# CHAPTER 06

## CONCLUSION



Figure 6.1. Prototype live-build (Author 2021)

**6.1**

REFLECTION

The dissertation was firmly rooted in the exploration of resilience within Plastic View, a dense, evolving informal settlement in the affluent Moreleta Park suburb of Pretoria. From the identification of the financial and municipal limitations faced by the settlement's community, the dissertation aimed to provide a solution to how Plastic View's resilience can be improved by developing existing conditions and systems. The intention was to plan for the incremental upgrading of Plastic View to improve living conditions whilst reducing its vulnerability to long term disturbances. Basic infrastructure, and specifically waste management, was identified as the most pragmatic avenue to meet the intentions. However, it was also understood that the intervention needed to allow continuous appropriation to meet the changing needs of the community. The design response, situated on the north-eastern boundary and high street of Plastic View, consisted of a composition of multifunctional internal and external spaces anchored by an upcycling plastic brick factory and a highly dynamic marketplace.

## The improvement of resilience

The dissertation approached the discourse of resilience in architecture, specifically within the context of informal urban settlements. This entailed investigating the settlement's vulnerabilities, conceivable threats, and adaptive and transformative capacity. The research showed the community's capacity to pre-empt threats of fire outbreaks, flooding, and material degradation by upgrading their dwellings from existing weak plastics to more durable materials. Having recognized the slow and unreliable networks through which residents acquire construction materials, and simultaneously acknowledging the settlement's lack of infrastructure and basic services, it was decided to introduce a waste management system that connected to the existing recycling networks whilst creating a new upcycling operation to advance the settlement's upgrading process. The system needed a basis of guidelines that would aid in translating resilience theory into practical application, and for this, the "safe-to-fail" mentality (Ahern 2011) became a valuable informant. The upcycling operation of the plastic brick factory could hence be understood as a system of redundancy in the sourcing of construction materials, making the existing process of dwelling upgrading more resilient. This improvement would reflect across scales greater than individual dwellings because it would advance the entire settlement away from infrastructural and socio-economic deficit whilst mitigating pollution, material degradation and health issues.

To break away from the tendency of formal development to limit the possibility of adaptation of architecture (Kamalipour & Dovey 2020:1), it was conceived that the proposed architecture be designed in a manner that promotes continuous appropriation and adaptation. The capacity for adaptation was primarily resolved in the technical iterations, as the exploration of materials and joining of elements created possibilities for flexibility in spaces. The project stressed the importance of multifunctional spaces, both internal and external, as a means of catering for changing needs in Plastic View. This approach to design should be customary for all settlement upgrading because the possibility of failure of an intervention due to unforeseen changes in settlements must be accounted for, and can be avoided when spaces allow for reappropriation (Ahern 2011:342).

Not only was change considered at a scale within individual structures, but also with the larger transformation of the selected site. Assisted by the multifunctionality of the architecture, the site has the capacity to respond to larger changes like the anticipated expansion of Plastic View, where it would shift from being a boundary development to the point of transition between the existing and new occupations. Informal settlements are relatively unpredictable urban conditions (Wu & Loucks 1995:443), so the speculation relied heavily on Plastic View's past emergence and development to inform that which may occur in the future. Future expansion may result in a reinterpretation of the architectural intervention, and whilst it expresses a capacity to transform, there is limited certainty as to how and to what extent the architecture would be reinterpreted.

**6.2**

CONTINUATION

## Challenges

The architectural approach maintained a degree of sensitivity to Plastic View's scale, construction language, and socio-spatial organisation, whilst suggesting more sustainable means of development commonplace in formal construction. This act of balancing the scales between formality and informality became a continuous thread throughout the dissertation, linking back to the architect's responsibility, in this context, of transitioning between provision and enablement (Combrinck et al. 2017:34). The notions of incrementality and appropriation within the architecture were necessary for achieving this balance as they allowed the architecture to become more than just formal, administered products. With its distinction between the provided, fixed structure and the flexible, user-owned structure, the architecture provided a platform of

enablement through which informal agency can thrive.

Building density and land occupation became critical factors in the design process, heightened by the conversation around settlement fires and overpopulation. The existing building density of Plastic View needed to be contested as the current patterns present greater threats to the community's health and dwellings. This presented numerous challenges when designing on the selected site. The public interface along the high street had to be utilised in moderation to capitalise on the street edge as existing informal enterprises do, whilst providing sufficient fire breaks, public space and walkways. Similarly, the distribution of structures along the selected site required a trade-off between adequate public space and development sprawl. This matter is particularly critical in Plastic View as the

sprawl of newly constructed dwellings continuously tests its boundary. The dissertation explored this struggle with the proposed development reinventing and redefining the existing boundary of the settlement.

## Resilience thinking

The concept of resilience is often misconstrued by built environment practitioners as a purely positive condition or ideal state (Peres & du Plessis 2014:3). Because of this, resilience is becoming a popular substitute term for sustainability (Peres & du Plessis 2014:3), reducing its potential to inform a deeper understanding of desirable and undesirable urban conditions. The aim of this dissertation was to improve the resilience of Plastic View because, given the numerous factors that make the settlement's condition unstable, a resilient settlement has a greater capacity to continue providing a quality of life that many of the urban poor seek (Peres, du Plessis & Landman 2017:692). The research highlights the understanding of resilience as a neutral concept in that it recognises the positive aspects as well as the flawed yet likewise

resilient conditions in Plastic View. This practice of thinking should become more commonplace in the architecture profession; otherwise, resilience will continue to be misapprehended as a solution to urbanization-related problems.

## Community engagement

The dissertation relied on a balance between community engagement, in-depth data collection and grounded speculation of the future of Plastic View. The continuous visits to the settlement had a profound influence on the contextual sensitivity and programmatic direction of the design. Immersing oneself in an environment like Plastic View and interacting with its community is the most effective approach to comprehending its unique dynamics of living and collective needs. The engagement builds a level of

trust between the architect and the residents, leading to mutual comfort when confiding local knowledge. Till (2005:7) reaffirms this in his argument that architectural knowledge, to enable transformative participation, must grow from within the given context. The idea of an "expert citizen" (Till 2005:8) suggests recognising that the user has knowledge grounded in everyday experience, and by involving them in the design process, the limited vision often held by professionals can be expanded.

As discussed in chapter one, a prototype build was conducted in the settlement in hopes of observing the continual appropriation of the structure. The exercise did not produce the feedback hoped for as the structure was removed after approximately two months; however, this was anticipated because of the complex, sensitive nature of the settlement. The prototype was a landmark procedure in

the developing relationship between the architecture department of the University of Pretoria and the community of Plastic View. This exercise highlighted the value community engagement can provide in professional practice in South Africa, where informal settlements and low-income peri-urban neighbourhoods form a critical part of the built environment. Transformative participation, and more so prototype testing, can allow for socio-spatial and construction ideas, like those proposed in this dissertation, to be tested in informal settlements like Plastic View. The immersion and knowledge sharing from these prototypical interventions can result in stronger contextual understandings and more successful contributions to settlement upgrading.
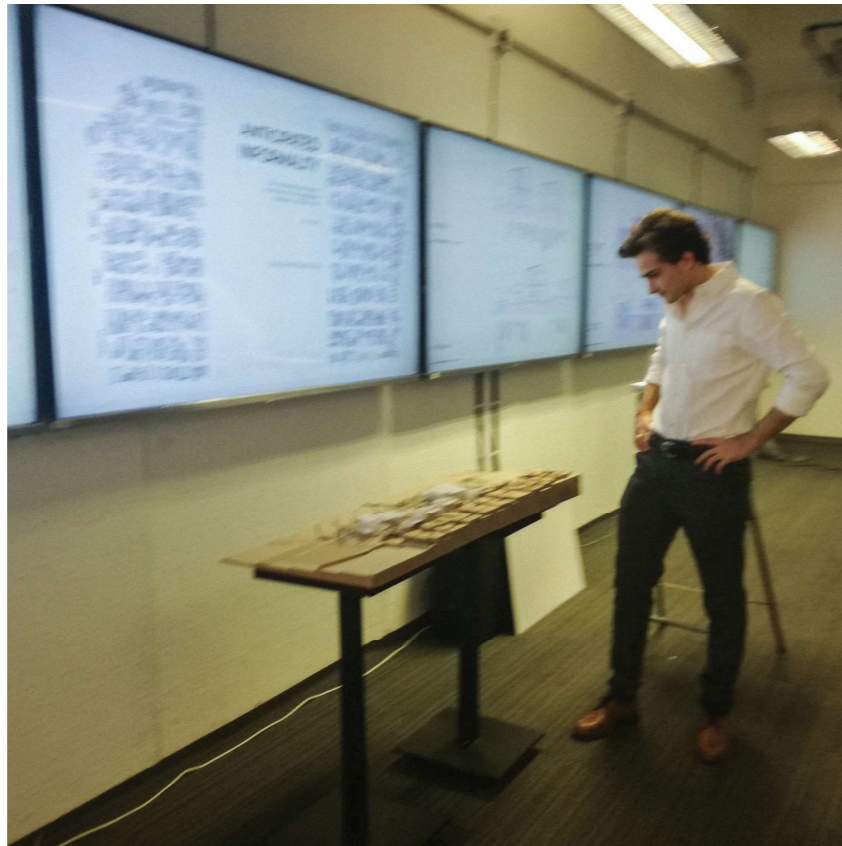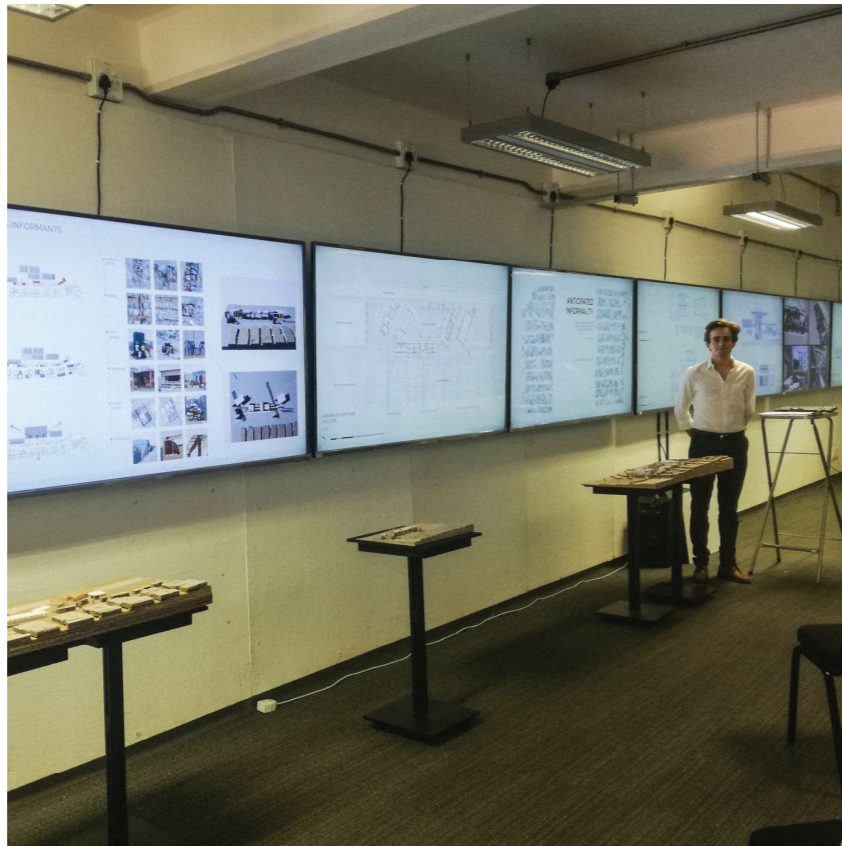


Figure 6.2. Final model 1 (Author 2021)



Figure 6.3. Final model 2 (Author 2021)

Figure 6.4. Final presentation (Author 2021)