

## **Agile Urban Planning and Phased Housing Construction for Migrating Populations**

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Various environmental, social and economic disruptions trigger the displacement of people and create the need for an agile provision of affordable housing. The responses of architects and urban planners to that need are pointing towards solutions based on the concepts of ephemeral urbanism and phased construction of housing, which rely on self-sufficiency in terms of building materials and, very often, construction. The paper presents examples of ephemeral urbanism and architectural design of affordable, phased housing applied in many developing countries facing a significant influx of people into cities due to radical changes in political, socio-economic or environmental contexts. They range from remediation interventions in illegally built settlements, to support for the development of affordable housing, which includes up-skilling of the population to self-build with locally available building materials.

The discussion focuses on the need to include the concepts of agile urban planning and architectural design in the education of architects and urban planners as the means for an efficient provision of affordable housing in the context of global population growth and migrations from rural to urban areas. It also proposes that urban planning strategies of local authorities need to consider scenarios and develop models for responsive and rapid urban planning interventions when faced with potential multiple disruptions of the envisaged urban development. The paper concludes by outlining areas of potential future research that will inform the education of architects and urban planners, as well as architectural and urban planning practice.

**Keywords:** ephemeral urbanism, affordable housing, self-build, construction up-skilling

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### **1. Introduction**

A range of challenges exist in the planning and management of cities - from designing and creating the long-term physicality of the city to offering sufficient fluidity for unexpected or unplanned needs. The hypothesis is that better efficiency can be achieved by developing the capabilities of all settlements to respond in an agile manner to global and local challenges, be they environmental (mitigation of and adaptation to climate change, loss of biodiversity, limits to resources, and natural disasters), social (global population growth and migrations, lack of housing, poverty, poor health, ageing population) or economic (global and regional economic disruptions, need for up-skilling due to growing automation of work). The related research question is: Apart from long-term actions, which often require changes in national laws (e.g. regarding climate change), what actions in the management

and planning of cities are taking place and can be planned to address local needs and challenges in an agile way? The responses of architects and urban planners to the need for affordable housing for over 1 billion people who live in slums (Davis, 2006) or have to migrate due to economic, social or environmental disruptions are pointing towards ephemeral urbanism (Merhotra et al, 2017) and architecture (Vidiella, 2016). The 2016 Venice Biennale 'Reporting from the Front' (Aravena, 2016) presented a wide range of examples of recent ephemeral urbanism and affordable architecture from around the world, which rely on self-sufficiency in terms of building materials and, very often, construction.

Self-reliance in housing through self-building was and still is the way in which past and current rural communities built and are building homes. Mass-housing construction emerged with industrialisation and during major reconstructions of cities following the two World Wars in Europe in the 20<sup>th</sup> century. However, during the last few decades, the provision of social housing in European cities has been declining. The Housing Europe Observatory (2017) report indicates that housing inequalities and income inequalities in the European Union (EU) reinforce each other, hitting the poor disproportionately harder and increasing levels of homelessness, while the level of housing construction is still low and major cities face a structural housing shortage reinforced by recent waves of migration. The above report also reveals that in most cases, paradoxically, EU Member States have decreased public expenditure for housing and rely on measures to increase the supply in the private sector or access to homeownership. As state support for affordable, social housing is decreasing across the EU, citizens who cannot afford to buy houses from private housing developers have to identify more affordable routes to homeownership, including co-housing, residents' co-operatives, self-help and self-build initiatives, experimental work-life communities, ecological housing communities, some types of Community Land Trusts (CLTs), and new settlements based on (local) community asset ownership, which are defined by researchers as 'collaborative housing' (Lang et al, 2018). Radical political and socio-economic changes in the former socialist countries in Europe, which have been transitioning to the capitalist economic system since the 1990s, have led to the significant decrease of public funding for social housing and a shortage of affordable housing. Housing shortages in cities contribute to the increase of informal settlements around them.

The changing environmental and socio-economic contexts call for the development of new concepts in planning and construction of housing that can provide homes for populations affected by sudden environmental hazards (earthquakes, floods, rising sea levels, large fires), potential major industrial accidents (e.g. related to nuclear power plants), wars and/or disruptive socio-political changes. Therefore, this paper focuses on recent agile urban planning

concepts and practices in which incremental housing construction emerges as one of the approaches to providing affordable housing. The discussion highlights the need to integrate the above concepts into the education of urban planners and architects, as well as the need to consider scenarios and develop models for responsive and rapid urban planning interventions by local authorities when faced with potential multiple disruptions of the envisaged urban development. The conclusions outline the areas of potential future research that will inform the education and practice of architects and urban planners, as well as the planning policies of local authorities.

The research methods relied on literature review and examples of architectural and urban planning interventions exhibited at the 2016 Venice Biennale, which are available in the publications and/or websites of architectural and urban planning consultancies.

## **2. Agile planning for kinetic urbanism**

*The adjective agile is used to describe ways of planning and doing work in which it is understood that making changes as they are needed is an important part of the job (Cambridge Dictionary).*

Agile urban planning enables and supports ‘making changes as they are needed’ in the use of land and built environment. The concept entails flexibility in planning of how land is used and recognises that any new intervention should be either reversible (light on the ground and non-polluting) or enable potential other uses to ‘make changes as they are needed’. Ephemeral, time-limited uses of land and built environment can be evidenced by a wide range of abandoned built assets in many cities. They testify that lack of planning for ephemeral use leads to waste. Merhotra et al (2017) highlight that, when analysed over lengthy periods of time, ephemerality emerges as an important condition in the life cycle of every built environment. They define ephemeral urbanism as a temporal articulation and occupation of space for a city in constant flux, proposing a kinetic city model instead of a static, fixed model. In a kinetic city model, designing functional arrangements is more important than the construction of the architectonic body, openness prevails over rigidity, and flexibility is valued over rigour. They argue that the sustainability of a kinetic city model lies in the city’s capacity to deconstruct, disassemble, reconfigure, and reverse previous iterations, and in the potential to quickly respond to socio-economic and environmental disruptions. Regarding the scale of a kinetic city model, it could range from a small infill within the pre-existing, permanent city to the construction of ephemeral megacities hosting millions of people.

Ephemeral urbanism and architecture are applied in many developing countries facing a significant influx of people into cities, evidenced by information on

completed projects available on the websites of several architectural practices, for example: flexible urban design interventions by architectural practices Pico, Lab.Pro.Fab, Capa, Colectivo Independiente in self-built areas at the outskirts of Caracas and some other cities in Venezuela; Jan Gehl Architects' interventions in *barrios* (slums) in Argentina; participatory planning organised by Ecosistema Urbano in self-built settlements in Paraguay; and participatory projects coordinated by Ciudad Emergente in Mexico. Their projects deploy lightweight structures to define spaces for socialising, sport, playgrounds, cultural events, community engagement, trading, access and for other community needs.

Unplanned migrations of populations due to political, socio-economic or environmental changes in some African and Asian countries led to the construction of large ephemeral settlements, for example: Dadaab Refugee Camp in Kenya on the border with Somalia, built in 1992 and home to 330,000 people (Merhotra et al, 2017); a refugee camp that could accommodate around 800,000 Rohingya Muslims pouring over the border from Myanmar (AFP, 2017); many UN peacekeeping camps across Africa (Maertens and Shoshan, 2018); Kigeme camp established for over 14,000 refugees after the explosion of the Nyiragongo volcano in Congo in 2002 (Baxter and Ancia, 2002). Apart from a quick response to emergency situations, ephemeral urbanism and architecture are applied in planning temporary and occasional events such as festivals, celebrations, trading, and for other, shorter or longer, public gatherings. Sometimes, they are applied in planning temporary accommodation for a very large number of people, e.g. the Kumbh Mela religious event for which a tent city for 100 million people is set up every 12 years next to Allahabad city at the confluence of the Ganges and Yamuna (Merhotra et al, 2017).

The examples of agile planning interventions indicate the importance of considering various potential needs for repurposing the use of land and built environment, and how they can be met through urban planning and management. Availability of data on land use and built assets which are not used or under-used will assist in considering what can be used in such situations. The above examples also demonstrate great sensitivity in considering how to engage with vulnerable communities who live in informal settlements and how to improve their quality of life in the built environment they created out of need to provide a home in difficult circumstances. Apart from being useful in emergency situations, good quality ephemeral urbanism interventions in the built environment provide solutions for a range of lively activities such as trading, celebrations and festivities. Considering the versatility of ephemeral urbanism, it should feature more prominently in the education of urban planners and architects.

Following the investigation of the potential role of ephemeral urbanism as a concept that can assist in improving conditions in informal settlements, the next section examines emerging collaborative, self-reliant approaches to providing affordable housing for populations that cannot buy houses or flats.

### **3. Cooperative pathways to affordable housing**

In the context of neoliberal capitalism, which is characterised by a decrease in public expenditure for housing, citizens who cannot buy a house from private developers have to build their own home, usually by relying on support from their wider family and community, and often within informal settlements. Alternative self-reliance approaches are also being used – communities are increasingly setting up various forms of co-operative, self-governing housing organisations. Elinor Ostrom, an American economist who won the Nobel Prize in 2009, argued in her book *'Governing the commons: The Evolution of Institutions for Collective Action'* that stable institutions of self-government can be created if certain problems of supply, credibility, and monitoring are solved (Ostrom, 1990). However, even if those problems are resolved, community co-operatives face a range of external barriers that they have to overcome to achieve their common goals.

One of the key barriers to self-building and/or cooperative housing is access to land on which to build. Bryden and Geisler (2005) highlight examples of community-centric land reforms from pre-feudal and feudal societies to date and across the world. The barriers to community land ownership are currently addressed in various ways, including through the establishment of community land trusts (CLTs), small-scale organisations for community-based development, collective stewardship of land, and affordable housing provision (Bunce, 2016). In the USA, CLTs emerged in 1969 (Davis, 2010) – with over half of the USA's 230 CLTs formed since 2000 – supported by a national lobbying body since 2006 and funded by combinations of public, private and charitable finance (Moore and McKee, 2012).

In the UK, the recent history of CLT development shows how their success is affected by the changing economic or political context. In England, the Housing & Regeneration Act of 2008 provided the first legal definition of CLTs (Aird, 2009) and the CLT Fund, established in 2008, covered the costs related to legal constitution, technical assistance, business planning and planning permission, but not for the purchase of land (Moore and McKee, 2012). CLTs often face a range of difficulties within a neoliberal, pro-market urban governance and development context which, in the case of community efforts in East London, had to be overcome by lobbying government actors and agencies and navigating

partnership arrangements with private developers to gain political acceptance (Bunce, 2016). In Scotland, community land ownership was supported by the creation of a dedicated Community Land Unit (CLU) in 1997, a Scottish Land Fund which operated from 2001 to 2006, and the Land Reform Act in 2003 which created a community right to buy – providing the conditions for community land ownership to rise, but weakened after the closure of the Land Fund in 2006 (Moore and McKee, 2012).

Housing co-operatives (non-incorporated community organisations) are another type of self-organisation of communities whose success depends on responsive institutional support, as described in the six case studies in England and Italy (Minora et al, 2013). Co-housing is a form of citizen cooperation for securing affordable housing, which is characterised by common multi-functional spaces, residents' constitutional and operational rules, participation, self-organisation, self-selection and agreement about common values in terms of the property management and behaviours (Chiodelli and Baglione 2013).

The above examples show that collaboration, self-organisation and self-governance are used in capitalist economic and political context as a pathway for accessing affordable housing. The citizens of former Yugoslavia who participated in the self-governance of businesses and communities from the 1950s until the 1990s have knowledge and experience that can be applied in initiating and managing self-governing housing cooperatives, and could assist in establishing them in the current economic and political system in the countries which emerged following the disintegration of Yugoslavia. Research that aims to capture that knowledge and develop new concepts for its application in the current socio-political and economic context would assist vulnerable citizens in developing housing cooperatives, and inform related institutional policies on allocation of land for cooperative housing projects that could prevent the emergence of informal settlements.

If the barrier to land access is removed for cooperative housing projects, there still remains a barrier of building cost. The next section explores approaches to overcoming that barrier through incremental housing construction, which [can be a slow process](#).

#### **4. Incremental and sustainable construction of self-built housing**

Incremental, phased housing construction helps to spread building cost over time and to add new spaces to a home as family grows. Traditional, vernacular dwellings were often conceived as housing compounds that can be extended at the ground level as required (Oliver, 2003). In cities, vertical extensions of housing are often planned, as evidenced by many half-completed private houses

awaiting for the sufficient accumulation of funds to enable construction of the upper storeys. Designing for incremental housing construction is a challenge which was taken on by Alejandro Aravena, a Chilean architect, who designed several social housing projects by implementing that concept – basic houses with the necessary sanitary equipment and two rooms were built and a space provided for future construction (Chatel, 2019). Self-help and self-build initiatives have recently grown in Italy (Marcetti et al, 2012).

With the aim to support sustainable and affordable building construction, there are ongoing explorations of possibilities for regional self-sufficiency regarding construction materials (Coelho, 2016) as well as for the use of agricultural waste products (Mastrolonardo and Mastrolonardo, 2010) and earth (Bosman, 2006) in self-build construction. Understanding current practices in self-help housing concepts (Tunas and Peresthu, 2009) allows for culturally responsive architectural and urban designs.

## 5. Discussion

The concepts of agile urban planning and cooperation in building affordable housing as incremental and sustainable self-built projects are being used to limit the building of informal, low quality housing in cities. Cooperation among citizens who need affordable housing is a necessary step to remove barriers to land access for such projects. Such collective demands can influence land management policies in cities, so that suitable land is provided and thus the development of self-built housing legalised. Agile urban planning can be supported by agile land management policies, which can be developed if policy-makers are responsive to the population's needs. In addition, the development of a wider range of scenarios and models for a rapid management of potential negative impacts on a city of various socio-economic, political and environmental disruptions will assist in minimising them.

One of the barriers to citizens' cooperation regarding their common interest in self-building of affordable housing is their ability to find other interested citizens with whom to initiate cooperation. Research by Chioldelli and Baglione (2013) indicates that such initiatives often start through informal conversations, which is not the most efficient way of mobilising a sufficient number of people. A more efficient route would be to establish a formal communication channel between city planning and management services and the citizens in need of affordable housing, and to support their cooperation.

Agile urban planning requires a range of logistical skills and access to information and data related to urban infrastructure locations and capacities. Availability and easy access to such information is increasingly enabled through

information communication technologies, essential for urban planners and architects who wish to engage in more agile urban planning and to design adequate solutions. The concepts of agile urban planning and incremental housing design for self-building are aligned with the goals of creating sustainable built environments and should be included in the education of architects and urban planners.

## 6. Conclusions

The brief overviews of new concepts related to urban planning, architectural design for affordable housing and citizens' cooperation indicate how they can be used to reduce the development of illegal housing and their subsequent negative impacts on people's health and on the environment. The discussed potential actions for their implementation require further research that will inform the education of architects and urban planners, as well as the practice.

Lang et al (2018) suggest that there is the need for a "Collaborative Housing" research field that was initiated by Fromm (1991, 2000, 2012) and a group of other housing researchers in the 1990s. A development of that research area in the countries experiencing a transition from socialist to capitalist economic systems is needed. In the countries that were part of former Yugoslavia, capturing and transferring the knowledge of self-governance of businesses and communities could contribute to the development of new forms of self-governance within the current socio-political and economic context.

The outlined need for a more agile management of existing cities and planning of new ones, as well as the examples of some recent approaches in urban planning and architecture that are more responsive to the housing needs of people migrating to cities, aim to incite further exploration of potential improvements and innovation for the management and planning of cities.

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