



## **Situated Smartness: *Communitas* as a Framework for Aligned, Civic, and Speculative Infrastructures**

Holly Baker

Columbia GSAPP, New York, US, [hyb2106@columbia.edu](mailto:hyb2106@columbia.edu)

### **Abstract**

Under the guise of technological progress, smart city frameworks render themselves increasingly inadequate in addressing communal needs as they so-often rely on extractive techniques of surveillance capitalism. *Communitas: Means of Livelihood and Ways of Life* (1947) by Percival and Paul Goodman offers a critique of consumerist society and proposes a form of visionary, techno-socialist planning principles. Juxtaposed with contemporary critiques of smart urbanism—particularly its emphasis on efficiency, data-driven governance, and technological optimization at the expense of public space—*Communitas* offers a valuable perspective on participatory planning. Smart systems have often emerged from the well-known Silicon Valley imaginary, where scalability, control, and productivity dominate. A critical-propositional framework is introduced and focuses on addressing two dimensions of future urbanism: energy infrastructure and public participation. The article cites Taiwanese digital governance as an example to synergize technological innovation and democratic planning in the development of more just urban futures.

### **Keywords**

smart city, community, Taiwan, participatory governance, solar protocols, energy systems

### **1. Introduction**

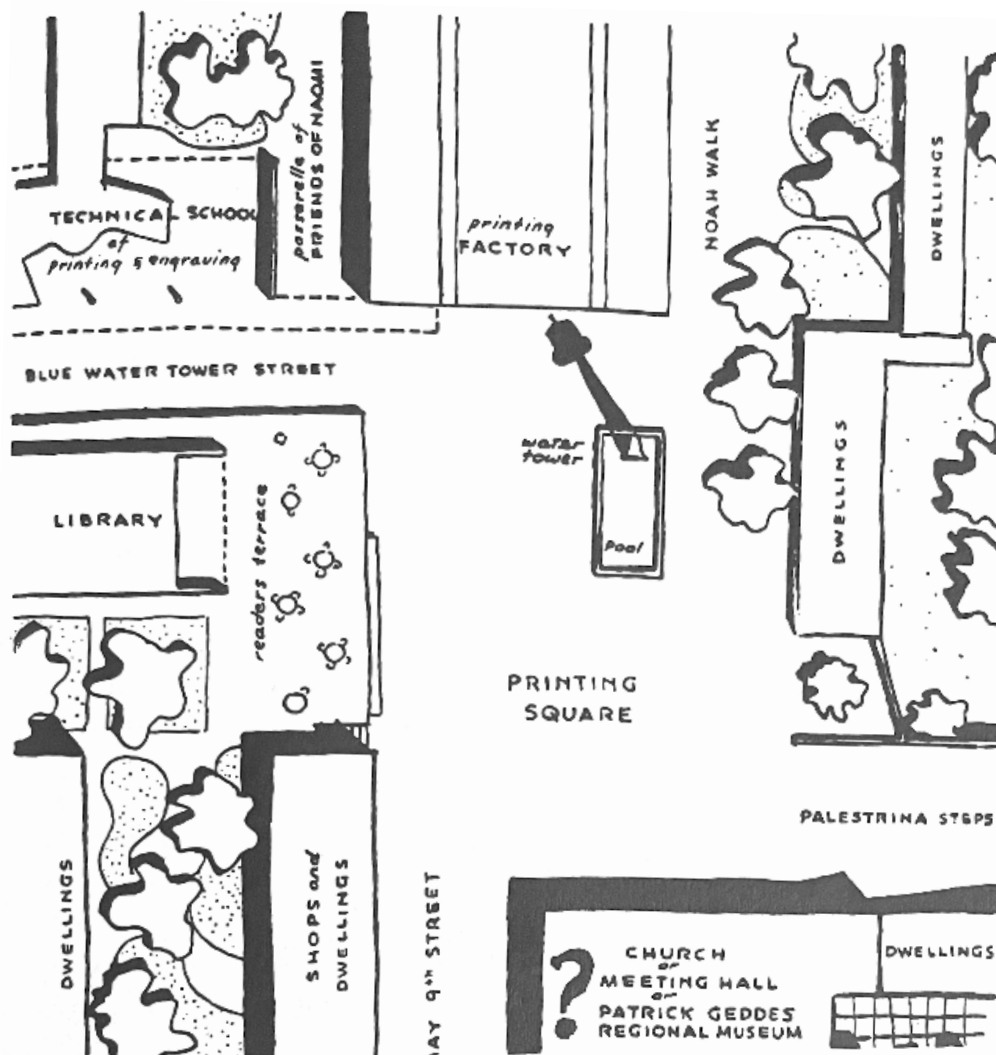
The contemporary image of the smart city is by now commonplace, and discourses over recent years have taken a routine script: critiques rightly center around ongoing concerns over surveillance and data extraction, yet the repetition has rendered them rarely surprising. While critics like Shannon Mattern propose nuanced theoretical alternatives to argue that a city is not a computer, tried-and-tested smart infrastructures that meaningfully center community participation are still few and far between. Digital technologies like computers, sensors, and servers are fleeting assemblages of extracted materials energized by electricity. Fostering a physical and material awareness that directly connects and resonates with energy levels of a city itself can open new possibilities for urban intelligence.

In an interview in *Commentary* magazine, Percival Goodman claimed that “the first purpose of architecture is not the building but the town square” (Goodman, as cited in Abrams, 1947). Expanding this definition of the town square to encompass both the physical city square and civic engagement more broadly, this article reconsiders Goodman’s seminal text *Communitas* through the lens of community-driven technological infrastructures. Specifically, it aims to unpack the book’s second urban proposal “A New Commune” and compare this with contemporary notions of participatory digital governance in Taiwan, to eventually speculate on alternative infrastructures in the context of situated smartness in urban space.

**2. *Communitas* & Civic Infrastructures**

Published in 1947 and written collaboratively by Paul and Percival Goodman, *Communitas: Means of Livelihood and Ways of Life* (Goodman & Goodman, 1947) sought to satirize urban consumerism and critique technologically-driven, bureaucratic planning and free the discipline from the shadow of Modernism. Above all they placed an intense focus on the subject—i.e. the society that would live, work and critically change the urban environment designed for them. “The New Commune” is presented as the second proposal in the book (Goodman & Goodman, 1947). Hexagonal in form, the center of the

city is highly dense and irregular. Two main typologies prevail: the City Square and the 4-acre Farm. Designed to be biking distance from one another, city squares are able to be altered to fit the needs of the residents in that area, whilst farms form the bedrock of economic sustainability and use the city’s sewage as fertilizer. A process of metabolic relations is enacted from the square to the farm and the plan strives for a closer relationship between the personal and productive. “The New Commune” places community interests at its core, with visible feedback loops from both food production and citizen participation for use-cases.



**Figure 1.** “A square in the town: integration of work, love and knowledge”.  
Source: Percival & Paul Goodman, *Communitas*, 1947.

From a social perspective, the Goodmans argue that industrial work is meaningless due to the reductionist effects of Taylorism—where each worker is only acquainted with a few processes, and has no concept of the whole order of production. Workers are, instead, encouraged to bring their own specialism to the table while contributing to how goods are distributed in a wider, comprehensive scheme. A decentralized society emerges, whereby productive units rely on their own expertise and bargaining power of what they have to offer to cooperate with the rest. An integrated community drives living and industry for collective welfare. The Goodmans articulate:

Economic plans... do not touch the essentially modern problems: the selective use of machine technology, the use of an available surplus, and the distance between means and ends. The concrete solutions of these problems are community plans. Our concerns are how to make the multitude of goods good for something, how to integrate the work and culture, and how to keep an integrated community plan from becoming a plan for complete slavery (Goodman & Goodman, 1947, p. 119).

In an usual critique that situates itself between both industrial capitalism and state socialism, the Goodmans accept the advent of a consumerist society—“the multitude of goods”—yet propose integrating this within community living structures to make them “good for something” (Goodman & Goodman, 1947, p. 119). It is this acceptance of consumerism, rather than total rejection of it, that makes their proposal particularly interesting when compared to modern day discourse on smart city planning. In this vein, although current iterations of smart cities are more-than-often highly flawed, technology is very much here to stay and rejecting it from our cities or negating its presence entirely is not realistic. It is necessary to imagine new modes of participation and innovation, more often than not, bases itself on rethinking past models.

Although written in 1947, far before the advent of mainstream computing, Paul and Percival Goodman approach technology in a particularly pertinent way through *Communitas*. They believed technology should

be accessible and participatory and critique technological determinism. The Goodmans are critical of technocratic perspectives that favour maximum efficiency and view humans as cogs-in-the-machine, and advocate the thoughtful integration of modern technology as a means to support social values. Favouring decentralized, small-scale systems that support local autonomy in communities, the Goodmans call for the intentional shaping of technology to support ways of life (Goodman & Goodman, 1947).

### 3. Against Obsolescence

‘Smart city’ as a term began to appear in urbanist literature in the 1990s, concretized by IBM’s definition as “one of instrumentation, interconnectedness, and intelligence” (IBM, as cited in Salter, 2022). Many critics including Chris Salter (2022) have criticized smartness due to its lack of focus on the human. IBM actually trademarked the term “smarter cities” in 2011, which marked an era of fetishized fixation on data-driven design and decision making, catalyzing an exponential race to being “smarter”, while giving an implicit hint that the city may be smarter than the resident itself (Salter, 2022). This smarter city quickly found itself being critiqued for being a site of surveillance, heightened commodity flows and information gathering facilities for the likes of Amazon and Alphabet.

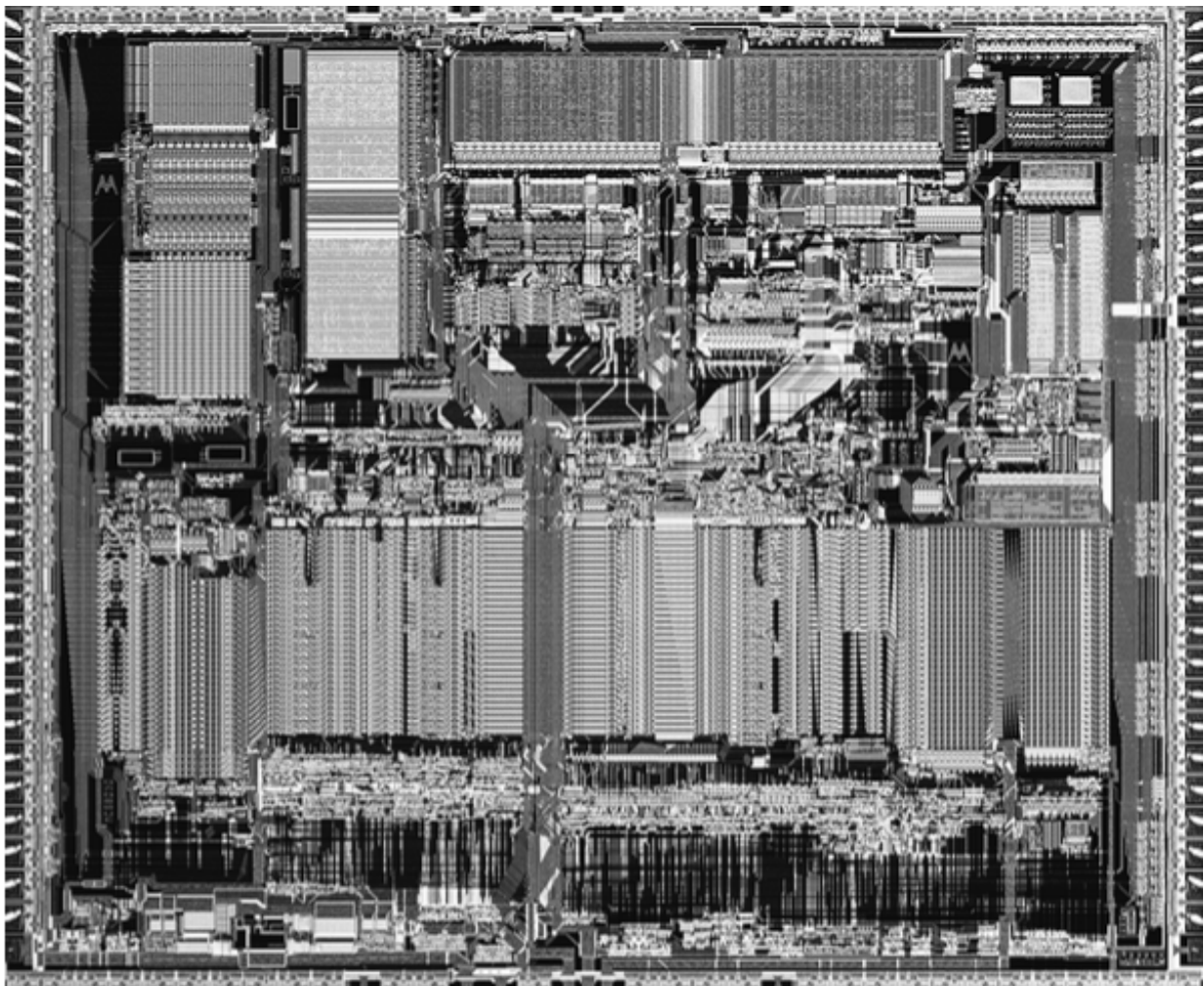
This momentum reached a height in 2017, when Alphabet’s Sidewalk Labs were commissioned to develop an area of Toronto referred to as Quayside. The basic idea: to design a city “from the Internet up”, explained by founding CEO Dan Doctoroff, and rethink infrastructure at the scale of a district (Bozickovic, 2022). A network of sensors across a 12-acre neighbourhood were set to continuously record data: from energy usage to inhabitants behaviors for the benefit of and continual improvement of the project’s overall system. Adding this digital layer caused huge concern; surveillance capitalism was seen to be hijacking governing power from local authorities. Sidewalk Labs pulled out of the project in 2020, and later was absorbed into Google and ceased to exist entirely when Doctoroff stepped down in 2021 (Bozickovic, 2022).

In an afterword to *Communitas*, published in the 1990 edition and written sometime between 1977 and 1989, Percival Goodman had already articulated a similar concern regarding technocratic urban planning:

The built environment of the late twentieth century differs from the past not merely because it uses greater chunks of material to make it, not merely because everything is more complicated and needs more fuel to keep it going, but because it no longer evolves from the climate, geography, or history of the place where it is; instead, the new environment is conceived at conference tables and pieced together on drawing boards, its design aspiring to be the result of computerized decision-

making suitable to the printed circuits of a society transformed into technology (Goodman, 1990, p. 227).

Highly advanced for its time, Goodman critique of technocratic urbanistic structures likens the city to a circuit board far before any discourse around smart cities had evolved. He furthers his critique of “computerized decision-making”, explaining that “during most of the twentieth century the future has been projected as just an artificial, urbanized world in which human muscle long ago replaced by machine is now preparing for the next stage– the human brain replaced by machine, the human brain redundant” (Goodman, 1990, p. 227). A clear lack of focus on the human is identified here



**Figure 2.** A circuit board resembling an urban layout. Source: Christoph Morlinghaus, Motorola 68030, 2016.

as technology stands at the forefront, eclipsing any opportunity for street life. Not only this but his concern for ecology was also hugely ahead of its time: referring to the built environment needs more fuel to keep going, “we know now at what a disquieting rate the machines have been using up mines, oil deposits, and forests: how much they pollute in the course of their producing and what they produce is also a pollutant” (Goodman, 1990, p. 228).

The very bedrock of technology co-opted to produce smart devices is, by design, a direct product from the shiny Silicon Valley imaginary—where efficiency, optimization, and infinite scalability drive all growth. These values, branded by “innovation”, quietly justify an ecosystem of extraction, disposability, and built-in degradation. The imaginaries offered by these technologies hide the material consequences of such digital acts: where our awareness of a seemingly immaterial cloud obscures the catastrophic ecological impact that supports these devices. Digital technologies are frameworks that prioritize, encode, and politicize certain ways of living, while threatening others with obsolescence (Winner, 1980). The actors behind these technologies hold the power to shape how knowledge is archived and stored, how relationships are formed and maintained, and how futures are imagined. As Mattern writes, “urban information is *made*, commodified, accessed, secreted, politicized, operationalized, preserved, and erased” with the advent of smart devices (Mattern, 2021, p. 64).

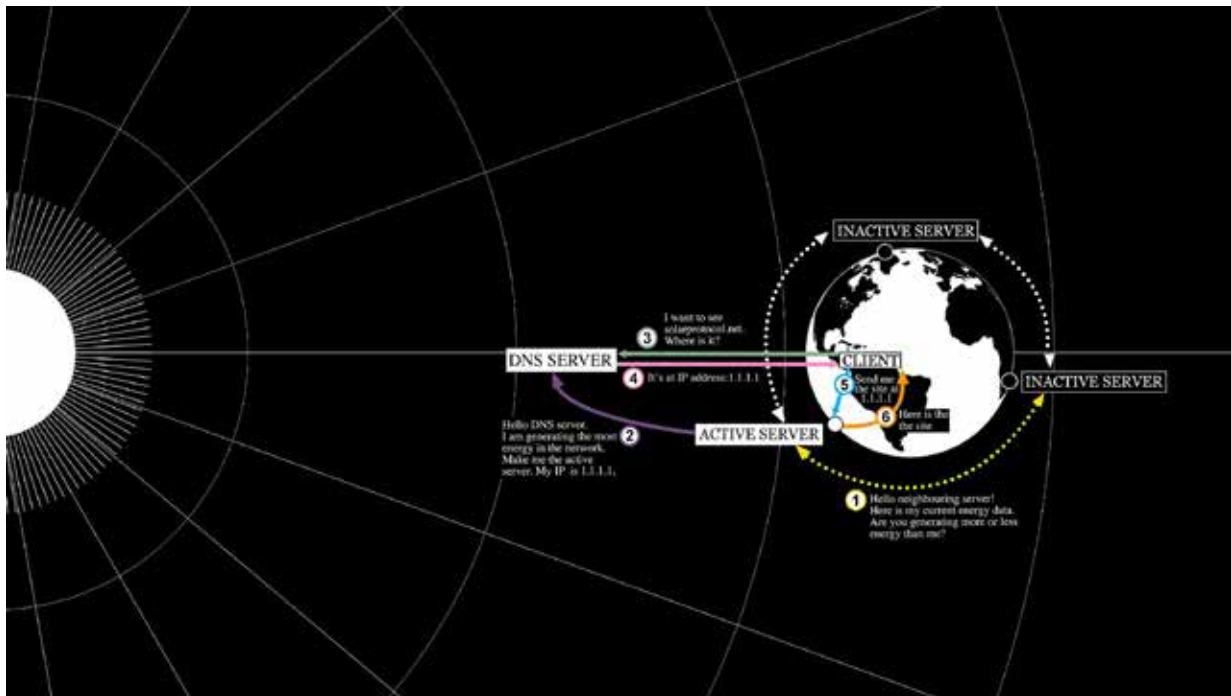
Digital sovereignty and diversified knowledge production, then, are both imperative points of consideration. Keller Easterling considers an alternative to ubiquitous computing and the unified treatment of civilians as data points and proposes “the coexistence of multiple, counterbalancing, contradictory logics, looking not for the next superior subsuming platform but a disposition of interplay between different coexisting platforms of information” (Easterling, 2015). Specifically related to smart urbanism, Mattern reiterates:

It's essential to make space in our cities for those diverse methods of knowledge production and stewardship. And we have to grapple with the political and ethical

implications of our methods and models, embedded in all acts of planning and design. *City making* is always, simultaneously, an enactment of *city knowing*—which cannot be reduced to computation (Mattern, 2021, p. 72).

Amongst these critical perspectives, something can be gleaned from considering Goodman's term ‘neo-functionalism’ (Goodman & Goodman, 1947). The term is an inherent rejection of Modernist functionalist doctrine; instead of viewing an urban plan as supporting a particular function, ‘neo-functionalism’ critically assesses what way of life the plan supports rather than achieving any particular purpose. A nuanced series of tensions are created when technological intervention is applied to participatory urban planning. Applying the framework of ‘neo-functionalism’ can shed light on strategies for community-driven smartness. Significantly, it enables adaptability: a functional plan disintegrates if that function is no longer required, whereas, a neo-functional plan may persist as it caters for supporting constantly changing ways of life. Ultimately, ‘neo-functionalism’ positions itself and acts against obsolescence.

Broadening a typical definition of sensing – IBM's “instrumentation” – can open up new possibilities for the exchange of information beyond numeric value. To achieve relational reciprocity in data-infused governing decisions, sensing is needed across multiple scales. ‘Neo-functionalism’ finds a home here; as an enabling strategy, the term opens up possibilities for new ways of life. As Goodman writes, “quite suddenly we've come to realize what mismanagement and ignorance of nature's symbiotic ways have done or threatens to do to our planet” (Goodman, 1990, p. 228). Seeing through a translation framework, as pioneered by Bruno Latour (1991), a hybrid network that critically understands the role of non-humans and natural agents resonates with Goodman's beliefs. Scalar sensing, from the individual to the collective, is crucial to address the multiplicity of needs, opinions and messy formats a city requires to function on.



**Figure 3.** Diagram for a Solar Protocol. Source: Solar Protocol website, accessed 2025.

The Solar Protocol presents an alternative to conventional, energy-hungry web servers: it forms a solar-powered web hosting network where servers are located around the world ("Solar Protocol," 2021). Traffic is routed to the server with the most sunlight, creating an internet speed that is aligned with environmental dynamics. This type of decentralized global network challenges the prevailing digital culture of being always online and, instead, embraces fluctuation in sunshine. The protocol provides just one example of an alternative infrastructure that aligns technology with ecological vitality.

#### 4. Alignment in Taiwan

Taiwan is cited repeatedly for being a leader in digital efforts connected to smart cities. Although some repeat similar patterns explored in other countries like Singapore, a particular aspect makes them stand apart: the integration of participatory digital platforms for voting on urban development and issues around digital governance. While huge areas of the city are monitored and twinned, all data is published as open-source; fostering transparency and collective decision-making

at scale. Some of this decision making takes the form of 'Alignment Assemblies', a hybrid of both in person and online voting platforms (moda, n.d.). Launched by Audrey Tang, Taiwan's founding Minister of Digital Affairs, the forums gathers the opinions of thousands across the country on how to responsibly deploy AI regulation (Lohr, 2024).

Within the US' current political climate under heavy influence from an all-consuming Muskian matrix to vindictive cyber attacks via AI platforms designed to skew public opinion against countries like Taiwan, civic engagement in technology regulation is more important than ever. This paper explores methods in which we effectively design physical spaces for these digital infrastructures to play out. From town halls to the town squares, spaces for community governance are one place to start when fusing digital participation with public space. Taiwan Social Innovation Lab, located in the Xinyi District, provides one such example: after rounds of public deliberation, the site is a hybrid civic space described as a policy prototyping zone ("Social Innovation Lab," n.d.). TSIL hosts live public voting



**Figure 4.** Exterior video of Social Innovation Lab in Taipei City. Source: Taiwan Contemporary Culture Lab website, accessed 2025.

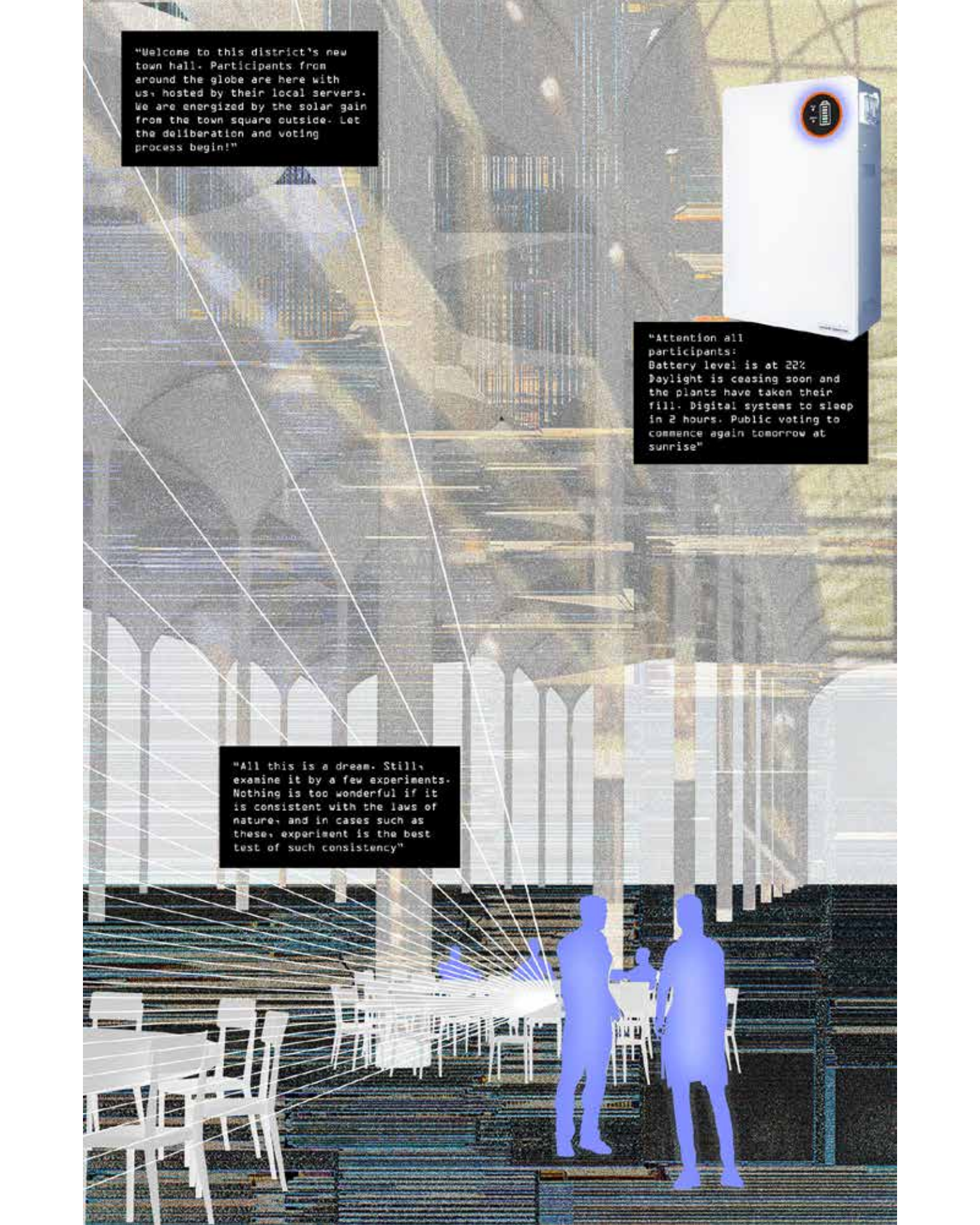
assemblies with feedback loops linked to digital platforms – a physical extension to initiatives such as ‘Alignment Assemblies.’ Converted from an industrial communications center of the Air Force Command Headquarters, the lab centers civic-focused digital practice to enable responsible localized innovation.

Tang gives a series of small examples that have wide-reaching impact: the “g0v Air Pollution Observation Network” is a network that utilizes a simple air quality sensor called an “airbox” for residents to participate and provide real-time air quality information, from their balcony, school, or place of work (Tang, 2018). Importantly, the sensors aren’t built in but mobile and leave residents with the choice to opt in or opt out. Without technology imposed upon them, thousands of people decided to participate, accumulating a huge database that is published as open source data for people to check on a day-to-day basis. This small digital overlay shows that smart devices do not have to occupy

vast infrastructural space or be imposed on a population for them to have significant impact.

vTaiwan is a virtual platform for democratic deliberation, hosting various initiatives such as “Alignment Assemblies.” Tang, a hacker turned politician, states that the letter v was chosen to stand for “virtual” but could very easily also stand for “vulnerable” (Tang, as cited in Spinney, 2024). As a nation whose sovereignty is only formally recognized by a handful of countries, and one that is facing growing authoritarian pressure from the People’s Republic of China, Taiwan’s commitment to democratizing technology can be seen as both an issue of national security and an act of resistance.

**Figure 5.** (next page) A new town hall. “All this is a dream” quote attributed to Michael Faraday. Collage includes an image of Taipei’s Social Innovation Lab. Source: Holly Baker.



"Welcome to this district's new town hall. Participants from around the globe are here with us, hosted by their local servers. We are energized by the solar gain from the town square outside. Let the deliberation and voting process begin!"

"Attention all participants:  
Battery level is at 22%  
Daylight is ceasing soon and the plants have taken their fill. Digital systems to sleep in 2 hours. Public voting to commence again tomorrow at sunrise"

"All this is a dream. Still, examine it by a few experiments. Nothing is too wonderful if it is consistent with the laws of nature, and in cases such as these, experiment is the best test of such consistency"

## 5. Speculative Proposal: A Decentralized Town Hall in an Energized Town Square

The following proposal aims to address aspects of 1) Energy infrastructure and 2) Public participation. In the spirit of the Goodmans, the framing is critical-propositional i.e. forming a critique through a proposal. The visualization aims to articulate hints of strategies that fuse democratic digital engagement with built form, contributing new urban frameworks in the context of our rapidly evolving digital landscapes.

What if a smart city aligned with the pace of the city itself? Imagine its learning systems—sensors, devices, and servers—powered entirely by energy harvested from the city's own byproducts and exhaust. Subway heat, solar gain, and waste converted through pyrolysis could all provide clean and latent energy to sustain a digital infrastructure. Both residents and policy-makers would receive real-time feedback: if it was a cloudy day, then data collection may slow, reflecting a temporary dip in available energy. If a city, for example, had very little sun but was proficient in processing waste, that could be the source of energy to power any smart infrastructure. This methodology evokes the metabolic relations showcased through waste to fertilizer community organizing in “The New Commune”. Each city has the opportunity to join a network like the Solar Protocol, where they contribute their greatest energy asset and host other city's data with any surplus energy they may have. Energy trade alliances and mutual relations are key in this context.

Drawing on Taiwan's ‘Alignment Assemblies,’ a new kind of town hall embraces decentralized public participation and invites diverse voices in the process of shaping shared futures. Virtual and physical round tables become the spaces where collective direction on smart urbanism is negotiated. An infrastructure that remains flexible and relational—responsive to people and place—are key to this model and adapting to changing conditions. This provides opportunity for the emergence of digital acts that honor reciprocity and ongoing feedback loops for mutual care. This town hall would serve as a prototype for other cities to learn from; all code used for networking participation platforms is open source and accessible.

## 6. Conclusion

In Goodman's afterword to *Communitas*, he predicts the urbanised world in the year 2020. His tone is optimistic, a reaction to the limitations and scarcity that he attributes to dominating the late seventies. In addition to predicting global disarmament, he stresses that urbanism will accommodate the needs of a new world-wide organization called the ‘Basic Economy’, “predicated on the relationship between ecology and economy, and the need for recognizing both concepts” (Goodman, 1990, p. 231). These predictions, in hindsight, give the state of the world now far too much credit. Goodman's proposal of a ‘Basic Economy’ asks what if architecture and planning facilitate a benevolent relationality between all aspects of the urban environment? In this vein, I will add one further ‘E’ to Goodman's concept of *The Double E* and contribute The Triple E: Ecology, Economy and Entropy. Entropy, here, tracks the processes of energy loss, digital decay and adds a temporal dimension to thinking about digital processes.

To effectively predict and design for the future, we first need to learn from the past. Integrating intelligence into existing cities needs to create both meaningful formats for civic participation, as well as leveraging technology for social good with an awareness of its entropic lifespans. Technological choices need to be guided by shared values and able to support ways of living beyond surveillance. By aligning digital innovation with ecological sovereignty, such frameworks can resist extractive economies and ensure that a city's digital and physical future remains interconnected, adaptable and self-determined.

## Acknowledgements

This paper grew out of an extensive study of the Goodmans' plans in “Communitas” as part of my class “49 Cities” with Amale Andraos during the Spring 2025 semester at Columbia GSAPP. Many of the concepts articulated in this paper related to slow computing have been influenced by a design studio project that I completed with André Barros and Xiaoxiao Jiang as part of the “Data Mourning” clinic led by Dr. Marina Otero Verzier and Dan Miller, where our project investigated alternative digital infrastructures in Tuvalu and proposes

digitization as a communal endeavor. Aside from infrastructure, I came across the other prevailing notion mentioned in this paper “Alignment Assemblies” through a design studio named “Carbon Removal Architecture” led by David Benjamin. Thank you to all.

## References

- Abrams, C., 1947, November. *Communitas*, by Percival and Paul Goodman. Commentary.
- Bozиковic, A., 2022, March 22. The End of Sidewalk Labs. *Architectural Record*. <https://www.architecturalrecord.com/articles/15573-the-end-of-sidewalk-labs>
- Easterling, K., 2015, April. Information in Real Space, *e-flux Journal*, (64).
- Goodman, P., & Goodman, P., 1947. *Communitas: Means of Livelihood and Ways of Life*. University of Chicago Press, Chicago, IL.
- Latour, B., 1991. *We have never been modern*. C. Porter, Trans. Harvard University Press, Cambridge, MA.
- Lohr, S., 2024, October 15. Rethinking ‘checks and balances’ for the A.I. age., *The New York Times*. <https://www.nytimes.com/2024/09/24/business/ai-democracy-government.html>
- Mattern, S., 2021. *A City is Not a Computer: Other Urban Intelligences*. Princeton University Press. Princeton, NJ.
- Ministry of Digital Affairs (moda), n.d. Accessed November 11, 2024. <https://moda.gov.tw/en/major-policies/alignment-assemblies/1453>
- Salter, C., 2022, June 24. The Smart City is a Perpetually Unrealized Utopia. *MIT Technology Review*. <https://www.technologyreview.com/2022/06/24/1053969/smart-city-unrealized-utopia/>
- Solar Protocol, n.d. Accessed May 8, 2025. <https://solarprotocol.net/index.html>
- Spinney, L., 2024, July 1. The hacker turned politician using digital tech to reimagine democracy. *New Scientist*. <https://www.newscientist.com/article/mg26334980-600-the-hacker-turned-politician-using-digital-tech-to-reimagine-democracy/>
- Tang, A., 2018, February 11. *Social Innovation in Taiwan*. Medium. <https://medium.com/@audrey.tang/social-enterprise-in-taiwan-3eb96d4dc8a7>
- Winner, L., 1980. Do artifacts have politics? *Daedalus*, 109(1), 121–136.