

Research Plan

# An Architecture of Enablement

Formulating a Participatory Approach to House the  
Masses of Addis Ababa

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Cover Image

*Oosterwold Almere. A landscape punctuated with personal expression through the act of dwelling.*

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## Background

### Rapid urbanisation and a Nationwide Housing Crisis

Growth is the trademark of our contemporary age. However, the nature of this growth differs depending on the context. In more developed regions, the convergence of people to metropolitan centres has been gradual and government systems, policies and infrastructure is already well established. Other regions, where the global definition of growth is a relatively new concept, are witnessing a rapid urbanization under a political and physical infrastructure that is not equipped to handle it or is even non-existent. Yet this unnatural growth is inevitable as the definition for success seems to have already been defined. Walter Benjamin's interpretation of Paul Klee's Angel of History is a vivid metaphor for this relentless urge to urbanize.

"The storm drives him irresistibly into the future, to which his back is turned, while the rubble heap before him grows sky-high... This storm is what we call progress."<sup>1</sup>

Richard Sennett refers to this interpretation and adds that Paul Klee's Angel is leaving Europe, and this global hot-bed of development is shifting focus.<sup>2</sup> According to the UN sustainable development goals, "95 per cent of urban expansion in the next decades will take place in the developing world"<sup>3</sup>. Today, we see the image of rapid urbanisation as the ghost towns on the periphery of Shenzhen, China and the patches of building-less infrastructure, such as in Ciudad Valdeluz, Spain. African cities not only have to deal with the societal pressures that result in rapid urbanisation, but also the added complexity of operating within a globalised climate. Any investigation into an African country must be built on a recognition of this complex reality.

Addis Ababa has been the capital city of Ethiopia for 135 years. In absolute figures, the population of Addis Ababa grows by an unprecedented amount every year. The rate of population growth, despite decreasing since records began, has begun accelerating from 2013. This means the imbalance between housing demand and supply is worsening. Rural to urban migration represents the highest proportion of this increase, accounting for 58% of the growth between 1995 and 2000. The housing crisis should not be viewed as an isolated problem exclusive to the capital city. Between 2004 and 2014, secondary cities such as Mekelle and Hawassa have observed urban population growth rates of 6.2 and 6.1 respectively, figures comparable to the Addis Ababa of 1962, as well as having a higher proportion of rural-urban migrants.<sup>4</sup> It is therefore reasonable to assume the crisis unfolding in Addis is a harbinger for Ethiopia's secondary cities. How the city of Addis responds to its housing crisis could also become a model that is implemented nationwide.

The image of Addis's response is that of the Integrated Housing Development Program (IHDP). Implemented in 2005, its goal was to construct 400,000 condominium units, create 200,000 jobs and promote 10,000 enterprises within 5 years. This ambitious proposal was only partly achieved as only 171,000 units had been built 6 years after its introduction.<sup>5</sup> Nonetheless, the significance of this housing scheme is that it succeeded in creating a replicable and scalable solution.



Fig. 1 Paul Klee Angelus Novus

*Believed to be Walter Benjamin's most prized possession, the Angelus Novus depicts a figure that looks like it is being propelled through the air by wind. The figure's mouth is open, eyes fixated as if horrified by something it has witnessed.*



## General Problem

### The Condominium System

There have been many critics highlighting the shortcomings of the IHDP project. Their arguments can be summarised into three themes: social incompatibility, unaffordability and poor management. It is well documented that condominium design can respond better to the needs of its occupants. The lack of outdoor access and small areas of kitchens on higher floors forces corridors to be appropriated for cooking and livestock, disrupting neighbours.<sup>6</sup> The 20-80 mortgage scheme has also proved to remain unaffordable for the poorest of the poor. Even for those who can barely afford the down payment, the high-rise mode of living cannot support their previous mode of income generation.<sup>7</sup> Fasil Giorhis postulates that over 50% of households will not be able to afford formal shelter if condominiums remain the only option.<sup>8</sup> Many post-occupancy issues such as poor

maintenance can be attributed to a lack of management and community organisation. Perhaps most importantly, on a macro scale, the condominium system is a short-sighted method as it can only respond by providing more units incrementally without making it easier for future dwellings to be made. Supply will never meet demand.

To go about overcoming these new challenges, one can take one of two different approaches. The first is to improve the design of the existing mode of housing production, the condominium system, and the second is to provide an alternative to it. In this problem statement, I take the position that maintaining the existing mode of housing production is insufficient for overcoming these complex social and economic challenges.





## Specific Problem

### The Scalability of Bottom-up Alternatives

The condominium system is a mode of mass housing whereby a pre-defined design or set of designs is produced and then replicated according to demand and what is economically permissible. Christopher Alexander describes this as designing “at arm’s length” where the decisions are made at a distance from the physical site and the people.<sup>9</sup> This detachment between context and design creates unknowns which the architect must fill in through guessing, or at best generalising. Hassan Fathy explains this is one of the main causes of mass housing:

“If the layout of each house has to be marked on a plan before any construction begins anywhere in the village, the architect will be forced into mass design.”<sup>10</sup>

The condominium projects in Addis Ababa are exemplary of this process. The standard designs of the 20-80 and 40-60 condominium types, which are reproduced mindlessly regardless of the site, represent a housing ideal that is not grounded in a contextual dwelling tradition. A true alternative to the existing condominium system entails rethinking the fundamental process by which homes in Addis Ababa are produced. Alexander continues:

“Neither tract houses nor these types of apartment houses [the existing systems of production] can be made more human merely by improving their design, so long as the underlying systems of production which create them remain unchanged.”<sup>11</sup>

In the Mexicali project, Alexander proposes a sequence of operations instead of a built form in order to better accommodate the users. These operations provide room for

user participation and intense co-creation between the user and, what Alexander calls, the “Architect-Builder”. Instead of a standard, replicable design, the Mexicali case introduces a standard, replicable ‘set of instructions’ which is capable of materialising in a large variety of different forms and designs.

Precedents such as the Mexicali project succeed in providing a method that facilitates users to have meaningful control over the design of their dwelling environment but fails to have a significant effect on housing issues at a larger scale. The Mexicali project was abandoned after only providing custom-built dwellings for 5 families. Walter Segal’s scheme at Lewisham was limited to 13 houses.<sup>12</sup> Other schemes that were able to achieve higher numbers did so under special circumstances. The PREVI Lima scheme was a large scale competition that had enough funding to invite a large number of architects. Despite this the design was not repeated beyond the predefined experimental project boundary. Oosterwold in Almere can be viewed as a successful large scale participatory project, however, the home-builders were able to finance their homes themselves, a radically different economic situation to that of Addis. Furthermore, Oosterwold is built on a greenfield site away from any existing urban developments, meaning that space and density were less of a limiting factor.

Participatory processes that fail to grow beyond its “pilot project” state become irrelevant in cities such as Addis Ababa where the rate of rural to urban migration is accelerating. Over time, these participatory processes are in danger of being labelled as impractical and participation becomes a costly add-on value, rather than an integral part of housing the masses.



Fig.3 Self-built housing at Mexicali



## Research Question

### Bottom-up Top-down Convergence

Fundamentally, a participatory architecture requires a shifting of the role of the architect, from that which is similar to a doctor who prescribes a solution to that which is closer to a tutor who provides tools that enable a solution to be arrived at. Numerous authors have recognised the necessity for a transition of the architect's role with regards to user participation.

John Habraken, flips the question of participation in *Towards a new Professional role*, "Indeed, it is us [architects] who must participate"<sup>13</sup>, defining the nature of his proposed new role, that architects should support, guide and nurture an existing process of human settlement that has occurred independently of professionals for nearly all of time. He goes on to describe this enabling role as that of a gardener, a professional who understands the conditions of the site and the science of growth. However, the growth of the plant itself has unlimited possibilities.<sup>14</sup>

Hamdi Nabeel clarifies what an architecture of enablement entails, he describes it as "an architecture of opportunity, instead of an architecture of built form". However, this does not mean the architect can be less skilled or less aesthetic, as in some cases, a position of enablement requires more knowledge and responsibility from the architect.<sup>15</sup>

Patrick Wakely dissects further the process of enablement in terms of participatory architecture. According to his definitions, the typical understanding of enablement consists of two parts. Firstly, control must be devolved to a lower level and the power to act must be granted. This is empowerment. Secondly, those at a lower level must have the necessary capabilities in order to exercise that new power. This is enablement.<sup>16</sup> Successful participation of users relies on meeting both of these criteria.

The transition of the role of the architect from that of agency to enablement (and empowerment) forms the foundations of my inquiry:

**How can the masses of Addis Ababa be housed through a participatory design decision-making process?**

This question can be broken down into 3 sub-questions:

Firstly, Addis Ababa is a city that relies on informal structures of organization, notably the Iddir, which handles funeral care, the Equib, a credit association and the Mahiber, an Orthodox Christian group. How can architects act as community organizers and utilize these close-knit and strongly interdependent communities inside Addis's Kebeles?

Secondly, Condominium schemes remain unaffordable for 50% of households in Addis Ababa given current income levels. These include those renting under informal contracts and self-builders who are excluded from formal government systems. They do not receive compensation for their demolished homes and are left either to find low rent housing elsewhere, continue to rebuild their homes illegally on a different site, or worse, be left homeless. Can a new system of production provide a lifeline to affordable housing for the poorest of the poor, who are neglected by the current system?

Thirdly, Addis Ababa has been described as an informal mix of urban and rural. Interestingly, rapid urbanization has resulted in its ruralisation, as the traditions and behaviours of rural migrants are hard to change. Practices such as urban agriculture and living with extended families in a single room are common. Can a participatory housing process become a vehicle for more rural patterns of inhabitation to find a new meaning within an urban context, fostering a unique Ethiopian urban condition?

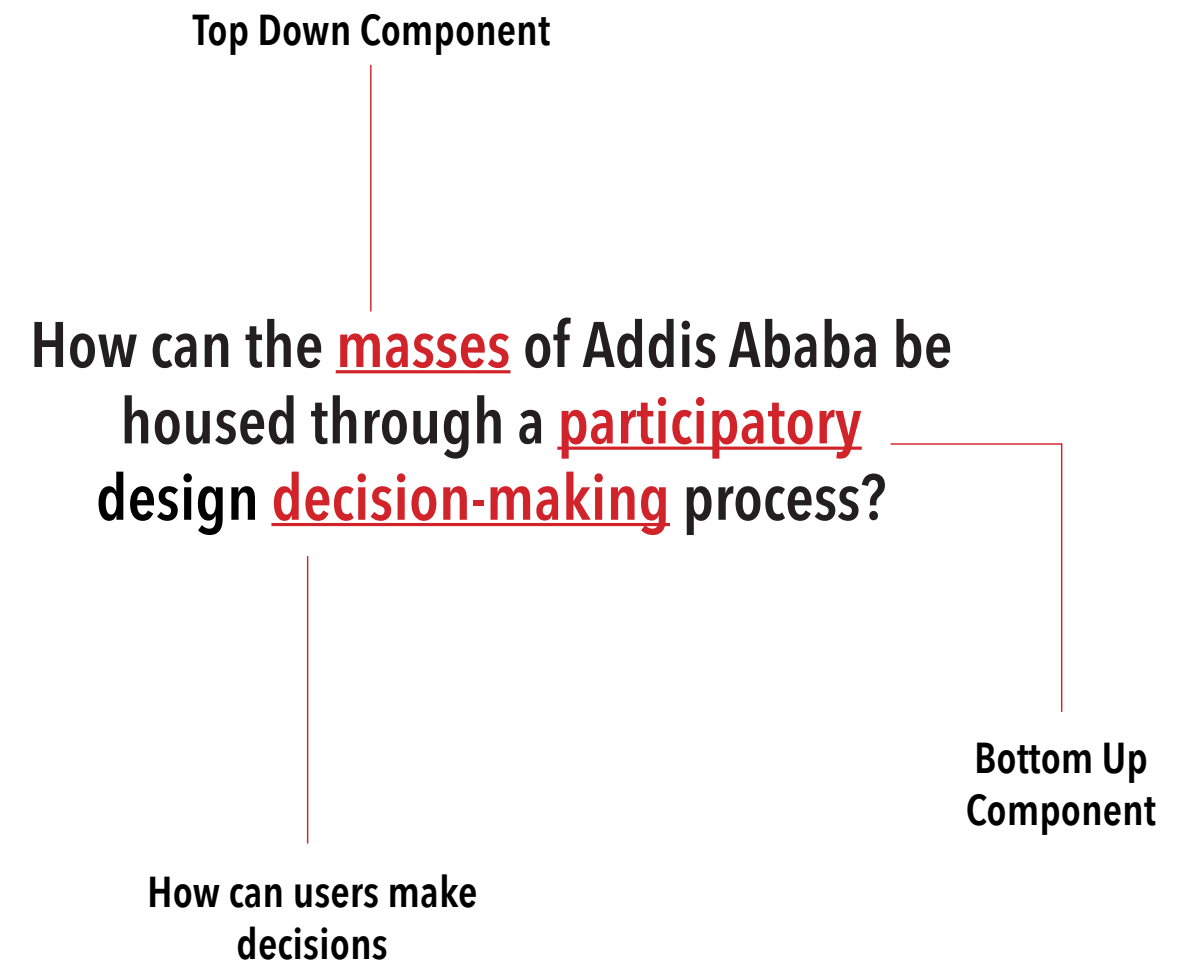


Fig.4 Research Question



## Theoretical framework

The research builds on existing literature on participatory architecture as an alternative to traditional mass housing, a body of work that originates from the 1960s and 1970s Participation Movement. Since then, participation took on a spectrum of different forms that vary depending on the power balance between the user and architect. The theoretical framework can be categorized into three groups, each representing a different aspect of enablement. The first two includes literature which belongs to the realm of formal participation and they are differentiated by their general attitudes towards participatory architecture. They represent the two halves of the spectrum of participation. The third group is dedicated to that of informal participation originating from the site in question, in other words, systems that permit the influence of dwellers which already exist informally in Addis Ababa. It is important to note the three categories are not defined by hard boundaries but by blurred edges as the power balance between user and architect can vary across a smooth gradient.

The first group advocates participatory design as citizen power and insists that only through self-actualization can participation be of most benefit to architecture. Key figures were pioneers of the participation movement of the 1970s, which was largely a response to the failures of the modern movement to provide socially coherent housing. Figures such as Lucien Kroll, Walter Segal and Christopher Alexander, were radical in their rejection of traditional roles and architectural values in favour of architecture that represented people. Control over design was to be completely freed from the grasps of the professional and relinquished to the user in the form of self build and self-design schemes such as Segal homes, Oostwold and the Mexicali project. Along the same vein, John Turner goes further to say that users should be in control over the maintenance and management of their houses once they have been built.<sup>17</sup>

Contrastingly, there were those who thought the architect should remain the designer of built form but also shared the same discontent with mass produced homes. The second

group suggests users must have a more feasible role in the design process, as subjects of intense participatory consultation processes. One major attempt at finding a true alternative to mass housing was the work of the SAR spearheaded by the theory of John Habraken. By splitting the design into two parts, support and infill, his theory provided a clear distinction of responsibilities between the architect and user, thus integrating user participation in an architect-designed scheme. This theory later evolved into what we understand today as open building. Hassan Fathy believed top-down processes can still deliver more socially coherent homes through cultivating a national culture of building, whereby individual architects are delegated to design specific neighbourhoods while operating within a common space where they can share, exchange and build up a national architectural knowledge base.<sup>18</sup>

The third group of references views participation in a less traditional sense. To an extent, participation in the built environment has existed in urban neighbourhoods, villages and communities for most of history, particularly in a third world context. Existing informal structures that allow for user participation, such as the self-help organisations in Addis Ababa, should be studied to the same extent as formal participation processes. Key figures who write about these structures are anthropologists Richard and Alula Pankhurst, Felix Heisel and Elias Yitbarek Alemayehu.

The theoretical framework spans a wide spectrum of participation from processes that are prominently bottom up to those that remain top down. It shows that the bottom-up, top-down dichotomy is not as simple as a good-bad relationship, but lessons can be learnt by both approaches. Another way of visualising this dichotomy is through the "Cite and the Ville" proposed by Richard Sennett, the former representing the way users desire to dwell and the latter representing the final built form which the users inhabit. He envisioned a desirable outcome whereby the cite and ville become united in what he calls an "Open City".<sup>19</sup> My research seeks a similar middle ground between these two extremes.

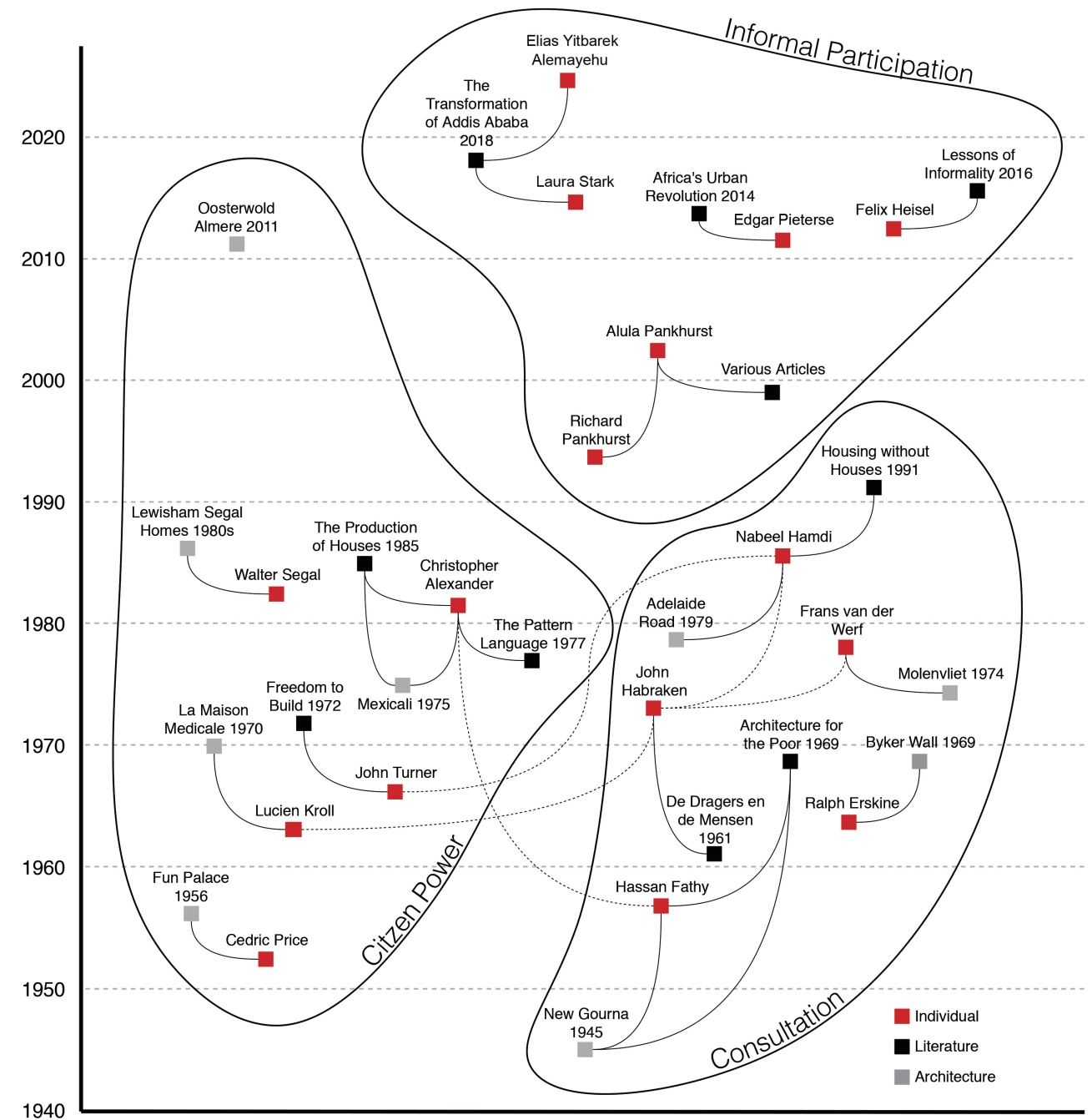


Fig.5 Theoretical Framework

The literature and architecture are arranged in chronological order. Solid Lines show direct relationships between individuals and their work while dotted lines show indirect relationships between individuals that had influence over each other. The three groups are also shown in the diagram.



## Methodology

### Top Down

The overall research strategy for reaching a participatory approach that is between top down and bottom up is to research participation from a top down and bottom up perspective simultaneously.

The top down encompasses general principles of participatory housing. These principles will originate from the analysis of a range of notable participatory housing precedents from all over the world, from different time periods. An investigation will be carried out into each of the case studies, revealing key characteristics of their participatory approaches. Where appropriate, some case studies will be engaged in a comparative analysis to find out key approaches and methods that they share. From this, a series of "patterns of participation" will be extracted and these will form the basis of a "toolkit for participatory design". Whilst the scope of the case studies is wide, the toolkit should focus on patterns that are applicable to a global south context, to prevent it from being too general and becoming unusable.

This approach derives from the work of Christopher Alexander and *The Pattern Language*, which was the first publication to analyse a subject using patterns. His scientific approach to architectural language<sup>20</sup> walks a thin line between a qualitative and quantitative methodology; quantitative in the sense he makes clear distinctions and relationships between patterns and qualitative in the sense that the language he proposes remains his perspective on how to make sense of the built environment. With this in mind, the toolkit I am proposing is also a single interpretation of the lessons learnt from the participatory housing projects it derives from. It should be viewed as a dynamic entity that can be revised and added to after more case studies are included in the study.

Research Methods:

Typological Research  
Comparative Analysis  
Hermeneutic Research (Interpretive research)

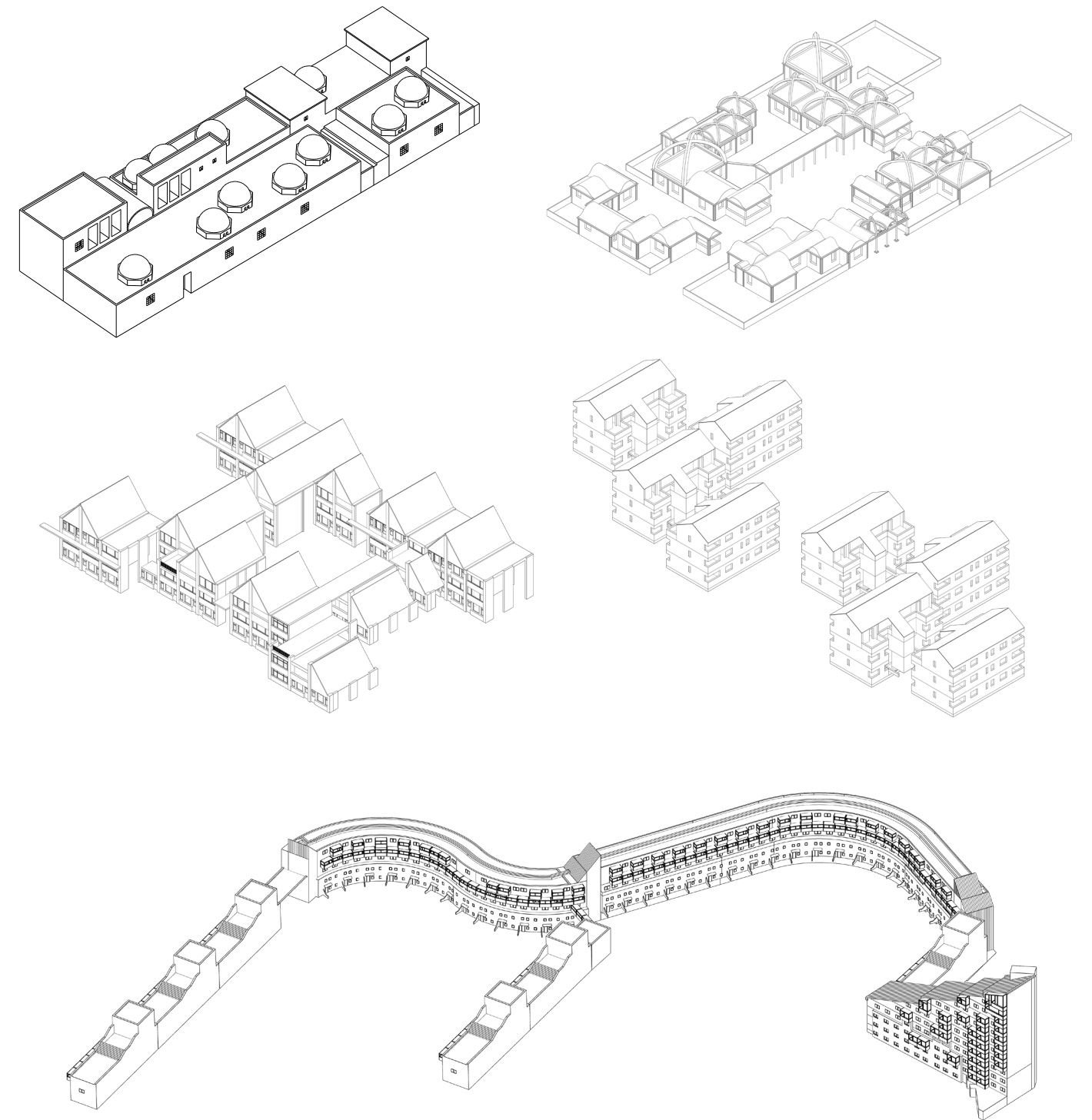


Fig.6 Some Precedents involved in the Top Down Research

(Clockwise from top left) New Gourna by Hassan Fathy, Mexicali by Christopher Alexander, Adelaide Road by Nabeel Hamdi, Byker Wall by Ralph Erskine, Molenvliet by Frans van der Werf.



## Methodology

### Bottom Up

Complementing the general top down research, a simultaneous investigation into the opportunities for participatory architecture in Addis Ababa will be launched. Although formal examples of participatory housing are scarce in Addis Ababa, many forms of informal participation exist without the initiative of any architects. To understand these intricate systems, the research must go beyond architectural discourse and consult literature from anthropology, geography and history.

After collecting information on these informal structures, they will be evaluated in terms of the opportunities or challenges they bring for a participatory housing process. Together, they will form the unique condition of Addis Ababa.

Research Methods:

Archival Research  
Typological Research

The next page summarises how the top down and bottom up research come together.



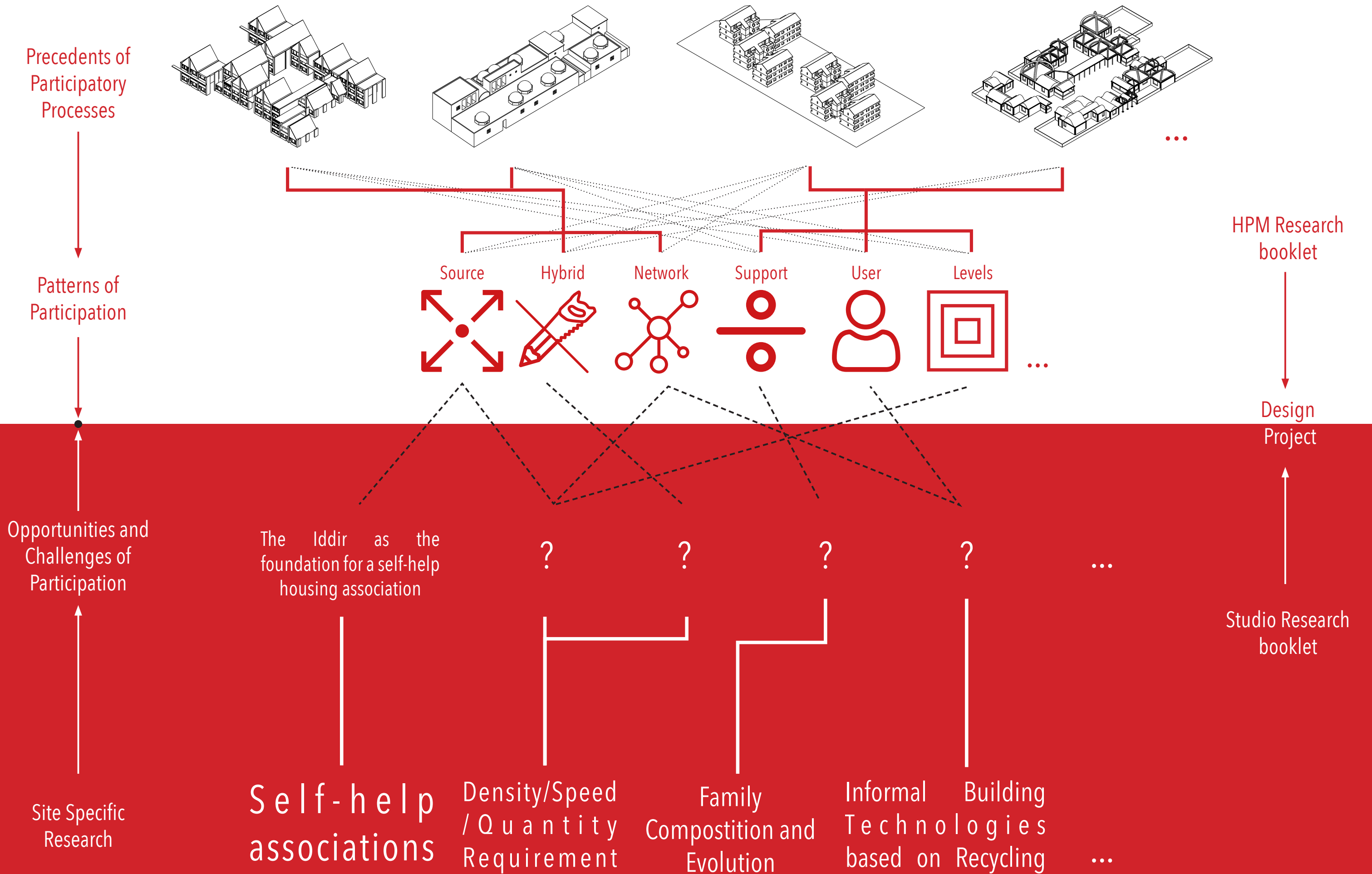
*Fig.7 An Iddir meeting*

*Fig.8 (Next page)  
Outline of Methodology*



# Process

# Products





## Relevance

### Participation and Practicality

Why should bottom up processes of design be integrated in housing at all? This concerns the concept of “open”. A top down process can only accommodate what is considered by the designer. It is what Sennett would call an efficient system that lacks resilience.<sup>21</sup> If any unconsidered variable where to change, the system would not be able to cope as it was not designed to accommodate that change. Participatory processes are inherently open to change. Bottom up design should therefore coexist with top down design.

The academic attitude towards the informal settlements of Addis Ababa or those like it has focused on “slum upgrading”, the small-scale improvement of conditions inside informal settlements such as introducing new communal latrines, health posts and various mechanisms that enable self-help. While my research also recognises the complexity and value of these existing systems of inhabitation, I give equal

importance to the need to respond to rapid urbanisation on a larger scale. There is a tendency to see the interests of the top-down and the bottom-up as mutually exclusive, as shown by the Mumford-Jacobs debate. Jane Jacobs advocates an urbanism of informal relations unfolding in slow time while Mumford believes spontaneous growth is not enough to bring about needed improvements. Instead, he concludes the foundations of urbanism must be put in order through a top down design.<sup>22</sup> My research aims to question this binary definition of housing, building on theorists that reorganise traditional connotations of bottom-up and top-down housing design. As an example, John Habraken once questioned the link between industrial production and mass housing.

“The factory is not capable of producing entirely finished dwellings, and consequently it does not care whether dwellings are uniform or not.”<sup>23</sup>





## Relevance

### Positioning Addis Ababa

What are the specific contextual conditions of Addis Ababa that can be used as starting points in formulating a participatory methodology? Below, 2 potential areas of opportunity will be analysed and discussed in relation to the precedents included as part of the top down analysis. These relationships will form the basis for the argument that a participatory process in Addis Ababa is possible. It is important to note that these 2 subjects are only a preliminary attempt at understanding the site and do not form an exhaustive list. Deeper research into the unique site conditions is required later on in the design process.

\* \* \*

The origin of Ethiopia's unique self-help associations is widely debated. Some sources indicate they were a result of the neglect and harsh conditions during the Italian occupation<sup>24</sup>, while others show evidence of Iddir associations existing before the Italian occupation and only expanding popularity as a result of it<sup>25</sup>. Regardless, the need for self-help largely came from those marginalised in society, such as ethnic rural migrants and local citizens under the control of Italian oppressors, due to the lack of top down insurance systems available to them.

The Iddir is the most discussed self-help organisation as it is by far the most popular. It is officially a funeral association where members contribute a monthly sum to a central treasury which then pays for and organises the funerals of their members. However, it is also important to recognise other modes of self-help organised around other necessary processes. The Equb (Iqub) redistributes money to provide for small investments, the Mahiber and Senbete organise for religious purposes, the Wonfel and Debo manage resources of production and the Jigie manages labour sharing primarily in rural areas<sup>26</sup>. Community organisation in Ethiopia and Addis Ababa is thus well established and is engrained in multiple social aspects of the lives of Ethiopians.

Upon closer inspection of the Iddir, different types emerge. Alula Pankhurst has collated different attempts to classify Iddirs based on the social condition that gave rise to them (fig. 10). Iddirs based on locality, in other words based on

those who live in the same neighbourhood, accounted for more than 50% of the total according to Pankhurst's study. It is then valid to assume the location of people's homes plays the largest factor in deciding which self-help organisation they become a part of. The introduction of the condominium scheme was thus detrimental to preserving these existing self-reliant systems. In fact, it is documented that many of those who move to their new condominium building maintain their membership in their original Iddir, sometimes as an alternative to having to familiarise with a new condominium iddir, which is often more expensive to join. This may also be one of the factors causing 20% to 40% of Addis's households to belong to more than one Iddir<sup>27</sup>. The Iddir historically has also been involved in matters beyond funeral care due to it being the most established self-help association in Addis. There have also been cases where NGO's have worked with local Iddirs to undergo projects in water sanitation and healthcare. Below is a list of the Iddir's extra activities:

<i>Maintaining Sanitation</i>	<i>Healthcare</i>
<i>Water Sanitation</i>	
<b>Funeral Associations</b>	
<i>Building Clinics</i>	
<i>Aid for Elderly, Disabled and Orphans</i>	
<i>Local Policing</i>	<i>Law and Order</i>
<i>Community Development</i>	
<i>Improving Adult Literacy</i>	<i>Education</i>
<i>Women's Education Programs</i>	
<i>School Building</i>	
<i>Organising Vocational Activities</i>	
<i>Road and Bridge Construction</i>	<i>Construction</i>
<i>Tree Planting</i>	
<i>Wood and Metal Workshops</i>	
<i>Savings and Credit Associations</i>	<i>Banking</i>

The membership, typology and activities of the Iddir (and indeed other self-help associations) is complex and relies on informality and flexibility. Jifar argues that it is precisely

Membership basis	Amharic terms	English translations
Locality	<i>Yäsäfar</i> <i>yäakkababi</i> <i>Yäqäbäle</i> <i>Yäwändoč</i>	Neighbourhood Area From within the same <i>qäbäle</i> administration Men's <sup>45</sup>
Ethnicity	<i>Yägosa</i> <i>Yäbiher</i> <i>yagär lijoč</i> <sup>46</sup>	Ethnic, clan People's, nations. Of co-migrants from the same area
Institution	<i>yämäsiriyabet</i>	Office (work place)
Gender	<i>Yäsetoč</i> <i>yäbaltinna</i> <sup>47</sup> <i>yägwada</i> <sup>48</sup>	Women's Housekeepers' domestic
Age	<i>yäwät'atoč</i>	Of youth
Friendship	<i>Yägwadäñoč</i> <i>Abiroadägoč</i> <i>yäqollo</i> <i>gwandäñoč</i> <i>as wändimamačoč</i> <i>ihitimamačoč</i>	Friends' Of people who grew up together Of friends eating roasted grain together <sup>49</sup> Literally of brothers, who grew up together Literally of sisters, who grew up together
Kinship	<i>Yäbetäsäb</i> <i>yäbetäzämäd</i>	Of family Literally of 'relatives of the house'
Religion	<i>yähaymanot</i>	Of religion (Church of Mosque-based)
Displacement	<i>Yätäfänaqay</i> <i>yätamällašoč</i>	Of displaced people Of returnees
Resettlement	<i>Yäsäfari</i>	Of resettled or squatters

Fig. 10 Iddir Typology



because of their informality that formalising these processes will result in their destruction.<sup>28</sup> Pankhurst agrees with this point:

“Historically whenever Iddir have felt that they are being co-opted rather than becoming partners in development, they have tended to retreat back into exclusively funerary activities.”<sup>29</sup>

The opportunity that Addis’s self-help associations presents for a participatory design approach is that they provide an existing organisation of people lead by influential representatives, the chairs of the associations, typically a community elder. The strategy should not be to incorporate these associations into newly proposed top down structures, as was attempted by the Derg regime to incorporate Iddirs into Kebeles<sup>30</sup>, but to find ways in which to help and grow these existing structures. Perhaps the right to decent, affordable housing can be perceived as equally essential as the right to a funeral. The concept of Christopher Alexander’s builder’s yard is a suitable architectural manifestation of the local self-help association. One can easily imagine a version of the Jigie which coordinates labour sharing for urban construction instead of rural agriculture. Multiple Iddir membership also creates an overlapping of different self-help organisations, resulting in a cross-pollination between different geographical locations. This could act as a basis for a coordinated network of local organisations, similar to Hassan Fathy’s imagined “national team of architects” who together can collaborate and foster a national tradition of dwelling.<sup>31</sup> The informal group insurance bubbles created by self-help associations such as the Iddir also has the potential to increase the economic capabilities of a group. One family may require a new extension to their house next year, which means they can contribute to the new house of another family that is more in need this year.

Waste treatment is the second unique site condition that presents an opportunity for participatory housing in Addis. Strongly linked to self-help organisations such as the Iddir, informal waste collection, recycling and reusing is a process through which inexpensive everyday items can be purchased. For others, it opens another path for income generation.

The only formalised part of the waste treatment and recycling process in Addis Ababa is the transportation of waste from collection points to dump sites. Collection of waste from households is entirely managed by the informal sector through waste collectors called Kure Yalews (Korales), a well coordinated network of informal workers each operating within their own self-allocated district.<sup>32</sup> Moreover, the

introduction of the informal sector broadens the possibilities for waste management in Addis Ababa, as shown in Fig. 11. A popular destination for recyclable waste is Minalesh Terra, where there is a Sunday market full of informal street vendors selling remade, re-purposed goods.

“Their genuine affection towards this recycling marketplace and the mastery of professions we encountered there surprised us and further strengthened the conviction that Minalesh Terra has significant potential as an example of participatory urban renewal.”<sup>33</sup>

The network of Korales and the activity at Minalesh Terra shows that non-professionals are fully capable of treating recycled household goods and in some cases are able to create new, innovative household items out of old materials. The question is, can this provide an opportunity for the production of houses as well as household items? There is an area of Minalesh Terra which deals with building goods, Heisel and Woldeyessus noted an extensive reinforcement bar recycling operation, where reinforcement bars are reclaimed from construction sites and sometimes welded together to provide the correct length, before redistributing them to new building projects.<sup>34</sup> A problem arises here, reclaiming building components requires much more care and knowledge than reclaiming household items, which have less consequences if they are of bad quality. A building component as important as reinforcement bars effects the structural integrity of a building and could potentially risk the lives of dwellers. Contrary to the strategy for Iddirs, the existing system of waste recycling, at least for building components, requires formalisation and professional input.

An example of how this formalisation process can be achieved is the work of iBuild in Kenya. iBuild have created an online platform that brings together clients, contractors and suppliers. It has been advertised as an Airbnb/Uber equivalent for the production of houses. However, as well as offering a pairing service, iBuild coordinates the entire building process, handling micro transactions, quality assurance and professional evaluation. Whilst users get the most functionality of iBuild through downloading the app on a smartphone, users who do not need all the functionality can still participate if they own a cellular phone, through text messages.<sup>35</sup> According to most recent data, 73% of users of iBuild connected through cellular phones.<sup>36</sup>

The largest benefit that digital platforms provide to informal systems such as recycling in Addis Ababa is transparency. Everyone who uses the platform enters the network on level ground and gains trust and reputation through the honest

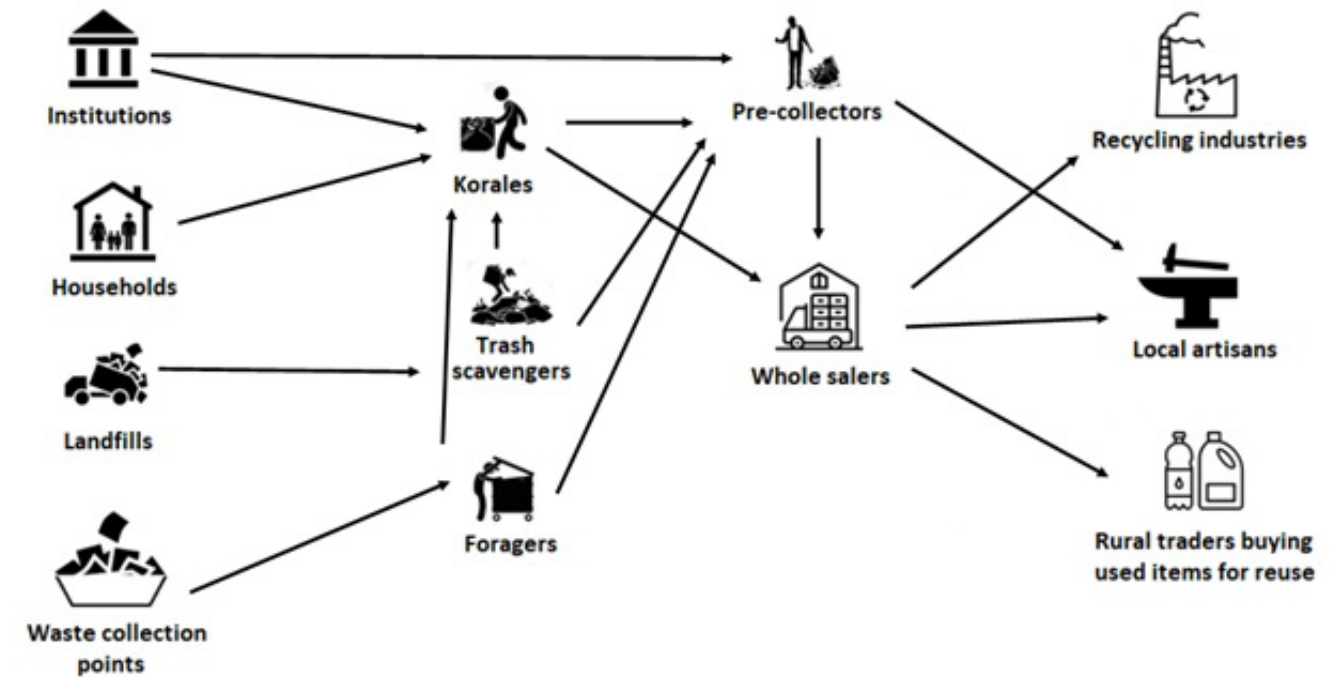


Fig.11 Informal waste collection, recycling and re-using in Addis Ababa



Fig.12 Sequence of events in the informal recycling of materials



work they do; everyone has a chance to be part of a transparent system. A transparent system is also more easily regulated. Dangerous activities such as joining old reinforcement bars can be easily vetted out.

A formalised, transparent system for the recycling of building components can become part of a participatory system of production for houses. The building components produced this way will utilise local knowledge of construction, provide a wider range of component types than what is traditionally available on the formal market and achieve it in a circular, sustainable way.

This preliminary exploration into the existing social systems of Addis Ababa and the opportunities they create for participatory housing starts to unwind the complex, chaotic relationships in Ethiopia's largest city, relationships that are currently rejected by purely top down housing schemes. The greater the number of relationships drawn from these existing systems, the greater the potential of the resulting participatory process.





# Time Plan

The general strategy for organising the research is illustrated by fig. 13. The research question will ultimately be answered through alternating between two modes of investigation, the top down aspiration, or how a participatory process can be realised in general terms, and the bottom up research, or how a participatory process can be realised in the specific context of Addis Ababa. Through time, these two modes will converge into a final participatory design proposal.

Simultaneously, the investigations will zoom into the final outcome, starting from the abstract scale, to the scale of the city, then neighbourhood, repeating block and finally to the scale of the building.

A series of milestones is proposed, each having a list of desired products.

P1 26 November 2020

*Interim Presentation*  
*Site Analysis*  
*Thematic Research*  
*Draft Research Plan*

P2 13 January 2021

*Formal Presentation*  
*Urban draft / master plan*  
*Draft design (plans, sections, elevations) 1:1000 / 1:500*  
*Programme of requirement*  
*Research Plan*  
*Graduation Plan*

P3 3 April 2021

*Interim Presentation*  
*Plans, facades, cross-sections, 1:200*  
*Part of the building, plan and cross-cut*  
*Façade fragment with hor. and vert. cross-section*  
*Set up details*  
*Draft reflection*

P4 25 May 2021

*Formal Presentation*  
*Site 1:5000 / 1:1000*  
*Plan ground level 1:500*  
*Plans elevations, sections 1:200 / 1:100*  
*Part of the building, plan and drawings 1:50*  
*Façade fragment with hor. and vert. cross-section*  
*Details*  
*Theoretic and thematic support of research and design*  
*Final reflection on architectonic and social relevance*

P5 21 June 2021

*Final Formal Presentation*  
*Same as P4*

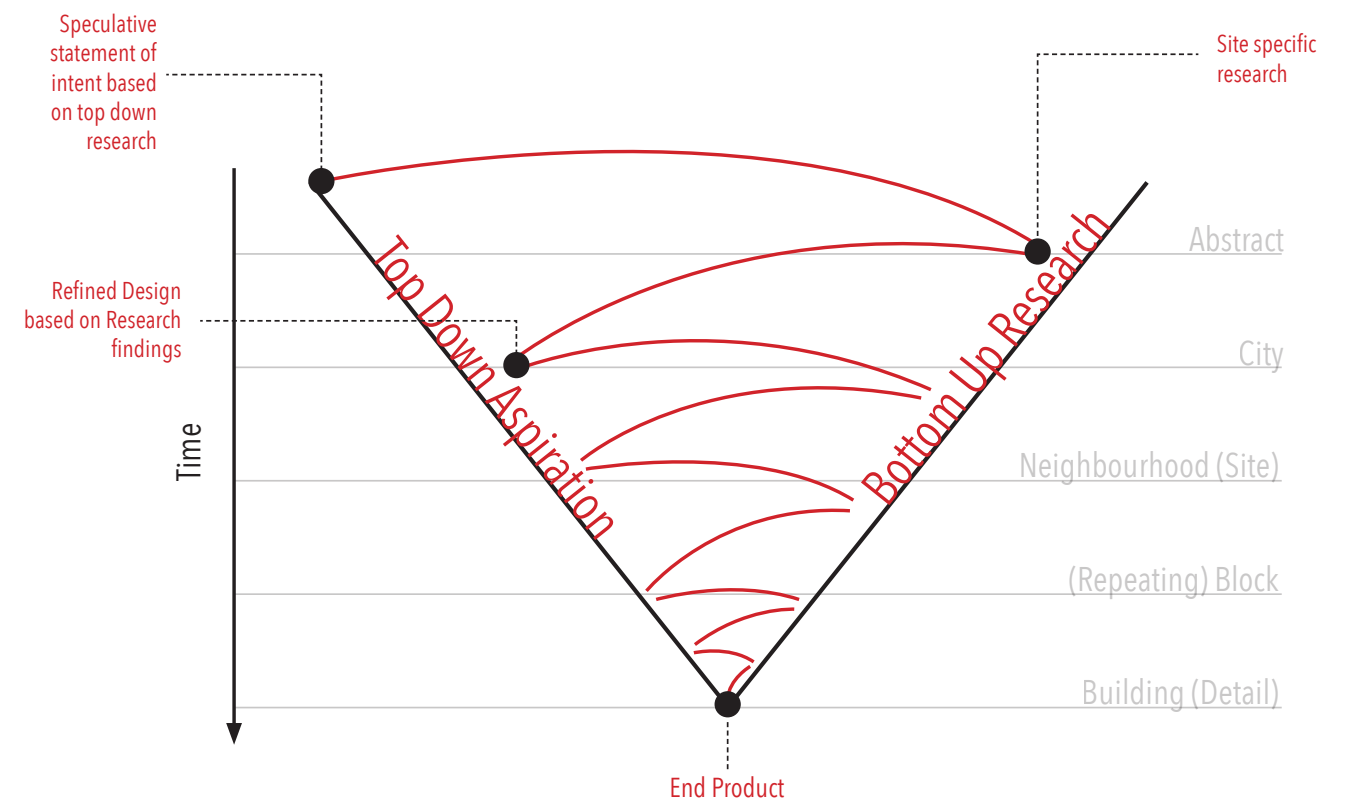
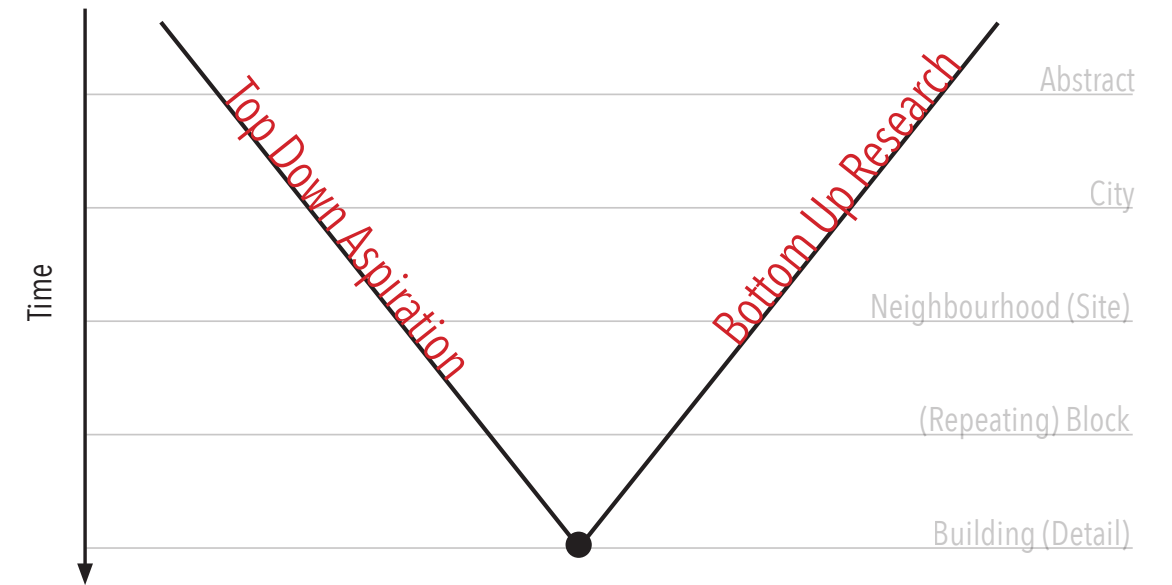


Fig. 14 Time Plan

## Notes

### Endnotes

- 1 Richard Sennett, *Building and Dwelling* (London, Penguin Books, 2019), 118-119.
- 2 Ibid, 120.
- 3 UN Sustainable Development Goals, Goal 11: Make cities inclusive, safe, resilient and sustainable, accessed on 18 January 2018. <http://www.un.org/sustainabledevelopment/cities/>.
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- 5 M. French & K.Hegab, *Condominium housing in Ethiopia: The integrated housing development programme. United Nations Human Settlements Programme* (Nairobi: UN-Habitat, 2010), vii.
- 6 Ibid, 42.
- 7 Ibid, 43.
- 8 Fasil Giohis, "Housing in an Informally Grown City," in *Lessons of Informality Architecture and Urban Planning for Emerging Territories. Concepts from Ethiopia*, Felix Heisel and Bisrat Kifle (Basel, Birkhäuser, 2017).
- 9 Christopher Alexander, *The Production of Houses* (New York: Oxford University Press, 1985), 39.
- 10 Hassan Fathy, *Architecture for the Poor* (Chicago: The University of Chicago Press, 1973), 147.
- 11 Christopher Alexander, *The Production of Houses*, 29.
- 12 Lizzie Crook, "Walters Way houses can be easily adapted to their owner's needs," Dezeen, accessed December 30, 2020, <https://www.dezeen.com/2020/09/27/walters-way-houses-can-be-easily-adapted-to-their-owners-needs/>.
- 13 John Habraken. "Towards a new professional role", *Design Studies* 7, no. 1, (July 1986): 140 [https://doi.org/10.1016/0142-694X\(86\)90050-5](https://doi.org/10.1016/0142-694X(86)90050-5)
- 14 Ibid, 141.
- 15 Nabeel Hamdi, interviewed by author.
- 16 Patrick Wakely, *Housing in Developing Cities, Experience and Lessons* (New York: Routledge, 2018), p38-39

- 17 John F. C. Turner and Robert Fichter, *Freedom to build. Dweller control of the housing process*, (New York: Macmillan, 1972).
- 18 Hassan Fathy, *Architecture for the Poor*, 147.
- 19 Richard Sennett, *Building and Dwelling*, 205.
- 20 Alexander had studied Mathematics at University and worked in the field of Computer Science.
- 21 Richard Sennett, *Building and Dwelling*, 268-270.
- 22 Richard Sennett, *Building and Dwelling*, 84.
- 23 Koos Bosma, Dorine Hoogstraten & Martijn Vos, *Housing for the Millions. John Habraken and the SAR 1960-2000* (Rotterdam: NAI Publishers, 2000), 94.
- 24 Makuria Bulcha, "Eder: Its Role in Development and Social Change in Ethiopian Urban Centres." (Masters thesis, Addis Ababa University, 1973).
- 25 Alula Pankhurst, "The Emergence, Evolution and Transformations of iddir Funeral Associations in Urban Ethiopia," in *Journal of Ethiopian Studies* 41, no. 1/2 (June-December 2008): 149.
- 26 Woubzena Tadesse Jifar, "The Effects of New Housing Developments on Idir, a Self-Help Association in Addis Ababa, Ethiopia." (Masters thesis, UCLA, 2012), 4.
- 27 Pankhurst, "The Emergence, Evolution and Transformations of iddir," 160.
- 28 Jifar, "The Effects of New Housing Developments on Idir," 6.
- 29 Pankhurst, "The Emergence, Evolution and Transformations of iddir," 178.
- 30 Ibid, 153.
- 31 Hassan Fathy, *Architecture for the Poor* (Chicago: The University of Chicago Press, 1973), 145.
- 32 Felix Heisel & Kifle Woldeyessus Bisrat. *Lessons of Informality: Architecture and Urban Planning for Emerging Territories Concepts from Ethiopia*. (Basel: Birkhäuser, 2017), 124.
- 33 Felix Heisel & Kifle Woldeyessus Bisrat. *Lessons of Informality*, 127.
- 34 Felix Heisel & Kifle Woldeyessus Bisrat. *Lessons of Informality*, 125.
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- 36 Nancy Welsh, personal communication, October 22, 2020.



## Notes

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## Notes

### Image Captions

- Cover Image By Author
- Fig. 1 Paul Klee, *Angelus Novus*, 1920, Monoprint, 24.2 x 31.8cm., Paul Klee, accessed December 30, 2020, <http://www.paul-klee.org/angelus-novus/>.
- Fig. 2 Katherine Hegab, Photograph, UN-HABITAT 2010 The Ethiopia Case of Condominium Housing: The Integrated Housing Development Programme. United Nations Human Settlements Programme: Nairobi.
- Fig. 3 Centre for Environmental Structure, Mexico, The Mexicali Community, accessed December 30, 2020, <http://www.livingneighborhoods.org/ht-0/mexicali.htm>
- Fig. 4 By Author.
- Fig. 5 By Author.
- Fig. 6 By Author.
- Fig. 7 Olisa Gravney, 2017, Photograph, accessed January 2, 2021, <https://medium.com/impact-insurance/i-am-a-part-of-7iddirs-my-family-and-friends-did-not-understand-why-then-my-husband-died-8455fd57fbae>
- Fig. 8 By Author.
- Fig. 9 By Author.
- Fig. 10 Pankhurst, Alula. "The Emergence, Evolution and Transformations of iddir Funeral Associations in Urban Ethiopia," in *Journal of Ethiopian Studies* 41, no. 1/2 (June-December 2008) 167. <https://www.jstor.org/stable/41967613>
- Fig. 11 UNDP Ethiopia Accelerator Lab, Network among different actors in the informal waste management sector, 2020, accessed December 31, 2020, <https://www.et.undp.org/content/ethiopia/en/home/blog/2020/minalesh-tera--how-addis-ababas-informal-recycling-and-reusing-m.html>
- Fig. 12 Adapted from Felix Heisel & Bisrat Kifle, *Recycling Spaces – a day in Addis Ababa’s Merkato* (2016; Basel: Birkhäuser, 2016), video. <http://spacesmovie.com/?episode=recycling>.
- Fig. 13 Erin van der Wyk, 2013, Photograph, Earthbound: Menalesh Terra – Repurposing Addis, accessed January 2, 2021, <https://itchierfeet.wordpress.com/2013/07/12/earthbound-menalesh-terra-repurposing-addis/>
- Fig. 14 By Author.