

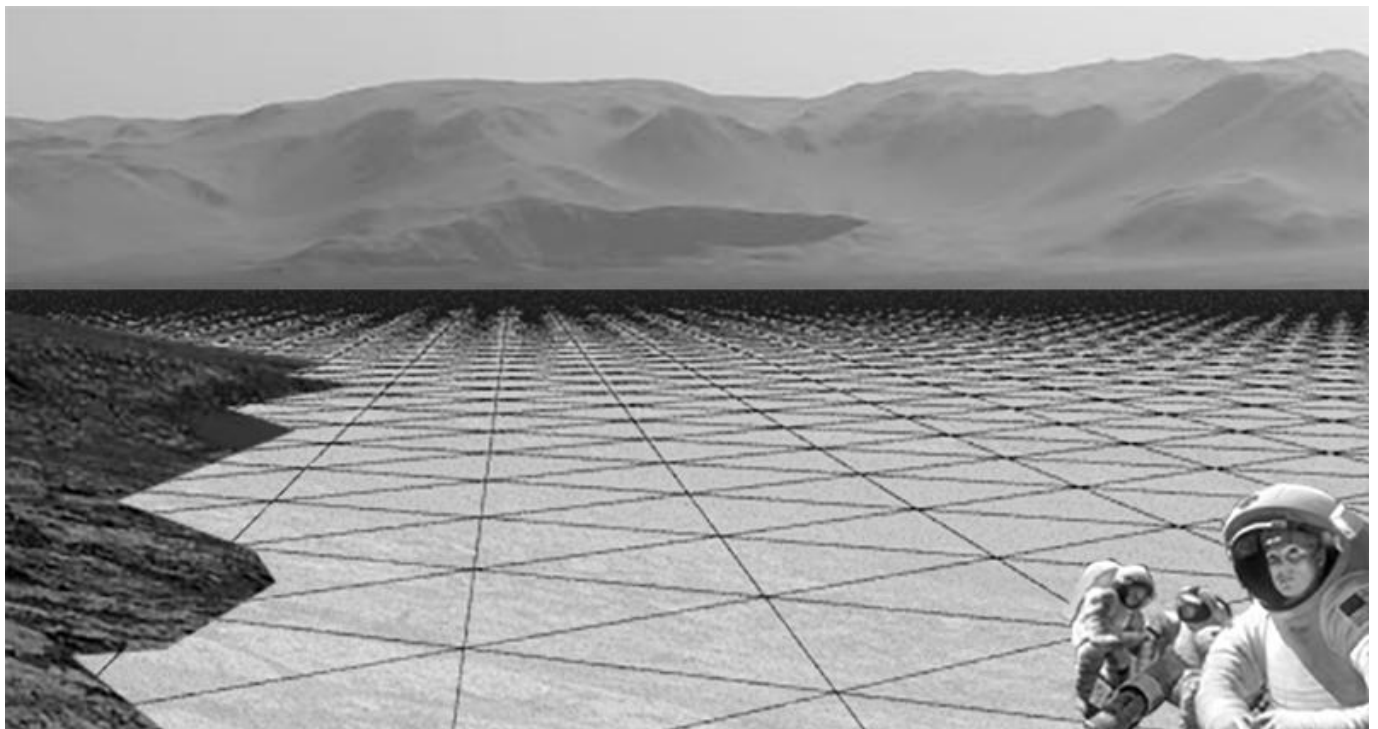
the space that launched a thousand ships

Isotropic planning for resilience and equality, a distributed network of Martian archipelagos.

or

How to make civic space in a world that has no Breathable Commons

[initial concept for Mars Society comp entry - by [Rob Annable](#)]



"For those who, like ourselves, are convinced that architecture is one of the few ways to realise cosmic order on earth, to put things according to reason, it is a "moderate utopia" to imagine a near future in which all architecture will be created with a single act, from a single design capable of clarifying once and for all the motives which have induced man to build dolmens, menhirs, pyramids, and lastly to trace (ultimate ration) a white line in the desert."

Superstudio: The Continuous Monument (1969)

1.

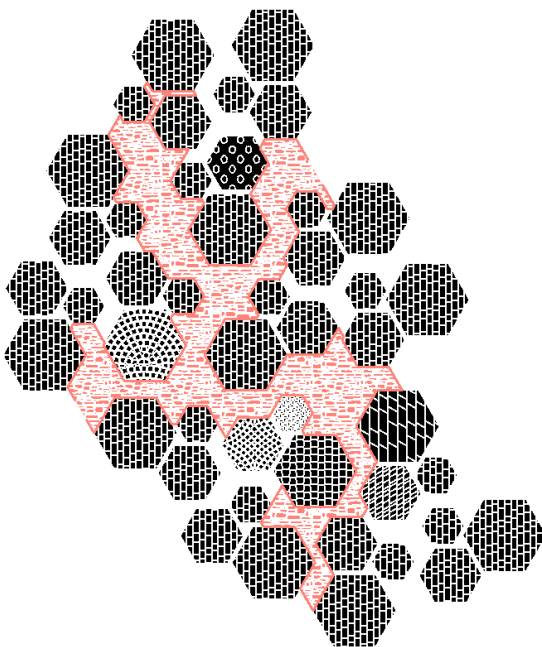
"...perhaps one could imagine that 'space is hard' in another sense of the word, a kind of solid poché - an inversion of figure and ground in which humans carve out a cozy hollow softness within that 'hard' space."

Space Settlements, Fred Scharmen

In the figure-ground map of a utopian enclave built of individual dwellings surrounded by uninhabitable wilderness on an inhospitable planet, the black poché of a Nolli plan¹ is inverted and seeps into the city, suppressing movement and preventing the formation of shared civic space. If left unchecked this inversion risks denying a future Martian Civitas from their rights to the *res communis* - the commons that must exist in every city to provide freedom of action and resilience to tyranny.

This proposal for a new city-state on the surface of a planet named after the Roman god of war looks to the history of Terran urban design, city planning and speculative fiction to expose the dystopia within the utopia². It considers how isotropic planning and a distributed network between polycentric archipelagos of inhabitation could respond to the question: How do we make civic space in a world that has no Breathable Commons?

Furthermore, it considers how to prevent the inevitably dystopian outcome that will be created when the dreams, desires and emancipatory politics of the many - a million strong NewSpacer Civitas - could be extinguished by the few in control of the air supply. How might the resources required to form a new city-state be accessed fairly through an architecture and infrastructure that aims to foster equality and avoid the tragedy of the unregulated commons?



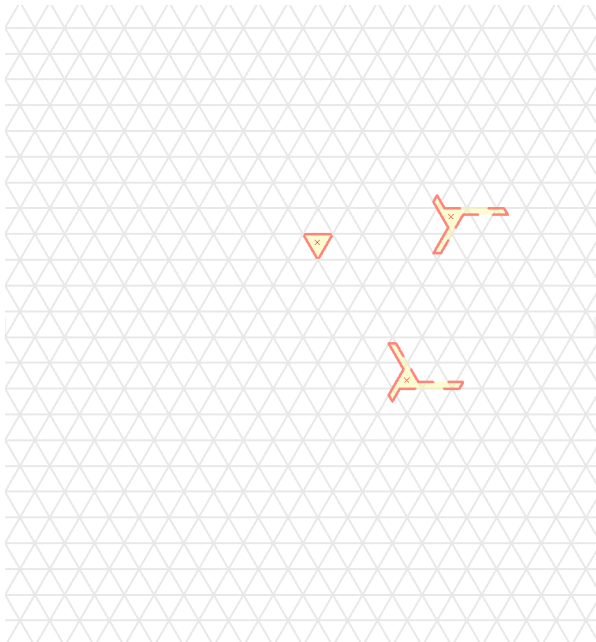
¹ See map of Rome by [Giambattista Nolli](#)

² "Every utopia contains a dystopia, every dystopia contains a utopia." - [No Time to Spare: Thinking About What Matters](#), Ursula K. Le Guin

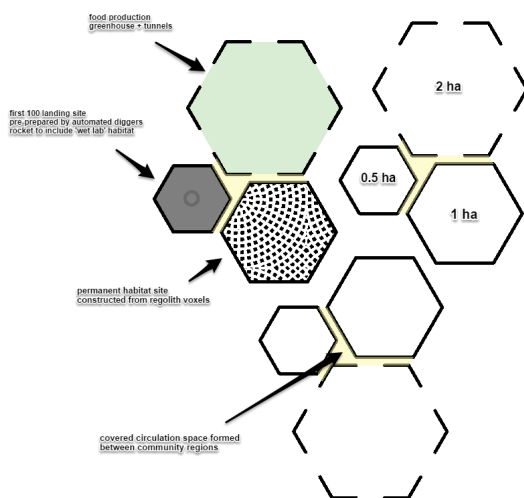
2.

"There was to be no controlling centre, no capital, no establishment for the self-perpetuating machinery of bureaucracy and the dominance-drive of individuals seeking to become captains, bosses, Chiefs of State."

The Dispossessed - Ursula K. Le Guin



Phase 1_ uncrewed landers with automated construction vehicles deployed across triangular grid prepare landing sites... 1000 locations, launched in groups of 3 states/companies/NGOS/syndicates... aerobrake and parachute landings across grid then adjusted to suit spacing required for later phases... diggers and regolith sintering to form launch pads to avoid ejecta from coming rocket boosters in Phase 2... early delivery of supplies and KiloPower units



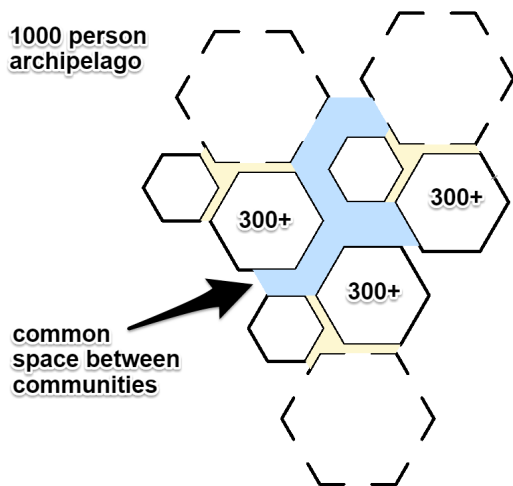
Phase 2_ The first 100 (x3) land at each of prepared landing sites. Inhabitants live in spent rocket converted 'wet lab' and small dwellings built around 0.5 ha pad.... Upper stage remains as a ascent vehicle for emergencies...

3 zones per community to be developed:

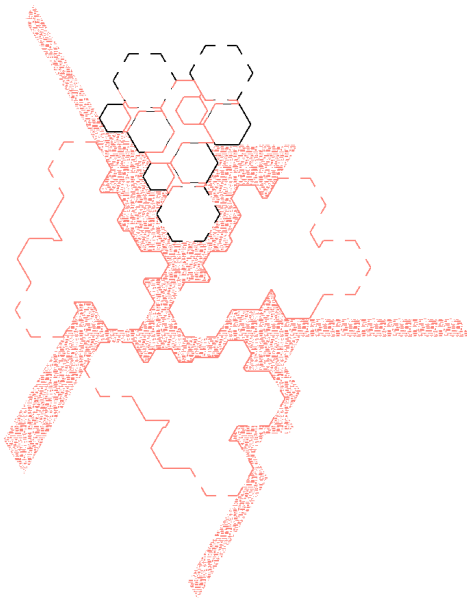
- 0.5 ha landing pad area to be covered with dome using rocket structure for support - future shared space
- 1 ha future permanent living space for dwellings (see [density calcs](#)) ... combination of standardised regolith hexagon bricks and inflatable fabric... 300 person target + visitors per community
- 2 ha agricultural space - buried tunnels... domed areas - capacity for 300+ people consumption needs

Circulation space between 3 zones covered and pressurized to form common space for each community

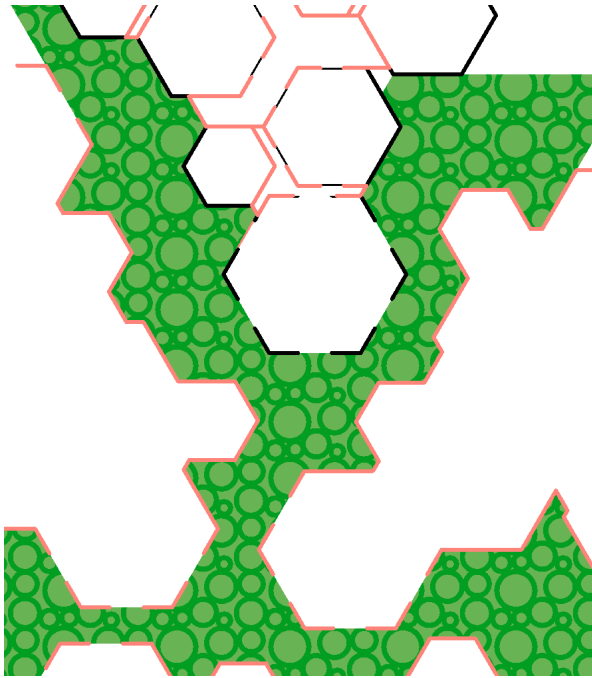
3 communities per archipelago
initial community of 300 people - targeting growth to 900 + visitors



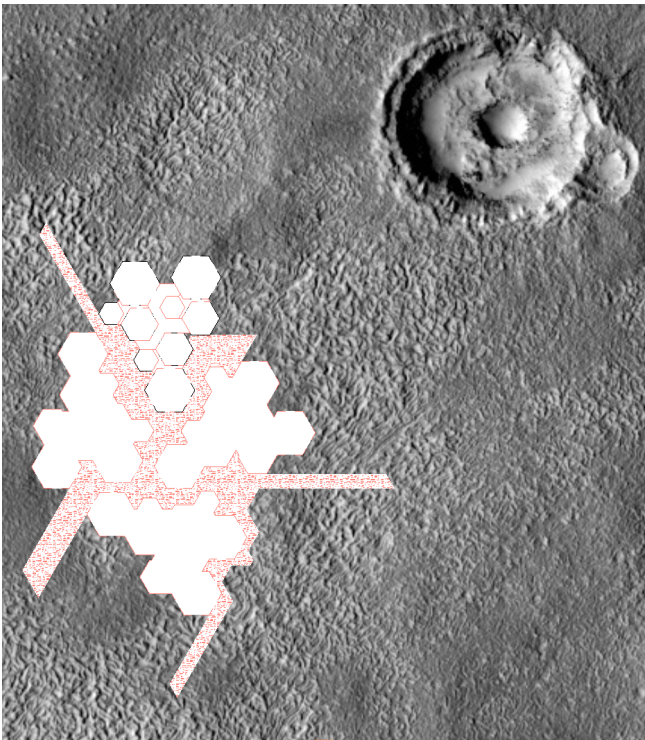
Phase 3_ 1000 person archipelago completed by formation of common space between each community... resilience formed by agreement by 3 stakeholders to feed and pressurize common space... further inhabitants arrive from earth to target 900-1000 per island

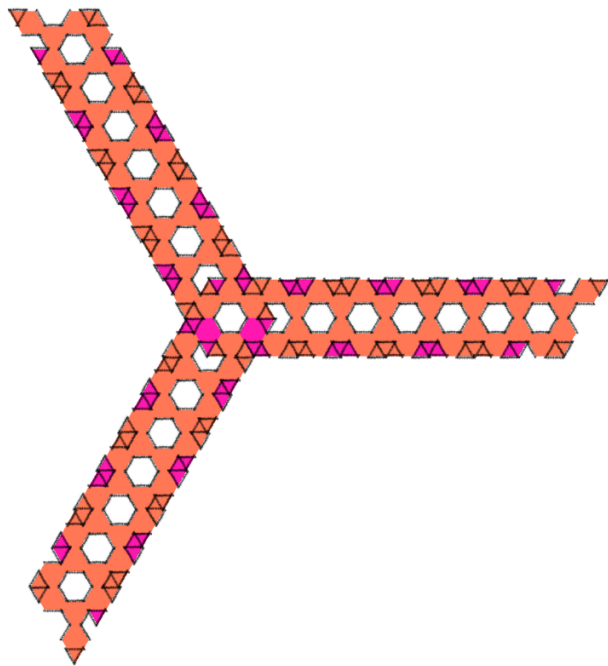
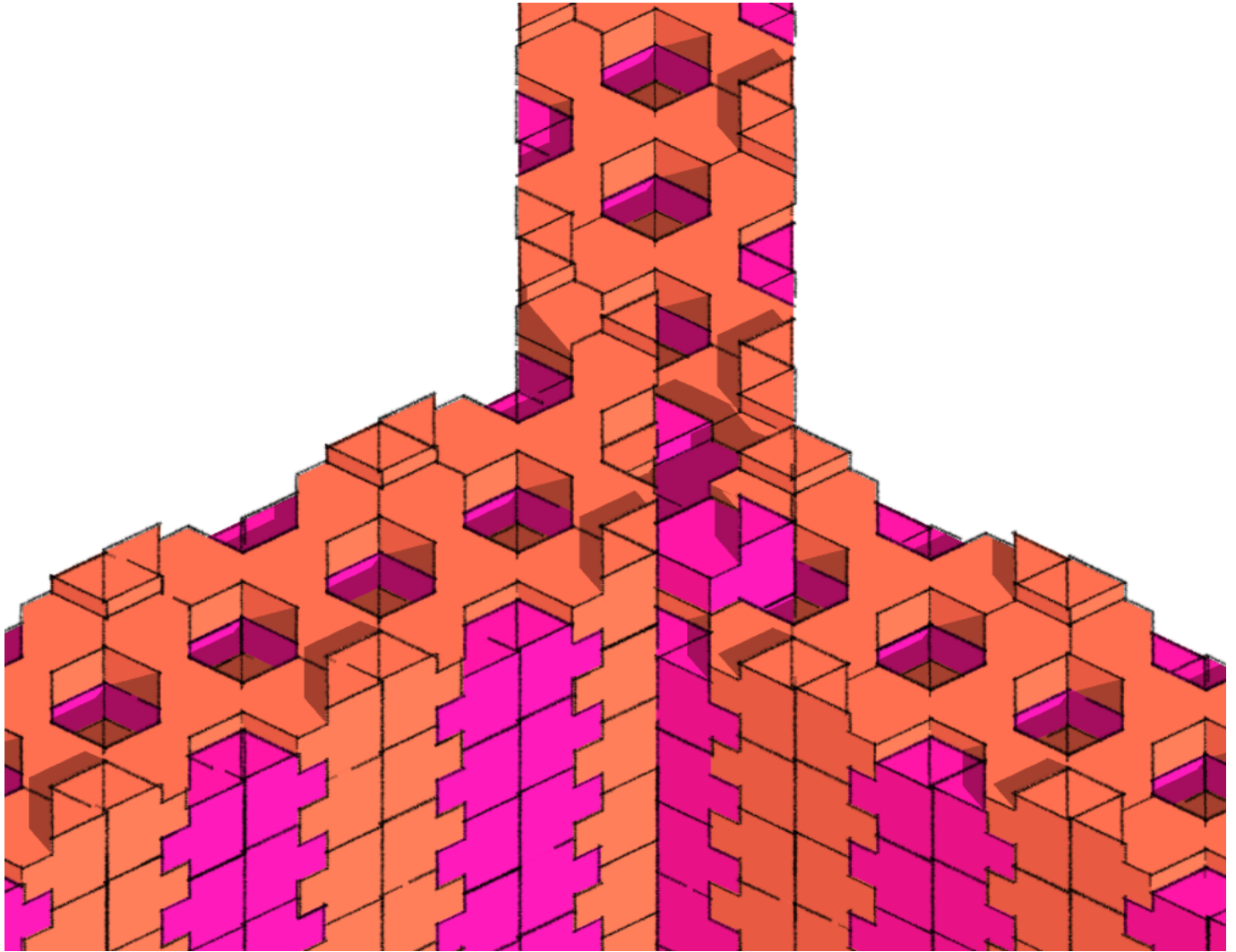


Phase 4_ Creation of covered commons between 1000 polycentric archipelagos laid out as distributed network across original grid... movement and shelter accessible to all with no control from single actor and interdependencies baked in



Phase 5_ Terraforming the commons...





Regolith brick - pressed and baked into standardised block in symmetrical geometry based on 'digital material' voxel allowing either automated placing or hand use when automation fails

Notes

Brief

"In scoring city state designs, points will be allocated on the following basis:

- **30 points technical design:** What engineering systems will be used? How will they work?
- **30 points economic:** How can the city state be made economically successful?
- **20 points social/cultural/political:** What should Martian society be like? What kinds of schools, arts, sports and other activities should there be? How, given a fresh start, can life on Mars be made better than life on Earth? How should the city state govern itself?
- **20 points aesthetic:** How can the city state be made an attractive and enjoyable place to live?

The Mars Society contest is open to all people from around the world. Participants can work alone or as part of a team. Each contestant will need to submit a report of no more than 20 pages presenting their plan by no later than June 30, 2020."

<https://citystate.marssociety.org/>

Concept

How to make civic space in a world that has no breathable commons?

Avoiding the enclave or exclave : https://en.wikipedia.org/wiki/Enclave_and_exclave

Territory law - see Moon Village example: <https://www.thespacereview.com/article/3929/1>

See draft:

<https://moonvillageassociation.org/moon-village-principles-mvp-issue-2-draft-public-consultation-opens/>

"We begin anew from the art of building, from the economy of materials, from the reasons for construction and from the meanings of a building.

Reason has reaffirmed its place, accounting for itself. And for the first time perhaps, above and beyond all contradictions, we feel strangely serene..."

<https://www.domusweb.it/en/from-the-archive/2012/02/11/superstudio-projects-and-thoughts.html>

Interplanetary Urbanity

Public or civic space issues - ownership and resources

Infrastructure of survival vs visual legibility/community relationships

P2P metaphor for infrastructure control? Relationship to history of city zoning?

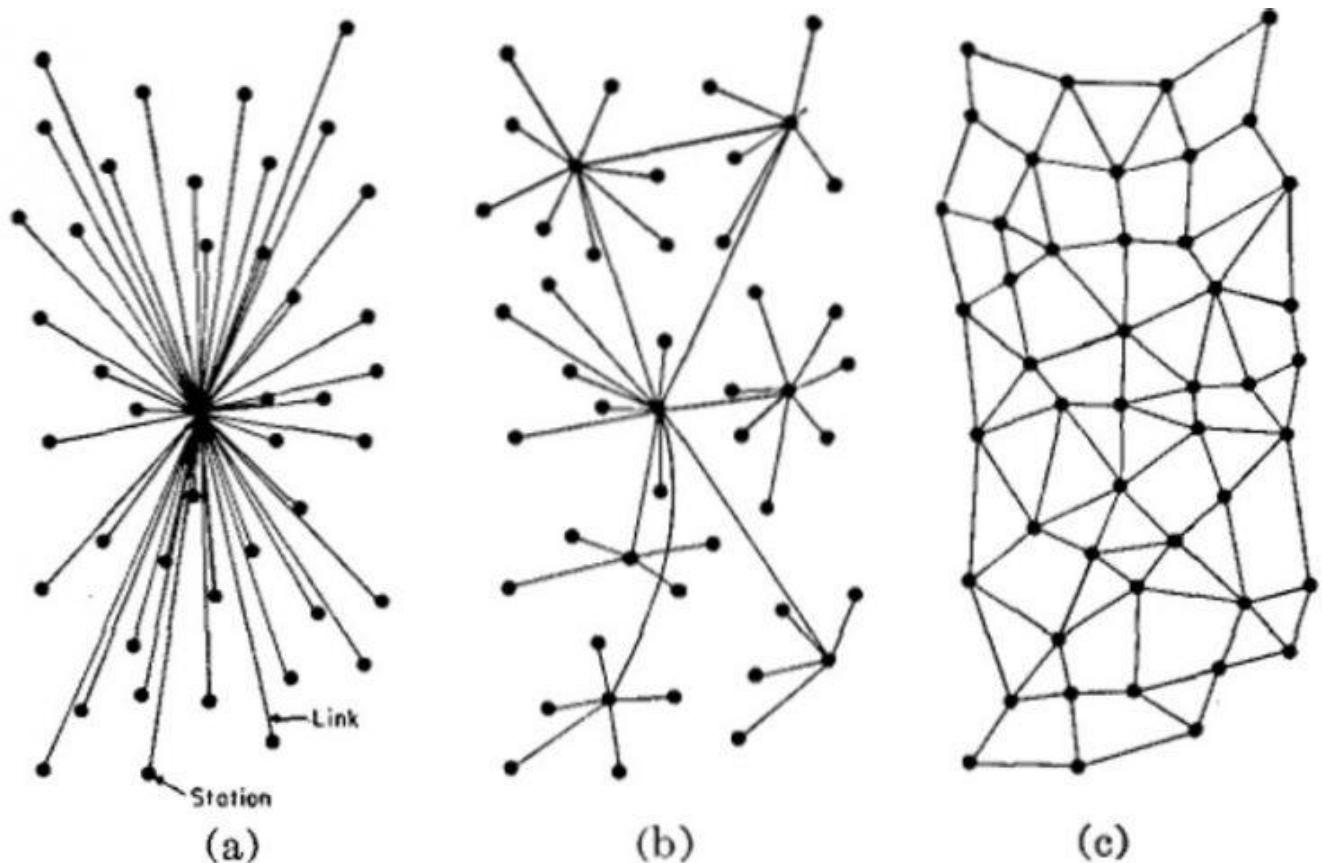
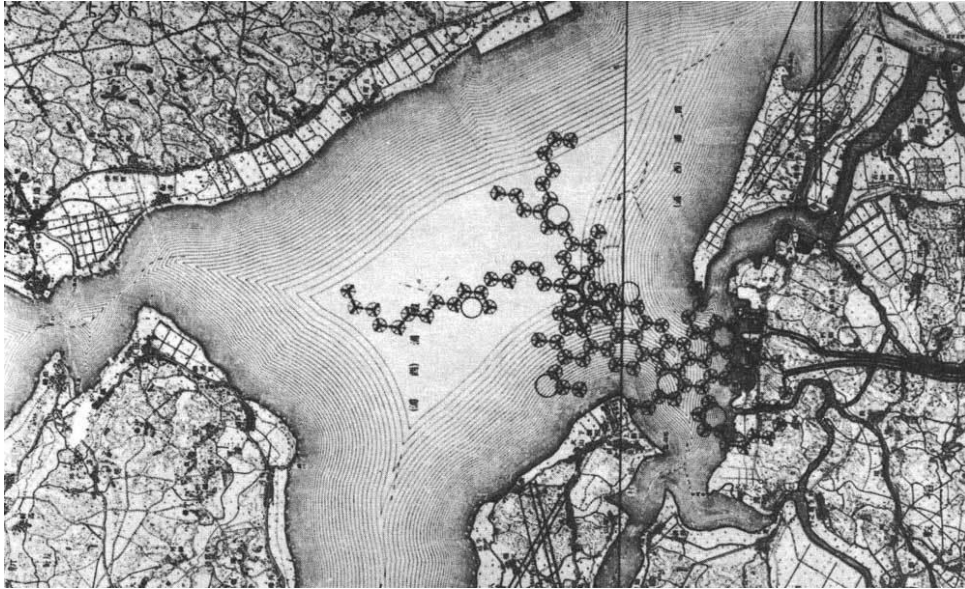


Fig. 1—(a) Centralized. (b) Decentralized. (c) Distributed networks.

Harbraken / Structuralists / **Metabolists** / Friedman - 70s structured participatory processes



New Town planning history lit review

https://en.wikipedia.org/wiki/New_towns_movement

Circular grids

Architectural Doughnuts: Circular-Plan Buildings, with and without Courtyards

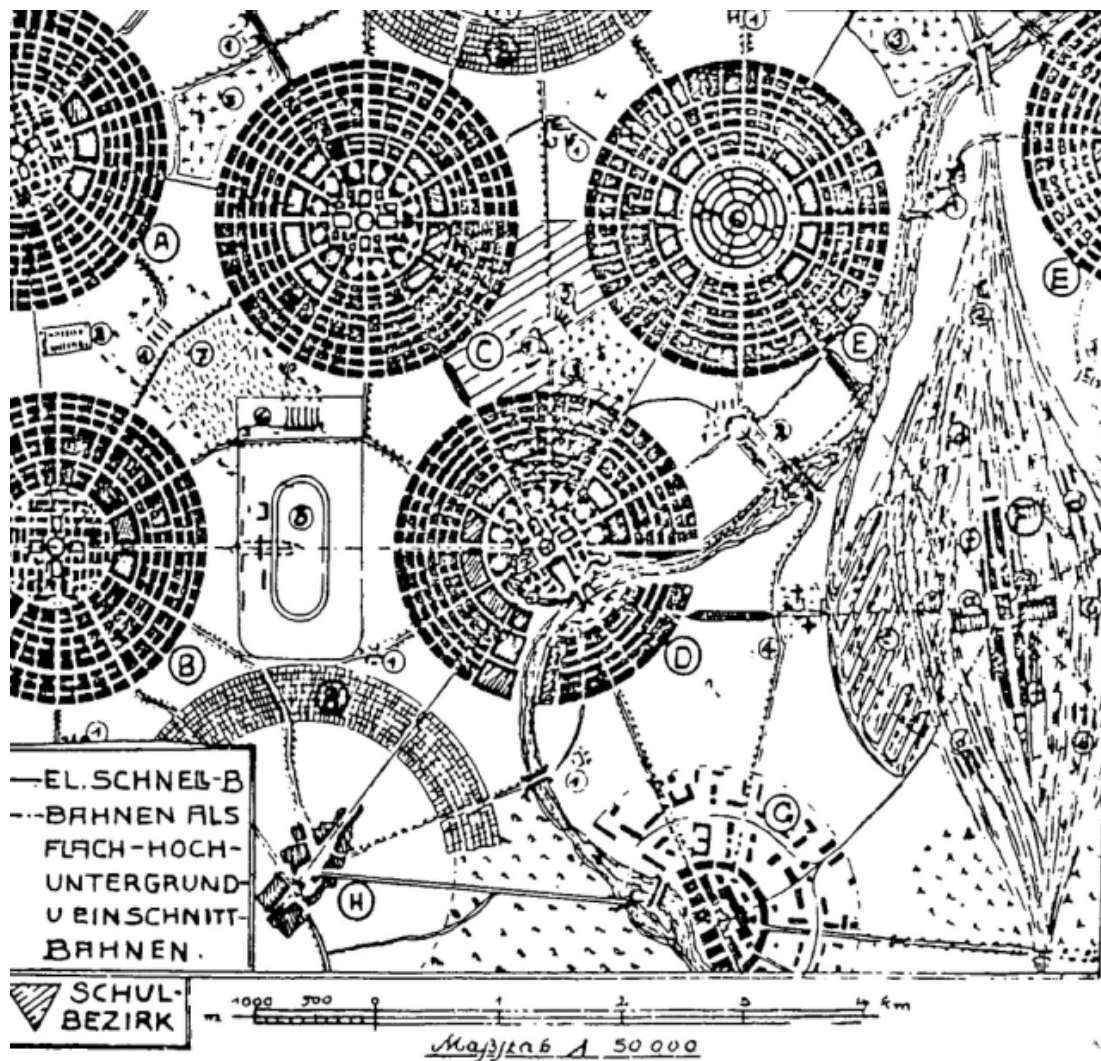
<https://link.springer.com/article/10.1007/s00004-015-0270-8>

Erich Gloeden:

"I was aware of the situation in which I put myself but a reward couldn't persuade me."

Lilo Gloeden: <https://www.bbc.co.uk/sounds/play/w3ct0486>

"We took in the man introduced as the Jew ... out of pure pity ... Pure human compassion prevented me from reporting him."



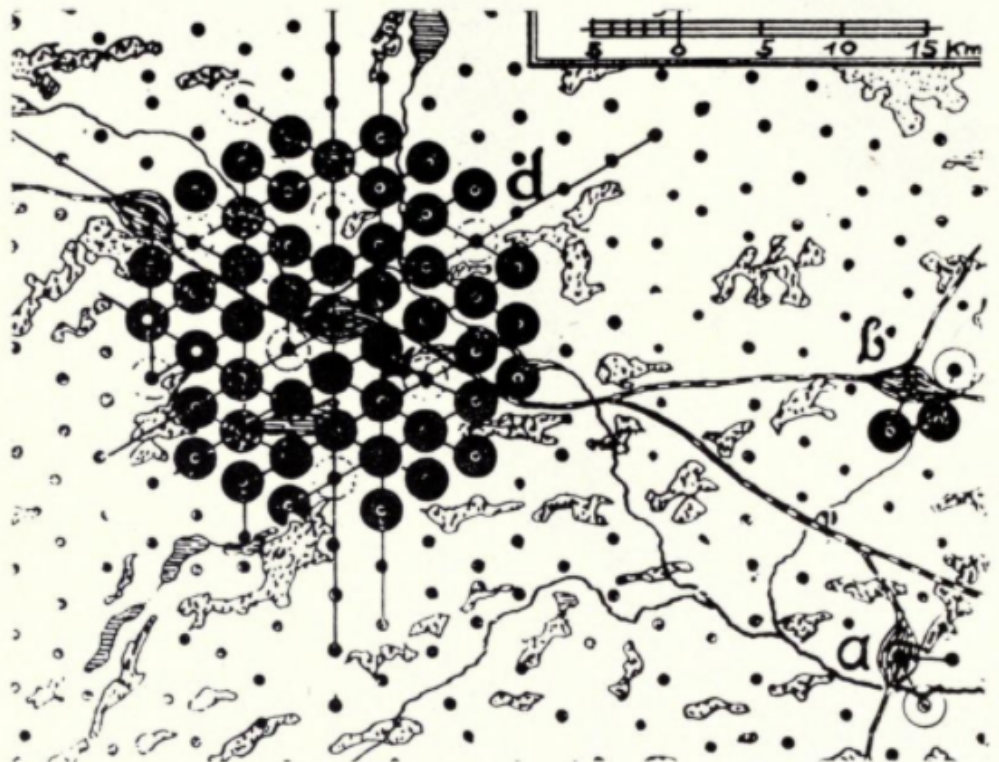
The Horizontal Metropolis and Gloeden's Diagrams - Two Parallel Stories:

<https://www.oasejournal.nl/en/Issues/89/TheHorizontalMetropolisAndGloedensDiagrams#094>

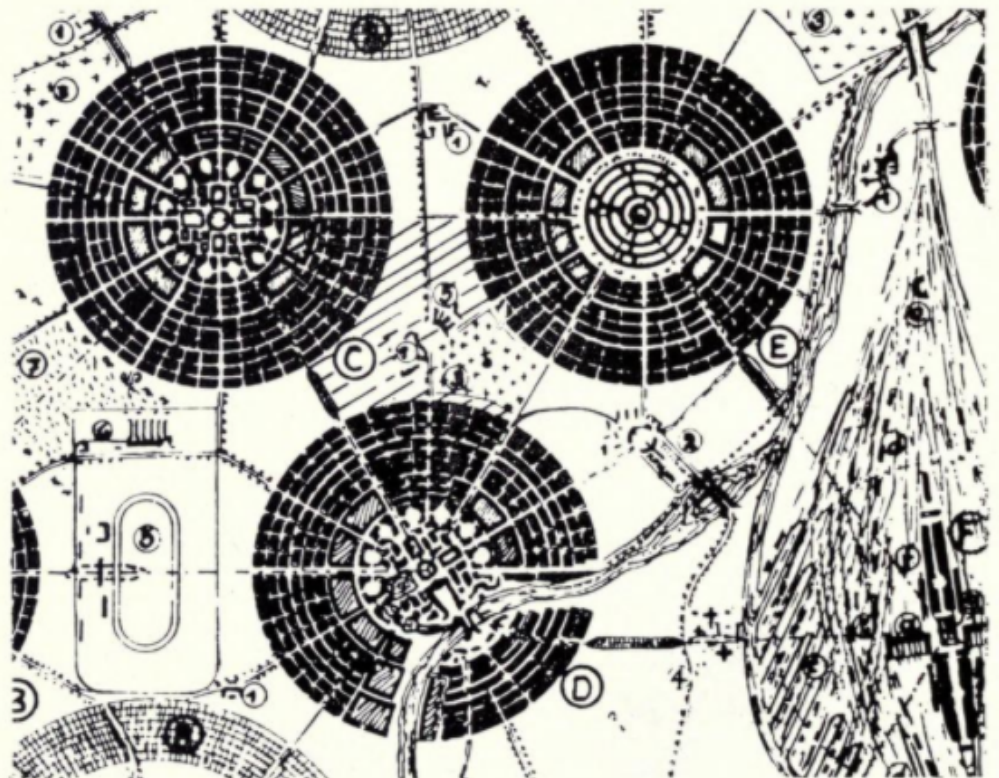
The Horizontal metropolis between urbanism and urbanization

<https://books.google.co.uk/books?id=xfRZDwAAQBAJ&pg=PA81&lpg=PA81&dq=gloeden+diagram&source=bl&ots=XkvyAu7p9P&sig=ACfU3U1HDo0wIwsbmSU37XQWFdc3TQ0CyA&hl=en&sa=X&ved=2ahUKEwi79v6umvnoAhVPQUEAHbDYAN4Q6AEwFXoECAoQAQ#v=onepage&q=gloeden%20diagram&f=false>

39. ERIC GLOEDEN,
Coordinated system of
different settlements.



40. Detail of above plan.



New City Planning

<https://archive.org/details/newcityprinciple00hilbrich/page/62/mode/2up>

Berlin Archipelagos https://youtu.be/X38_b0uK_Vs - Sebastien Marot

Cities Without Cities - An Interpretation of the Zwischenstadt - Sieverts

[https://issuu.com/publicationstudionetworklib/docs/where we live now final](https://issuu.com/publicationstudionetworklib/docs/where_we_live_now_final)

brondby haveby denmark



Walkable city: <https://morphocode.com/the-5-minute-walk/>

Figure-ground

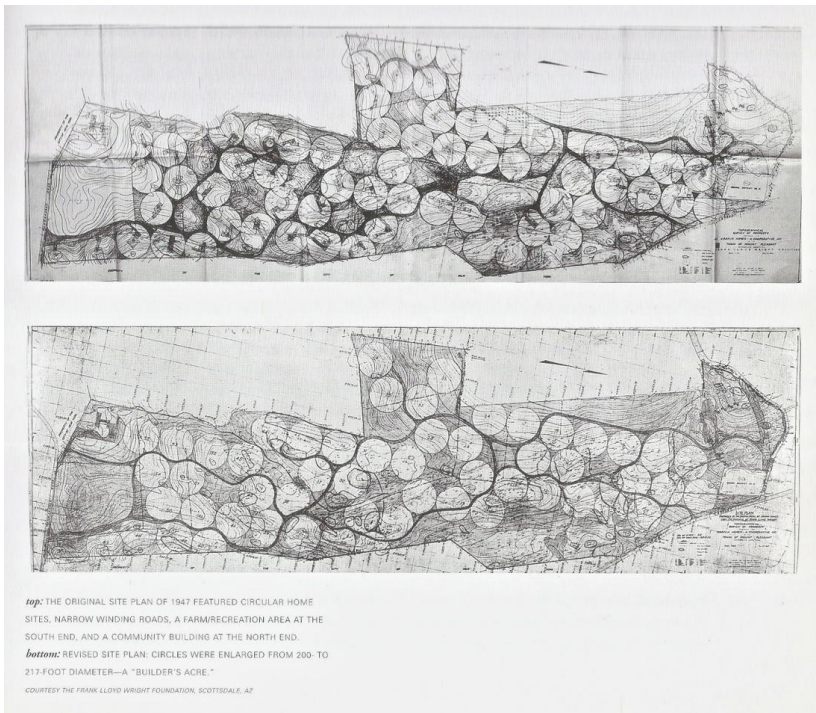
[https://issuu.com/bilgeturgut/docs/urban design - method and technique](https://issuu.com/bilgeturgut/docs/urban_design_-_method_and_technique)

Nolli map

Dymaxion!



<http://b2dymaxionhouse.blogspot.com/p/morphology.html>



Hexagon plans of FLW + Fuller

<http://wrightchat.savewright.org/viewtopic.php?p=78511>

Habitats

Space chains

Yona Friedman

<https://www.drawingmatter.org/sets/drawing-week/yonafriedmans-space-chain-structures/>

Check connections with Negroponte and computational design:

Toward a Scientific Architecture:

<https://mitpress.mit.edu/books/toward-scientific-architecture-1>

Summary of MIT paper: <https://medium.com/designscience/1976-852a377855fe>

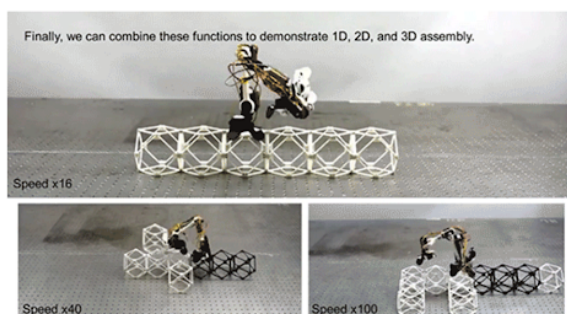
Full study: [Theodora Vardouli](#) + [lit](#)

Also: <https://mitpress.mit.edu/books/architectural-intelligence>

Architectural Intelligence: How Designers and Architects Created the Digital Landscape (The MIT Press) Hardcover – 24 Nov. 2017

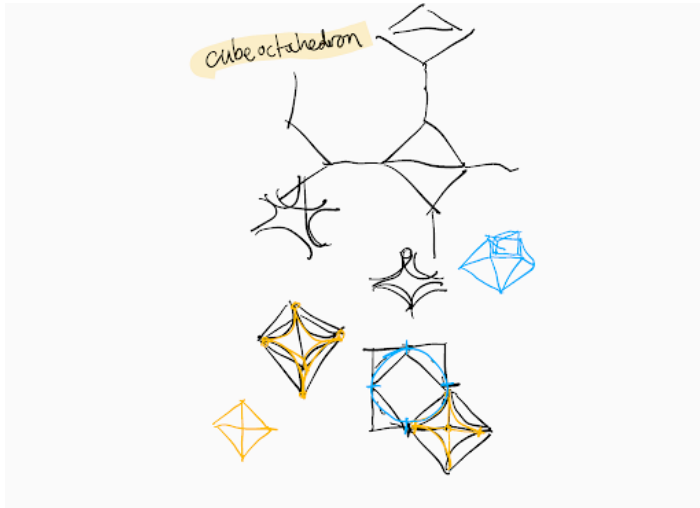
Compare with 'digital materials' research - see [ARMADAS](#)

"What's at the heart of this is a new kind of robotics, that we call relative robots," Gershenfeld says. Historically, he explains, there have been two broad categories of robotics — ones made out of expensive custom components that are carefully optimized for particular applications such as factory assembly, and ones made from inexpensive mass-produced modules with much lower performance. The new robots, however, are an alternative to both. They're much simpler than the former, while much more capable than the latter, and they have the potential to revolutionize the production of large-scale systems, from airplanes to bridges to entire buildings.



Relative robotics

<http://news.mit.edu/2019/robots-large-structures-little-pieces-1016>



Space Frames - Konrad Wachsmann ... + Wigley



kurokawa Tokyo 70

Rammed Earth

Spray inside walls?

Floor plates brought from Earth?

mycelium domes: <http://2018.igem.org/Team:Stanford-Brown-RISD/Description>

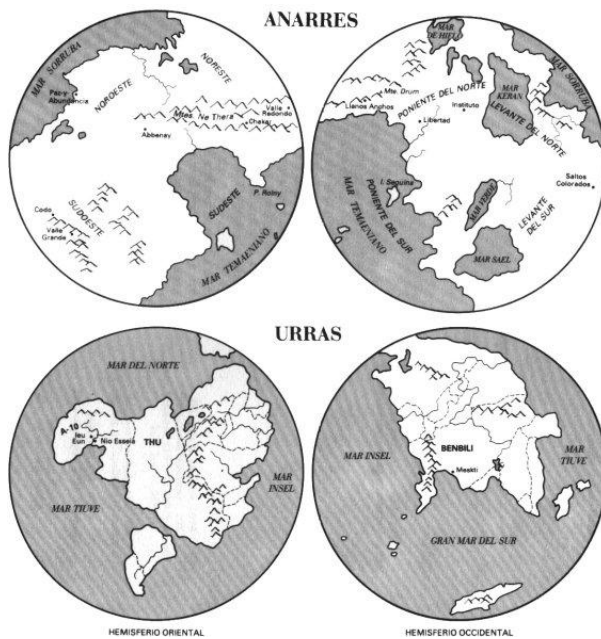
Variation on Habor for first habitat?

Society

Flight based communities - 100 people, rotating roles to integrate

"It was a revelation, a liberation. Physicists, mathematicians, astronomers, logicians, biologists, all were here at the University, and they came to him or he went to them, and they talked, and new worlds were born of their talking. It is of the nature of idea to be communicated: written, spoken, done. The idea is like grass. It craves light, likes crowds, thrives on crossbreeding, grows better for being stepped on."

The Dispossessed



Fully Automated Luxury Communism:

<https://www.theatlantic.com/ideas/archive/2019/06/give-us-fully-automated-luxury-community/592099/>

Community, Democracy, and Mutual Aid:

https://thenextsystem.org/sites/default/files/2017-07/Symbiosis_AtLargeFirst-corrected-2.pdf

Public commons:

<https://www.thespacereview.com/article/3929/1>

<https://www.spacelegalissues.com/space-law-the-res-communis-concept-in-space-law/>

Landing sites

Mariner 4

https://nssdc.gsfc.nasa.gov/imgcat/html/mission_page/MR_Mariner_4_page1.html

37 N, 187 W

<https://behindtheblack.com/behind-the-black/essays-and-commentaries/spacex-begins-hunt-for-starship-landing-sites-on-mars/>

https://en.wikipedia.org/wiki/Arcadia_Planitia

https://www.uahirise.org/dtm/dtm.php?ID=ESP_035862_2195

Latitude 39.09°, Longitude 192.9°

<https://www.google.com/mars/#lat=39.082636&lon=-166.891837&zoom=8&map=infrared>

Or SpaceX site

https://www.uahirise.org/ESP_060363_2200

Young Lava Flows

https://www.uahirise.org/ESP_054668_1865

Ground ice

<https://www.nasa.gov/feature/jpl/nasas-treasure-map-for-water-ice-on-mars>

Literature

More's Utopia

Morris - News from Nowhere

Le Guin - The Dispossessed

res communis:

<https://www.spacelegalissues.com/space-law-the-res-communis-concept-in-space-law/>

"...an enclave of maximum control surrounded by a wilderness."

NO TIME TO SPARE: Thinking About What Matters by Ursula K. Le Guin

<https://electricliterature.com/ursula-k-le-guin-explains-how-to-build-a-new-kind-of-utopia/>

"Creating new urban areas from scratch may appear to be a utopian exercise, but more frequently it entrenches existing systems of power"

<https://www.architectural-review.com/essays/typology/typology-new-towns/10007024.article>

Walden 2 - Skinner

Check Living Complex on Japanese private/public space

KSR

<https://newsocialist.org.uk/red-moon-red-earth/>