

Eco-neighbourhoods of the future: can the G20 improve approaches to sustainable urban living?

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Executive Summary

UN-Habitat [estimates that](#) a staggering three billion people will require adequate housing by 2030. Despite the enormity and longevity of this crisis, the 2024 Rio G20 Summit was the first time the forum aimed to prioritise housing issues. Whilst this is a step forward for addressing housing shortages, it is also important to consider the long-term adaptability of new and existing neighbourhoods to climate change. This brief investigates how global housing needs can be met whilst ensuring environmental sustainability and preparing for climate futures. It identifies three key broad policy initiatives to ensure both the proliferation of quality housing and the longevity of urban areas: [‘Sponge Cities’](#) projects; post-neoliberal housing solutions; and walkable cities.

Combining sustainable planning schemes with post-neoliberal housing policies will reduce emissions, improve accessibility, reduce local impacts of climate change, and expand access to adequate housing. G20 countries must take a leading role across these issues as their combined financial strength, political capital, and global reach would be required for such sweeping changes. They must consider the successes and failures of fellow member states, including Brazil, in order to adapt policy to individual economic, social, and environmental ideas.

Sustainable housing in focus at the G20

The modern iteration of the G20 emerged from a world stage dominated by what Lula da Silva referred to as [‘broken paradigms and failing multilateral institutions’](#) Since then, the G20 [has evolved](#) into a key organ

of global governance, representing 80-90% of the world's gross product as well as 60% of the world's poor. This year's conference, now chaired by Lula, laid out [three key priorities](#): fighting against hunger, poverty and inequality; sustainable development; and the reform of global governance. Subsequently, it was announced climate infrastructure would be included in the 3rd session of the G20 Leaders' Meeting on Sustainable Development and Energy Transition.

Housing represents one of the key global challenges facing the G20 and beyond, involving shortages, infrastructure gaps, and radical climatic changes. An estimated USD [\\$2.8 trillion by 2050 is required to plug the existing infrastructure gap](#) in low and middle income countries. Whilst climate risks in housing and infrastructure development involve higher initial costs but have long-term financial benefits. The formation of the [Global Alliance against Hunger and Poverty](#) opens the door to expanding housing security for those in need, treating it as a basis for lifting individuals out of poverty. However, it fails to sufficiently address housing in its plan, with a worthwhile but limited scope on cash transfer, school meals and other programs.

This issue will be compounded by the oncoming climate crisis that will most affect those in vulnerable living situations. For instance, climate and weather-related disasters [have surged](#) 5 times over the past half-century, causing USD \$250bn in

damages in 2023. This accounts for the bulk of the USD [\\$301-330bn annual global infrastructure losses attributed to climate change](#). In a speech at the G20, Lula expressed fears over the increasing intensity and frequency of storms, and criticised previous climate agreements as 'benchmarks in frustration'. Those in vulnerable living situations are most at risk from climate disasters, and adapting neighbourhoods to be resilient to these challenges is vital to prevent further homelessness, human loss, and economic damage.

To reduce the impact of climate change on housing, the G20 has the opportunity to advance actionable climate infrastructure discourses. The G20's position as a negotiating forum of the world's powers enables it to break obtuse deadlocks that may [break down in the more iterative](#) negotiations of the UN. The forum's position as a more legitimate representative of global economic and political interests relative to the G7 increases the scale and impact of the negotiations.

Sponge Cities

To achieve the goals to build a 'just and sustainable planet', G20 countries must consider endorsing 'Sponge Cities' as a holistic approach to addressing their urban sustainability objectives. These policies aim to [transform traditional urban areas into green alternatives](#) that capture, control,

and reuse precipitation to reduce flood risk, water shortages and groundwater extraction. In practice, it involves: replacing watertight surfaces with permeable materials; construction of water storage and infiltration facilities; remediation of damaged ecosystems; and separating drainage systems to reduce water contamination via sewage overflow.

Sponge cities have been extensively and successfully utilised in China, with plans to expand to [80% of Chinese cities by 2030](#). Beijing [captured and reused 183 million cubic metres of rainwater in 2014](#) alone. Moreover, the scheme significantly reduced flooding. On July 21st, 2012, extreme flooding in the Chinese capital resulted in 79 casualties and 10bn Yuan in damages. This is a sharp contrast to floods on July 19th 2016 that occurred following construction of Sponge City projects that resulted in no flooding despite higher precipitation levels than the 2012 floods. This is possible due to Sponge Cities' capacity to soak up at least 70% of rainwater into underground stores. They also proved to reduce the urban heat island effect in Beijing — a warm microclimate that [forms around urbanised areas](#) leading to reduced human habitability, particularly in hot climates most at-risk from global warming. G20 countries must learn from their fellow member state, and continue to explore these approaches due to their collaborative, evidence-based approach, and proven effectiveness.

There are fears, though, particularly from developing countries, concerning a lack of available technologies, training, and funding — compounded by administrative fragmentation. At Think20, [Thrasher et al](#) explored how research indicates that current IP protection discourages technology transfer and slows diffusion of innovations. As holders of much of the world's licences, the G20 should seek to resolve access disparities by seeking to build consensus towards structuring IP rules to allow for wider access to critical climate technologies, with a particular emphasis on sharing China's sponge city expertise and knowledge to countries most in need. Despite discussion at T20, the [leaders' declaration](#) only makes mention of vague voluntary technology transfer with no defined goals.

Implementation of Sponge-cities at a macro-scale encourages collaboration and replicates the localised natural water cycle in a drainage basin. [Computer models able to simulate stormwater management](#) should be used in tandem with land-use maps to develop a standardised approach to mimic water treatment processes via nature-based-solutions. Since the Rio Declaration in 1991, all climate treaties have included commitments for north-south technology transfer. As it leaves the birthplace of international climate cooperation, if the G20 wants to continue in their lineage it must endorse concrete commitments.

Post-Neoliberal Housing Solutions

Increasingly extreme climatic conditions accentuates the need for quality housing for all. The market-based approach that dominates global housing policy has exacerbated existing housing inequalities as private profit has prevailed over addressing housing needs. There are an [estimated 100 million homeless people globally, and 1.6 million living in substandard conditions](#). As global economic and political leaders, the G20 must recommend and promote global cooperation on post-neoliberal housing approaches that prioritise affordability, decommodification, and democratisation of the sector via proliferation of social housing and bottom-up planning strategies.

At a local level, Brazil has made numerous progressive advances to tackle Brazil's growing homeless population, which is estimated at [between 220,000 to 1.2 million](#). The federal supreme court decriminalised homelessness in August 2023, preventing local governments from forcibly removing rough sleepers from the streets. In December that year, the Father Julio Lancellotti Law (2023) was introduced to tackle hostile architecture, named after a catholic priest who famously used a sledgehammer to demolish sharp anti-homeless rocks installed under a São Paulo bridge. Lula's concerns over a lack of direct action to address housing and homelessness led to the introduction of the Ruas Visíveis (Visible Streets) program in

April 2024 pledging USD \$140 million to guarantee rights for homeless people. It also includes an educational campaign to tackle 'aporophobia', the fear of poor people, which contributes to a [stigma that burdens homeless people's efforts to find employment](#). These ambitious plans could be replicated and adapted globally to address challenges faced across homeless communities.

As the summit departs Rio, world leaders must also consider the pitfalls of Brazil's overreliance on home ownership over social renting. Housing policies promote ownership via [high subsidies, low monthly instalments, and easing of legal requirements](#) in contracts. However, this unintentionally segregated many poorer residents into the cheaper outskirts of the city, far from downtown job opportunities and transit. Home ownership limits residential mobility, hindering some poor residents' ability to move for employment. These subsidies have also inflated the real estate market, as seen in São Paulo where real estate prices went up 153% between 2009 and 2012.

There has been growing demand globally to offer permanent, independent housing without requiring participants to meet requirements to earn their right to a home — thereby reducing housing. As Woodhall-Melnik and Dunn describe, this 'Housing First' principle increases housing and programming retention and reduces homelessness, albeit neither Treatment

nor Housing First strategies have [conclusively proven to reduce substance abuse](#). Although the initial cost is higher, this is offset by lower emergency department use, inpatient hospitalizations, and criminal justice system use, as well as its ability to reach those unwilling or unable to meet treatment requirements. For instance, Housing First participants in treatment programs have a 52% retention rate compared to 20% overall.

The largest city in this year's host nation, São Paulo, has utilised a Housing First philosophy via the construction of micro homes, a break with the 'ladder' approach more typically employed in Brazil. This constitutes construction of small neighbourhoods of [~18m² dwellings](#) at a [cost around USD \\$4,500 each](#). The program is open source, with guidelines, materials, equipment and an assembly guide accessible online. Concerns have been raised over the concentration of these small homes creating a ghetto, and architect Raquel Rolnik expressed fears that the scheme underutilised existing and abandoned homes. Despite these issues, 65% of participants secure employment and permanent housing within six months. Additionally, whilst tiny home villages have a higher initial cost than subletting private rentals, they have considerably lower long-term maintenance expenses. Middle and lower income countries where informal housing is more prevalent, urban mobility is reduced, and employment is less stable

would be suited to adopting this approach; however the G20 conference failed to seize the opportunity to discuss and study this blueprint in Rio.

Finland is a global leader in Housing First strategies, and should be a shining example G20 countries should follow. [Homelessness was in effect completely eliminated by US standards](#) and halved by their own (much higher) standards from 1987 to 2019, largely attributed to the introduction of Housing First. Whilst this approach requires a higher initial cost, [it is offset by](#) lower emergency department use, inpatient hospitalizations, and criminal justice system use, as well as its ability to reach those unwilling or unable to meet treatment requirements. If the G20 truly wants to eliminate poverty as stated, higher income G20 countries must view housing as a prerequisite to personal growth as opposed to a reward. Unfortunately, it is clear that the G20 currently lacks the required desire to achieve this goal, encapsulated by the absence of any mention of homelessness in the [Rio 2024 leaders' declaration](#).

Walkable cities and sustainable urban design

Rayne Ferretti, the UN-Habitat representative at the G20, argues that for housing to be 'adequate', [it requires readily accessible infrastructure](#). Addressing housing poverty therefore requires radical solutions to improve accessibility. The '15-

minute city' concept has risen to prominence as an urban infrastructure solution that aims to ensure basic services are within a 15-minute walk or bicycle ride of most residents — thereby tackling accessibility issues. Proponents claim [the initiative promotes sustainability](#) and accessibility whilst reducing social isolation, car dependence, and pollution. 15-minute-cities emphasise optimal density to balance population with social, economic, and environmental needs whilst utilising multi-purpose spaces to maximise spatial efficiency. For example, school playgrounds can double as public parks when shut over holidays.

The 15-minute-city potential of an urban area can be determined by population spread and spatial mismatches between facilities and populations in underserved areas to strike a balance between serving the population and judicious resource expenditure. This also prevents over-provision and underutilisation of facilities. The [accessibility needs of over 95% of residents can be addressed within realistic spending](#) and facility distribution limits. Other challenges to achieve this model include inadequate cycling infrastructure, lack of connectivity, restrictive growth boundary policies, conventional urban layouts and the varied distribution of populations within cities. Nonetheless, many cities, especially in European G20 member states, are [closer to the 15-minute standard than may be expected](#), requiring

minimal changes and therefore lowering costs - although global implementation, particularly in North America and Asia remains challenging.

A widespread conspiracy theory pertaining to the 15-minute-city gained popularity during the COVID-19 lockdown, resulting in [protests and receiving scorn from elected officials](#). This conspiracy sees planning that encourages us to use cars less as a limitation of our freedom rather than an opportunity to live in more vibrant and less polluted neighbourhoods. Of course, this is an inaccurate representation. 15-minute-cities are merely an academic ideal that promotes urban walkability, not a totalitarian, impenetrable 15-minute travel ban. In fact, these schemes arguably lead to improved freedoms for most residents due to improvements in public transport and pedestrian mobility. The G20 Digital Economy Working Group made [combating fake news a priority](#), and Brazil's First Lady made extensive [reference to information integrity in her opening speech](#). These discussions, whilst important, must be translated into actionable policy to combat conspiracy, especially climate misinformation.

Issues pertaining to feasibility of walkable cities can also be addressed by Superblocks: roughly 400m by 400m zones with pedestrianised streets that are cut off to outside vehicles. They reduce private vehicle use by at least one third, increase urban vegetation, and provide new,

accessible public spaces at a time when our cities are becoming increasingly restricted and privatised. The impact of these measures on emissions could be significant, as [cities produce 70% of greenhouse gases, half of which is due to transportation](#). If the G20 is to promote Superblocks, this must be in tandem with ensuring accessibility of green space. [The WHO recommends 9m² of green space per capita](#). There are vast discrepancies however, with many cities particularly in Asia falling short of this goal — notably Chennai in India, which can manage only 0.81m² per capita. The G20 can work alongside the WHO and member states to ensure cities meet minimum green space requirements for health.

Is the G20 able to implement sufficient change?

In his speech at the third Leaders' meeting, Lula argued that climate initiatives 'will have no effect if the international community does not come together', showing a recognition of the level of collaboration needed, but criticising the lacklustre ambition so far. The near absence of housing in the leaders declaration and failure to make legislative progress towards moving forward net-zero goals to 2040 indicates a lack of ambition. This is despite stating the Rio conference would represent a renewed focus on the

issue of housing, and admitting the lack of attention historically.

A further USD [\\$7 trillion is needed per year until 2050 in order to achieve net zero goals](#). This is equal to the global total of fossil fuel subsidies as of 2022, indicating that the financial potential for a shift to sustainability is readily accessible, governments and corporations just lack sufficient desire. If the G20 is serious about housing and climate infrastructure, they must adopt more radical measures. However, within the G20 there is a vast array of different national interests and within that an embedded influence of capital. This therefore limits the possibility for a global shift towards post-neoliberal and climate-centric planning instead of the steady creep of small, singular policy initiatives in individual countries.

Combining sustainable planning solutions with post-neoliberal housing strategies will reduce emissions, ensure neighbourhoods are prepared for possible climate futures and vastly improve access to adequate housing - but global collaboration and north-south financial investment facilitated by organisations such as the G20 is imperative to implement these measures.

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