifies constraints and resources available and uses generative design approaches to optimise a series of solutions that is presented to stakeholders. The ACIP assists with determining the viability of solutions, present funding options, generate planning and approval data and monitors the realisation of the village in near real time. It then uses the historic and current data to generate a digital model, also called the Digital Twin to provide decision support when operating the village.

The village model does not encourage a free handout and supports buy-in from the society and encourages contribution of resources, in kind, labour or material means to turn a short, foreign construction intrusion into the 20+ year community settlement thrust. The village design allows for a Live-Work-Play approach from the onset. The objective is to reduce the effect of a commuter housing node to a society centred village that sustains income generation and discourages migration to congested city centres. ACIP is also involved in village development in the Provinces, to entice citizens to develop their economic future at home in a sustainable way, rather than to migrate to the mega hubs for jobs.

The technology used on ACIP provides full transparency and enable traceability of all transactions conducted. It reduces unnecessary red tape without degrading sound planning and engineering principals. ACIP promotes the use of small and big developers, to maximise the use of available resources. It allows co-operative material and services procurement for economies of scale, traceability of material and workmanship standards, and implementation of advance construction technology not normally accessible to small scale builders. The learning platform with its training resources identifies skills shortages and training requirements for the participating users and producers.

Novel Decision Support models for finance, sustainability, society and safety promote the building of community wealth and retention generational wealth with full and fractional ownership and funding models.

The ACIP Platform has established partners with expert knowledge which linked into the platform on international financing, development consultation, education, national authority and local governance, financial technology, communication, robotics and computer aided technology, agritech etc.

The overall objective of ACIP is to assist the authorities and community to provide affordable shelter and food to the society to have a dignified life with the motto “A home for anyone, and everyone in a home”.

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