

Fredo De Smet Apollo 8





wat zal de ingenieur van 2050 leren tijdens zijn of haar opleiding?



It is difficult to say exactly what an engineer in 2050 will learn during their education, as the field of engineering is constantly evolving and new technologies and methods are constantly being developed. However, it is likely that engineers in 2050 will be expected to have a strong foundation in traditional engineering disciplines such as mechanical, electrical, and civil engineering. Additionally, they will likely be required to have a good understanding of advanced technologies such as artificial intelligence, machine learning, and advanced materials. They will also likely be trained in sustainable and environmentally friendly practices, as well as safety protocols and regulations.



Another area that would be of paramount importance, would be a better understanding of data-driven approaches in engineering, specially, they would be expected to be able to gather, process and model large amounts of data from various sources, and also be able to develop algorithms and models to make sense of data.

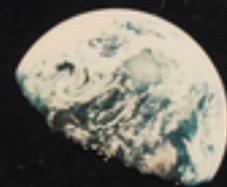
Finally, engineers of 2050 will also likely be trained in interdisciplinary teamwork, as many engineering projects today are becoming increasingly complex and involve collaborations across multiple fields.



William Anders - Earthrise
December 24, 1968, Apollo 8

WHOLE EARTH CATALOG

access to tools



Spring 1969

\$4





Living on the Earth
Ancis Bay Laurel
1970, a bunch of pages
\$3.95 postpaid

Living on the Earth
this may well be the best
this is a book for people
in, if you are a person,
if it fits you,
if you are a dog,
for instance,
and you can't read very
it just might be for you
because of the drawings,
etc.
etc.
etc.
she's our very own brother

These two books will cover your needs
until you get serious, when you get serious
the author illustrates in Japanese although
they are a few more things in English. There
is Vital Points of Go by Kaku Takayama,
written 7 years ago as a textbook
course with his text and personal instruction
The American Go Association would supply
Miyake's address. I understand there is also a
translation of a book by Sakata, another of
Go's greats.

The best book to learn is How to
Play Go by Kaku Takayama, #45. It
Takayama is one of the greatest modern Go
players in that what he says is reliable.
Although this book is elementary, if you truly
want to play Go, an important thing to
remember when reading it is that if it says
to not know, then it is time for you to study
the situation in more detail until you find
out why it is true.

Dear Friends,
When I opened my July copy of Fun
I was glad to see the recommended
books for Go. My mind was filled with
hundreds and my hope to learn! I thought
how much I was missing of the game.
I have been looking for books, have found
much, better books, have found
in English in the last 10 years or so.
I think in print you are likely to find
the conclusion that the books listed in the
July catalog are the only books available.
The better books are available from JAPAN
PUBLICATIONS TRADING CO., INC. (and a few
libraries also carry them).



Concerning GO and MUDCRACK Y

...the book to learn from is How to
Play Go by Kaku Takayama, #45. It
Takayama is one of the greatest modern Go
players in that what he says is reliable.
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the situation in more detail until you find
out why it is true.

Peace,
Craig Schacht
Ann Arbor, MI 48104



American Go Association
P.O. Box 261, Old Chatham Station, NY 12051
All participants are French, Spanish, beautiful
game board, \$10.00

Get book of Mudcrack Y for \$1.50 postpaid
from:
New Press
Box 32
Peaks Island, ME 04768

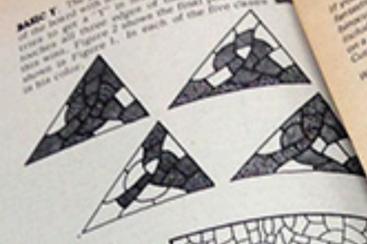


Diagram illustrating a Go board position, showing stones and a player's move.



Homemade Cosmetics



...an addition for your next catalog
order. Make Two Cream Cosmetics
...the book to learn from is How to
Play Go by Kaku Takayama, #45. It
Takayama is one of the greatest modern Go
players in that what he says is reliable.
Although this book is elementary, if you truly
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out why it is true.

Hong Kong
...we have the time (2 weeks or less), Hong Kong offers
...we've had exactly no complaints about any of these firms.
...Commonwealth govt. insurance. Catalogs are free.

Write to:
E. M. Chan and Company
P.O. Box 7232
Kowloon, Hong Kong
Far East Company
P.O. Box 100
Kowloon, Hong Kong
Albert White and Company, Ltd
P.O. Box K 202
Kowloon, Hong Kong
Hong Kong Suppliers
...we've had exactly no complaints about any of these firms.
...Commonwealth govt. insurance. Catalogs are free.

Extended Supplies
P.O. Box 1483
General Post Office
Hong Kong
Wah Pak Photo Supplies
101 Nathan Rd.
Kowloon, Hong Kong
Metal Funds Co.
Box K 2005
Kowloon, Hong Kong

For East Company
P.O. Box 100
Kowloon, Hong Kong
Albert White and Company, Ltd
P.O. Box K 202
Kowloon, Hong Kong
Hong Kong Suppliers
...we've had exactly no complaints about any of these firms.
...Commonwealth govt. insurance. Catalogs are free.

1. The Outline Area
...a human dumping station
...a just sentence for the crime of
...the more specific part of the
...the background to the crime, or the
...the crime, just off the back of
...the crime, just off the back of
...the crime, just off the back of

2. The Outline Area
...a human dumping station
...a just sentence for the crime of
...the more specific part of the
...the background to the crime, or the
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3. The Outline Area
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...the more specific part of the
...the background to the crime, or the
...the crime, just off the back of
...the crime, just off the back of
...the crime, just off the back of

Table with 2 columns: Item Name and Price. Includes items like 'The Outline Area', 'The Outline Area', etc.

4. The Outline Area
...a human dumping station
...a just sentence for the crime of
...the more specific part of the
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6. The Outline Area
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7. The Outline Area
...a human dumping station
...a just sentence for the crime of
...the more specific part of the
...the background to the crime, or the
...the crime, just off the back of
...the crime, just off the back of
...the crime, just off the back of

ABC's of Short Wave Listening

I started listening to short wave when I was twelve on an old (1937) Crosley shortwave console radio I bought from Horner Ben's for \$5. I replaced a few tubes and then learned to count seconds listening to WWV.

You can receive much more than the WWV time signal. Voice of America, Radio Swan, etc. (See p. 127, Popular Science). It is fun and can be very informative.

This book is a very basic introduction to short wave. You get a good idea of what you can do with an old console. Depends on what you want.

(Reviewed by Fred Richardson)

ABC's of Short Wave Listening

Len Buckwater
1952, 96 pp.

\$2.95 postpaid

from:

Howard W. Sims & Co., Inc.

4420 W. 62nd St.

Box 535

Indianapolis, Indiana 46200

or WHOLE EARTH CATALOG

As the major piece of equipment in the hobby of shortwave listening, the receiver must convert the minute energy of a radio wave into an audible signal. How well a receiver can do this is mostly a matter of its sensitivity and selectivity. The first quality, sensitivity, is the ability to separate a signal from the ever-present noise level created by disturbances in the atmosphere and outer space.

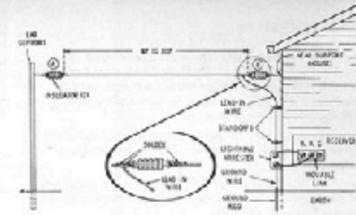


Table 2-1. The Radio Spectrum

Major Division	Frequency Range
UL (Very Low Frequency)	30 kHz to 30 kHz
LF (Low Frequency)	30 kHz to 300 kHz
MF (Medium Frequency)	300 kHz to 3000 kHz
HF (High Frequency)	3 MHz to 30 MHz
VHF (Very High Frequency)	30 MHz to 300 MHz
UHF (Ultra High Frequency)	300 MHz to 3000 MHz
SHF (Super High Frequency)	3 GHz to 30 GHz
EHF (Extremely High Frequency)	30 GHz to 300 GHz

Necessarily describes how well the receiver can pick out a signal in a crowded frequency band. It is mainly by these two qualities that a short wave receiver may be judged. A multitude of features may appear in a given set, but these are usually concerned with operating convenience rather than operating quality.

The Radio Amateur's Handbook

10 The Radio Amateur's Handbook

10a This has been the practical guide for radio amateurs for 45 years. It begins with the fundamentals of electric circuits and follows a simple development of the radio theory necessary to understand communications. There is brief section on laws governing amateurs and references to other books that are valuable aids in obtaining a license.

10b Throughout the book actual circuits are shown, always with enough information to build them. Later sections cover complete construction details for various transmitters and receivers but don't be misled by their apparent simplicity. It takes a lot of time and know-how to make these things work and unless circuit building is your thing you are better off to buy commercial equipment or kits. (Heathkit is one of the best sources for kits, gen'l.)



The review to the left was prepared and printed on a computer by Bill English—so you can see the fluidity of computer interaction makes spelling more casual than with direct print.

The Radio Amateur's Handbook may be of interest to the community and amateurs who've been fantasizing an underground radio net. Like a night of the week or month when all the world's long-hairs are on the air, whiling to each other and the stars.

(Reviewed by Bill English. Suggested by Arthur Brand)

The Radio Amateur's Handbook
American Radio Relay League
1975... 1921, 658 pp.

\$4.50 postpaid

\$6.00 Canada, \$6.00 elsewhere

from: The American Radio Relay League

Newington, Conn. 06111

Electronics

For technical freaks. If you are a devotee of an ENGINEER, the articles may be of interest. Otherwise, spend your time with the ads. Learn about all the new hardware and kits and pieces. Reader service card whereby all of the advertisers will send you piles of stuff on their products. By far the best part is the Electronics Buyers Guide, a three-inch thick directory that comes once a year and lists all manufacturers (and their sales reps) that have anything to do with electronics.

Don't forget your title and company name. Get a subscription blank from one at the library and have no trouble.

(Reviewed by Fred Richardson)

Electronics
\$8.00 a year, biweekly
from: Electronics
P.O. Box 514
Hightstown, N.J. 08520
Subscription department

324 Radio Communications

Radio

In the March \$1 Catalog you were wondering about how to check out your catalog order. It seems to me the catalog equipment is relevant to the very important business of communicating with one another. Radios, transmitters, headphones, electronic translators, and tape recorders certainly are important tools. However, one of the most important communication tools for my country is a short wave receiver. Listening is the basis of all communications. With even the humblest short wave set one can tune in many different nations all around the globe. Americans have neglected their own radio but the rest of the world (and other governments) is broadcasting its opinions, news, points, philosophies, music, literature and drama. An antenna is needed. It is time to arrive with a short wave radio.

The simplest way to start listening is to turn on any shortwave radio you have. Reception is better if you attach an antenna and a good ground. Reception is also better if you have a good shortwave receiver in your attic or a \$5.95 Salvation Army Store radio will serve. Almost anything made 1932 is liable to work well. Of course if you have more money, a stereo-quality receiver or kit would be a fine tool. I hope some of your correspondents will be reviewing receivers and listening guides.

Besides ham radio it seems to me that such a receiver is important above all other radio and I ought to check the radio kit trade journals for the names of brands in used broadcast equipment. The manufacturer of color TV, multiple TV and television of good equipment has been abundant. Presently much of the stuff is sold to the different parts overseas. Also check the radio and line shops in your own country. I have seen a couple of \$100 sets (which at that time was one of the largest band TV and air bands I'd bet that there is some modest price point the market that would be fine for an broadcasting with some receiver kit) that \$10 and 5 lbs up.

Leo McCullough
Claremont, N.H.

Get Your Ham Ticket

1) When this country falls apart, all that portable equipment and practical electronics knowledge and all those radio men are going to be the ones to step after and continue with your friends.

2) Intelligent readable discussion is not only possible in enjoyable, mainly because of the ease of an alternative, but you can tell how to build or go off or even frequency and start another receiver.

3) Organized amateur radio gets information speed. I don't matter what the information is, so long as it has any value. I have been using the big old radio kit for years ago and the more recent and commercial National Standard Information Net.

4) There are a lot of radio kits.

Why don't more friends and street people become ham? I bet that most do not see amateur radio as the whole kit, but as a hobby and a discipline of the philosophy (see article 1, 2) and while in the meantime get. The price of amateur kit has gone up.

The whopper in this whole discussion, though, is the whole kit, but particularly emergency broadcast use of amateur radio. The April 1974 issue of 21, which says it is the best way to get your signal out over the radio. It is an American issue. Chicago, you, the radio store of New York, San Jose, San Francisco, and Los Angeles. It is one of the best in the U.S. Give it a copy of yours. Republishers are welcome. Please let us know if you are in the country, but we're not a city of ground and a good, high antenna site. Also a couple of hundred dollars a year are the average expense.

Last summer I started to print a Chicago receiver for a long time and found it in a station near the Wisconsin border and more than thirty miles to the south. Shifting with a mobile receiver, the phone talk off an O'Brien and a voice, making the trip with a walk-in. I understand that one can now do through the northwest and nearby cover out of range of a mobile phone. Mind you that all this is taking place more and more rapidly on a permanent basis. See, in broadcast and it changes.

TV QSO any of you after my part of the war is over.

See Plus? WACSEN
Carlson APB, Idaho

Sex and Broadcasting: A Handbook on Starting Community Stations

Lynne W. Mann
1971, 40 pp.

\$1.00 postpaid

from: Disc Press-KTBC
6 E. University
Los Gatos, California 95030

or WHOLE EARTH CATALOG

I could spend pages, hours, days, telling you about how to file Form 200 from the FCC. But what you and I are interested in is how to proceed, for as long as there is such an opportunity, it is to the best of your ability, show it to your lawyer and you have one — or send a rough draft to me. I will help you as much as I can if I am convinced that you truly want to do it. I can't help you if you don't. For I love broadcasting and I'd like to give free time and assistance to someone who will use a broadcast as a starting ground for some mission straight out.

Heathkit

Heathkit: readymade and total do-it-yourself is Heathkit. Assembling yourself saves 25-40%, plus satisfaction, minus time. It's good electronic equipment of wide variety: color TV (14"), \$3900; guitar amplifier (120 watt, \$195); excellent AR-15 stereo tuner (\$207); 5" Celestioncope (\$50); audio lab equipment; CD 5 watt transmitter (\$100); portable short-wave receiver (\$142); Theater organ (\$1700); microwave oven (\$460).

Heathkit Catalog
1971, 115 pp.

from: Heathkit Products Corporation
15, Day 117
Livonia, Michigan 48050



Allied Radio Shack

After considerable mail and discussion by CATALOG users, it seems clear that Allied (now merged with Radio Shack) is the best mail-order source for electronic gear. They also print an industrial electronic catalog that is particularly rich in components, especially noteworthy: integrated circuit components. Plug in, link up, incorporate.

—SB

Allied Radio Shack Catalog
\$1.00

Allied Industrial Electronics Catalog
\$2.00 (See change with code. Mail order first purchase.)

from: Allied Radio Shack
100 N. Western Avenue
Chicago, Ill. 60660

21-112 ONE-WATT ONE-CHANNEL WAIRED-TAIRED
Language ports at a reduction for info. The "Bass" has all solid-state, shock with ultra-sensitive RF amplifier stage or two and a speaker. Volume control and auto-tune meter. Also built-in speaker and tone control. Perfect for emergency use. Battery powered. Complete with 8" x 11" printed circuit board. Price: \$19.95. (See also 21-111, 21-113, 21-114, 21-115, 21-116, 21-117, 21-118, 21-119, 21-120, 21-121, 21-122, 21-123, 21-124, 21-125, 21-126, 21-127, 21-128, 21-129, 21-130, 21-131, 21-132, 21-133, 21-134, 21-135, 21-136, 21-137, 21-138, 21-139, 21-140, 21-141, 21-142, 21-143, 21-144, 21-145, 21-146, 21-147, 21-148, 21-149, 21-150, 21-151, 21-152, 21-153, 21-154, 21-155, 21-156, 21-157, 21-158, 21-159, 21-160, 21-161, 21-162, 21-163, 21-164, 21-165, 21-166, 21-167, 21-168, 21-169, 21-170, 21-171, 21-172, 21-173, 21-174, 21-175, 21-176, 21-177, 21-178, 21-179, 21-180, 21-181, 21-182, 21-183, 21-184, 21-185, 21-186, 21-187, 21-188, 21-189, 21-190, 21-191, 21-192, 21-193, 21-194, 21-195, 21-196, 21-197, 21-198, 21-199, 21-200, 21-201, 21-202, 21-203, 21-204, 21-205, 21-206, 21-207, 21-208, 21-209, 21-210, 21-211, 21-212, 21-213, 21-214, 21-215, 21-216, 21-217, 21-218, 21-219, 21-220, 21-221, 21-222, 21-223, 21-224, 21-225, 21-226, 21-227, 21-228, 21-229, 21-230, 21-231, 21-232, 21-233, 21-234, 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21-985, 21-986, 21-987, 21-988, 21

We can't put it together.
It is together.



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The Last Whole Earth Catalog

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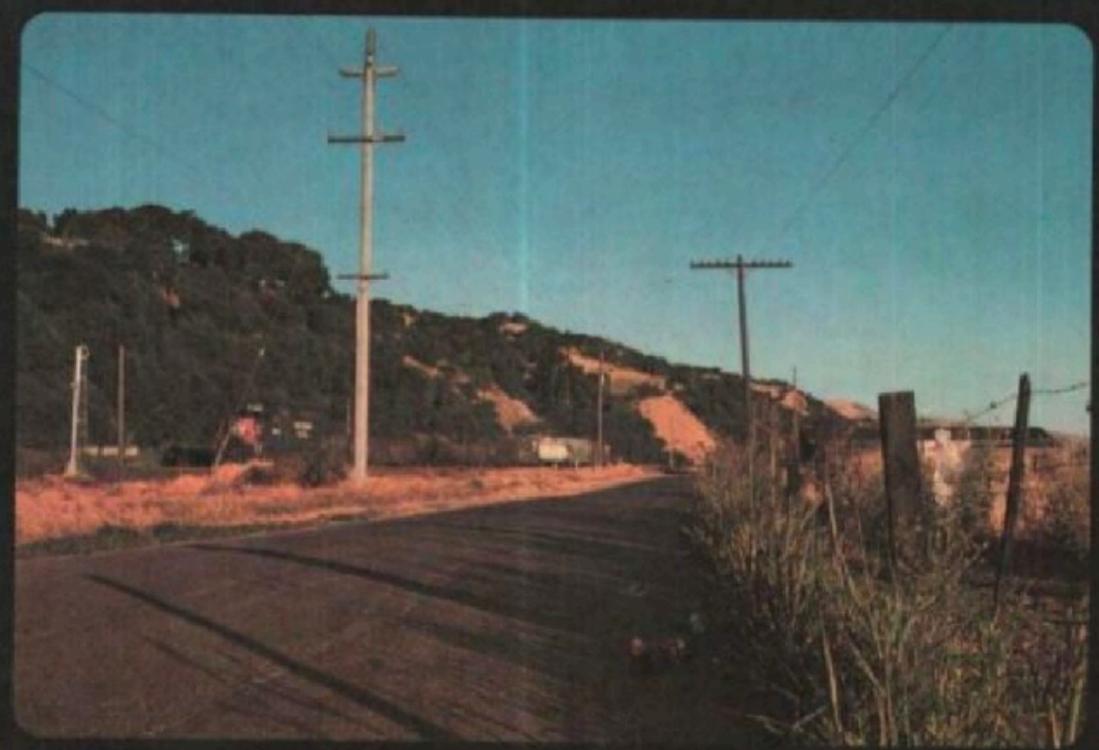
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*Evening.
Thanks again.*





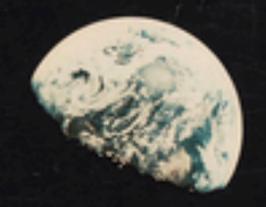
Stay hungry. Stay foolish.



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Spring 1969
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STEVE JOBS

President, NeXT, Inc.

Co - Creator, Apple & Macintosh Computers





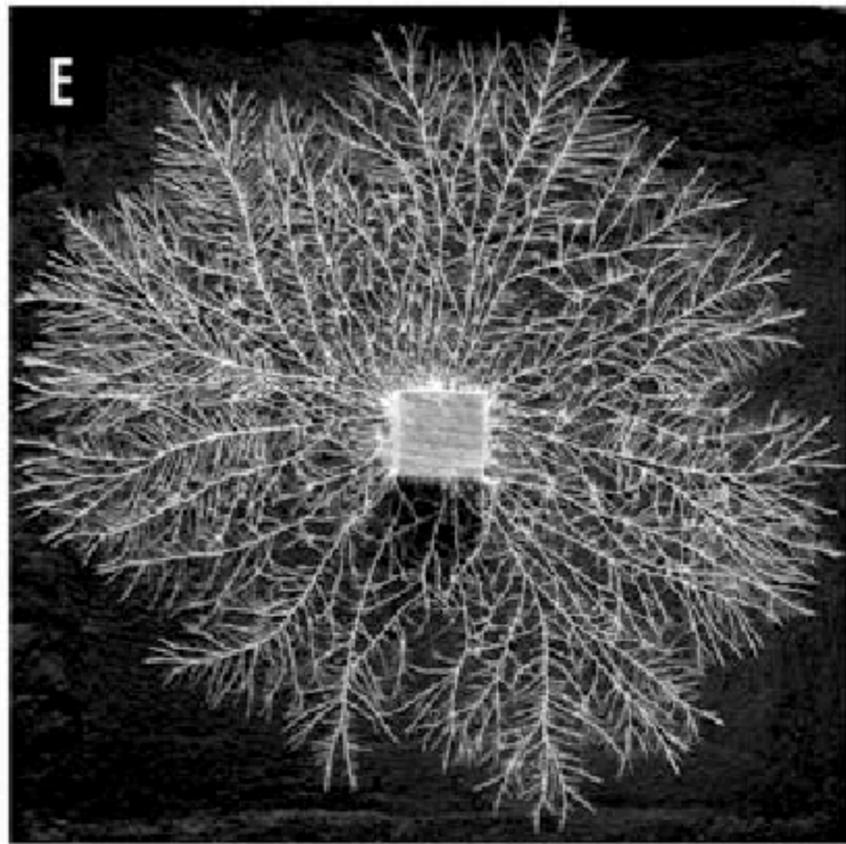
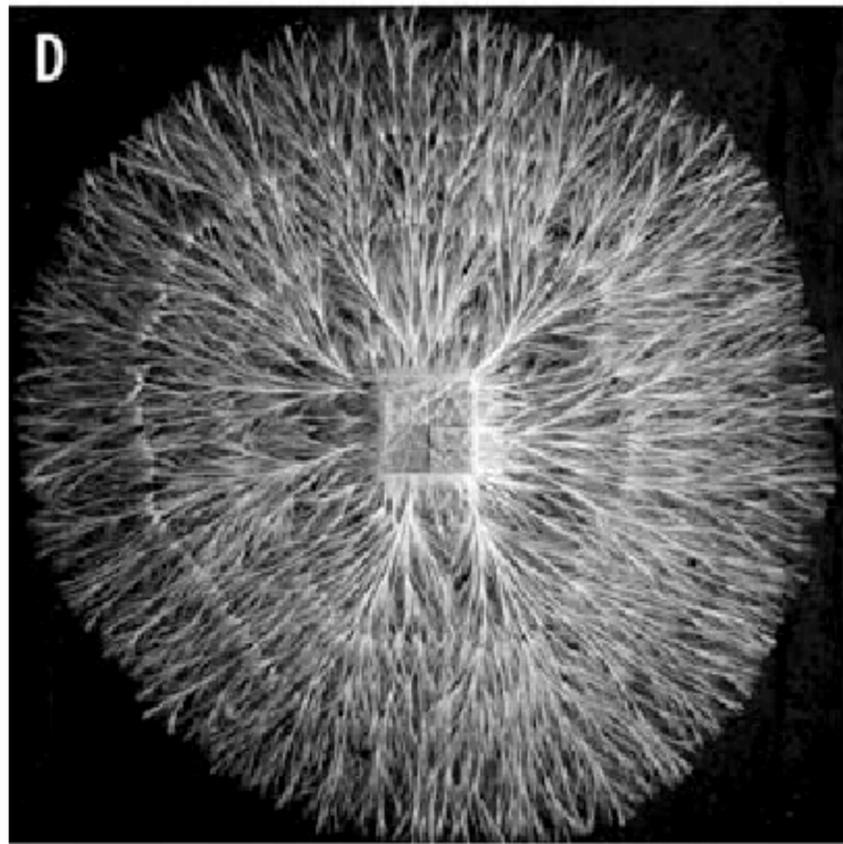
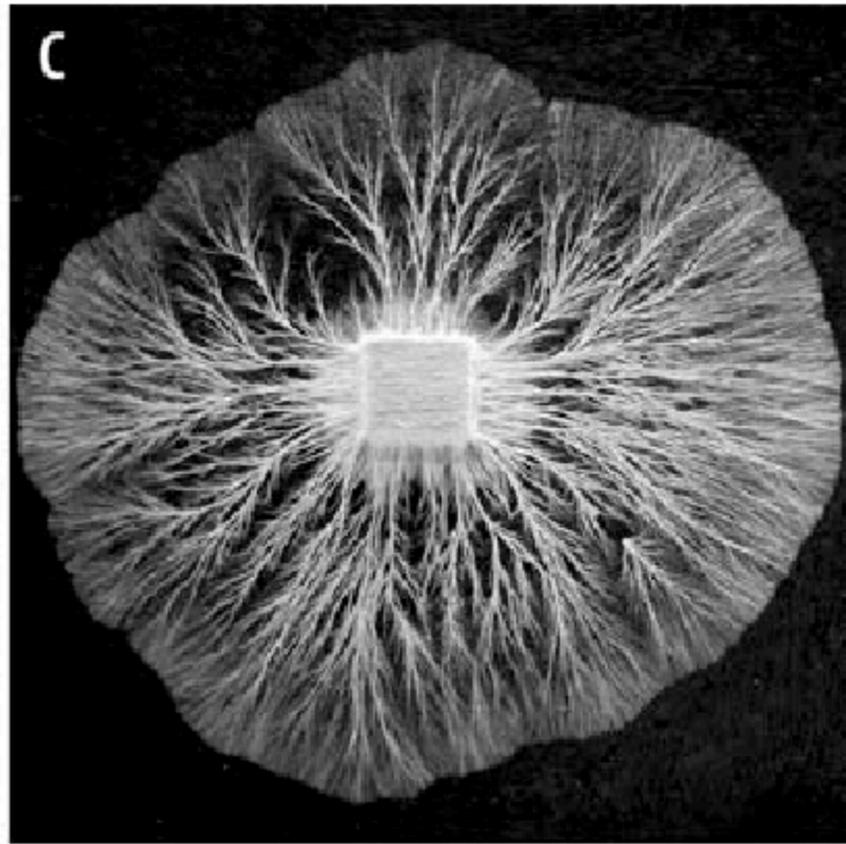
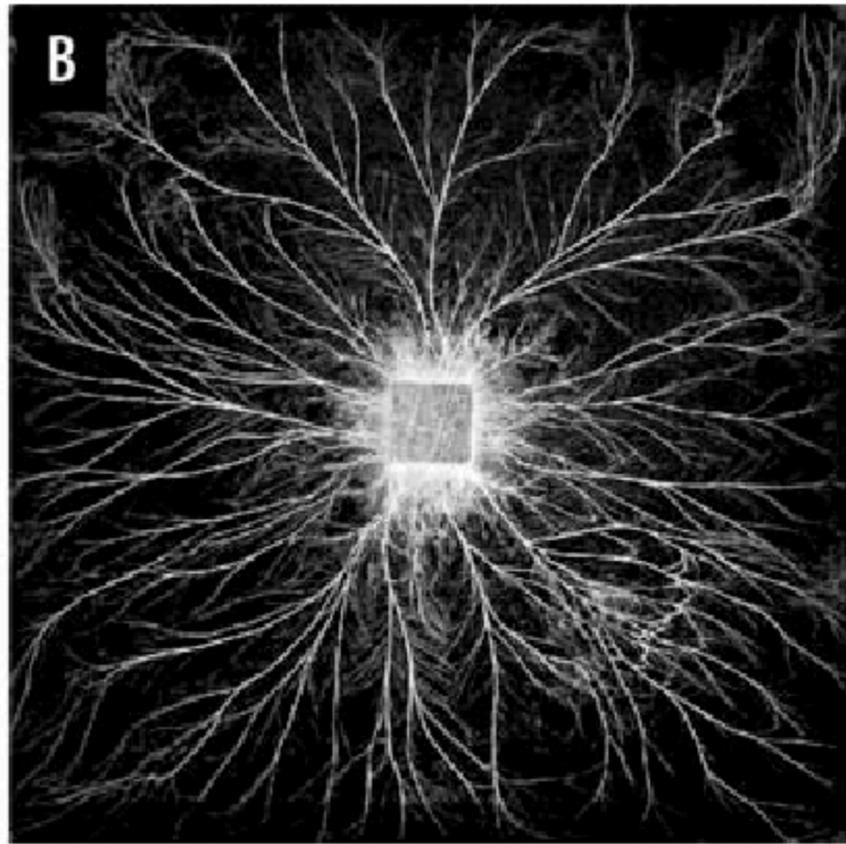
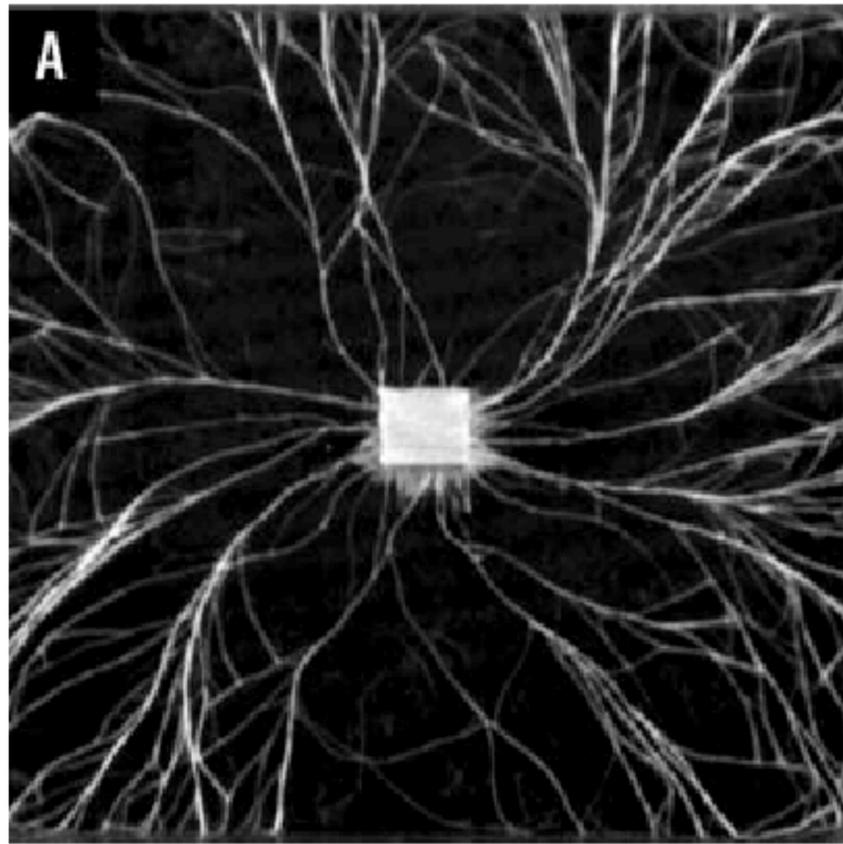
“We are as gods
and might as well get good at it.”

— **Stewart Brand**









Old Tjikko is a 9,550 year-old [Norway spruce](#), located on [Fulufjället](#) Mountain of [Dalarna](#) province in [Sweden](#). Old Tjikko originally gained fame as the "world's oldest tree."^[1] Old Tjikko is, however, a [clonal](#) tree that has regenerated new trunks, branches and roots over millennia rather than an [individual tree](#) of great age.





William Anders - Earthrise
December 24, 1968, Apollo 8

Final Product

Annual Report

PROFITS *

LOSSES

Staff
Mandatory

ANNUAL
Sales

Flow

SALES



A photograph of a green wall installation in a gallery. The wall is covered in dense, vibrant green grass that has been cut and laid out to create a textured, three-dimensional effect. The grass is arranged in a way that suggests a landscape with rolling hills and a central path. The installation is set against a white wall, and the ceiling above is a white grid with several track lights and a security camera. The word "CONTEXT" is overlaid in large, white, bold, sans-serif capital letters in the center of the image.

CONTEXT

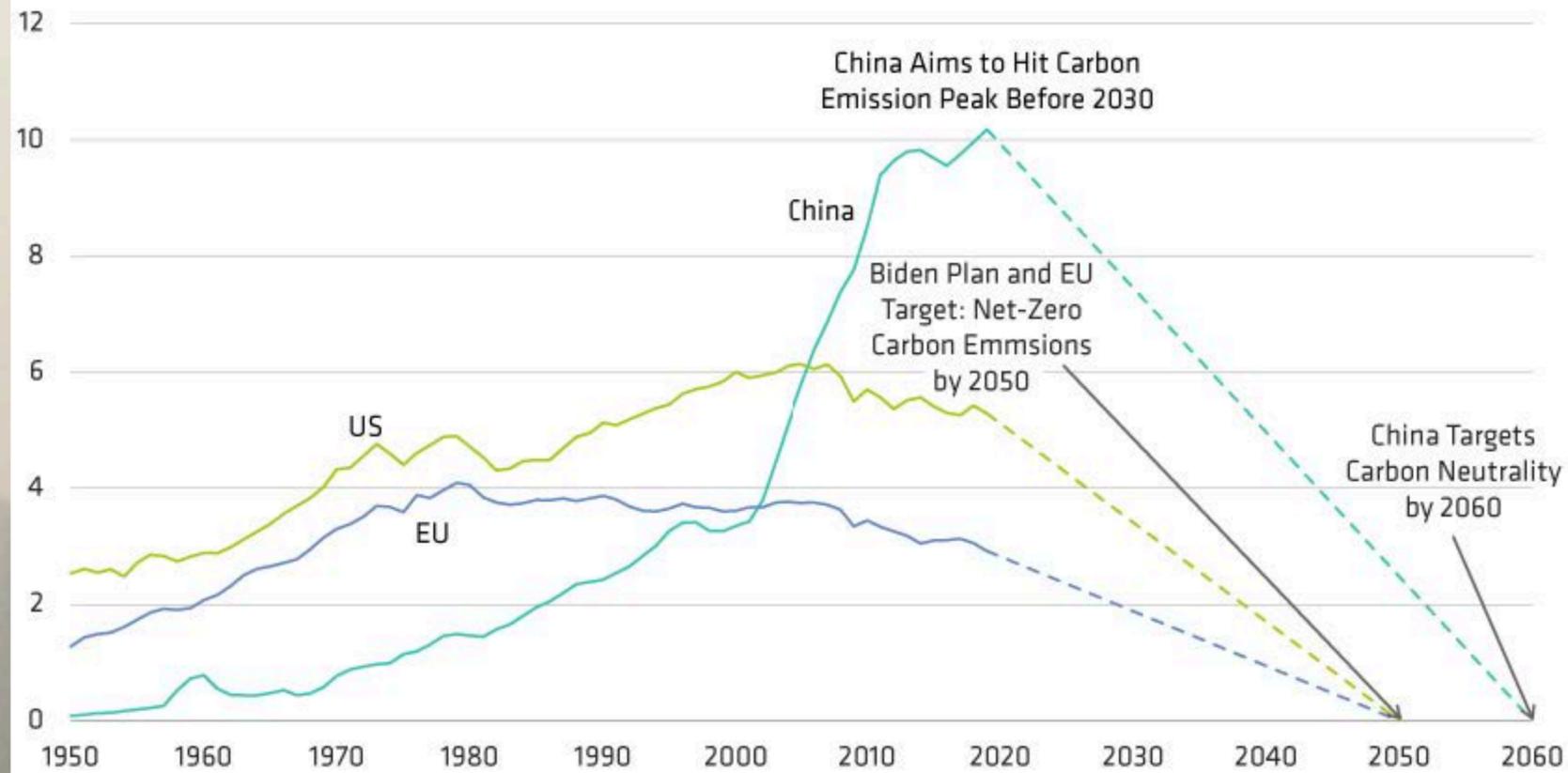
2050





China Aims to Achieve Carbon Neutrality by 2060

Annual CO₂ Emissions
Billion Tons per Year



Current analysis does not guarantee future results.

As of March 31, 2021

Chart shows carbon dioxide (CO₂) emissions from the burning of fossil fuels for energy and cement production. US and EU targets are in terms of greenhouse gas emissions where CO₂ is a major component but not exhaustive. Targets are net.

Source: Goldman Sachs, Our World in Data, UBS and AllianceBernstein (AB)



LONG-TERM THINKING



A large commercial airplane is shown from a low-angle, front-facing perspective on a runway at night. The aircraft's landing lights are illuminated, and its engines are visible. The background features airport infrastructure, including a fence and several tall light poles. The overall scene is dimly lit, with the primary light sources being the runway lights and the plane's own lights.

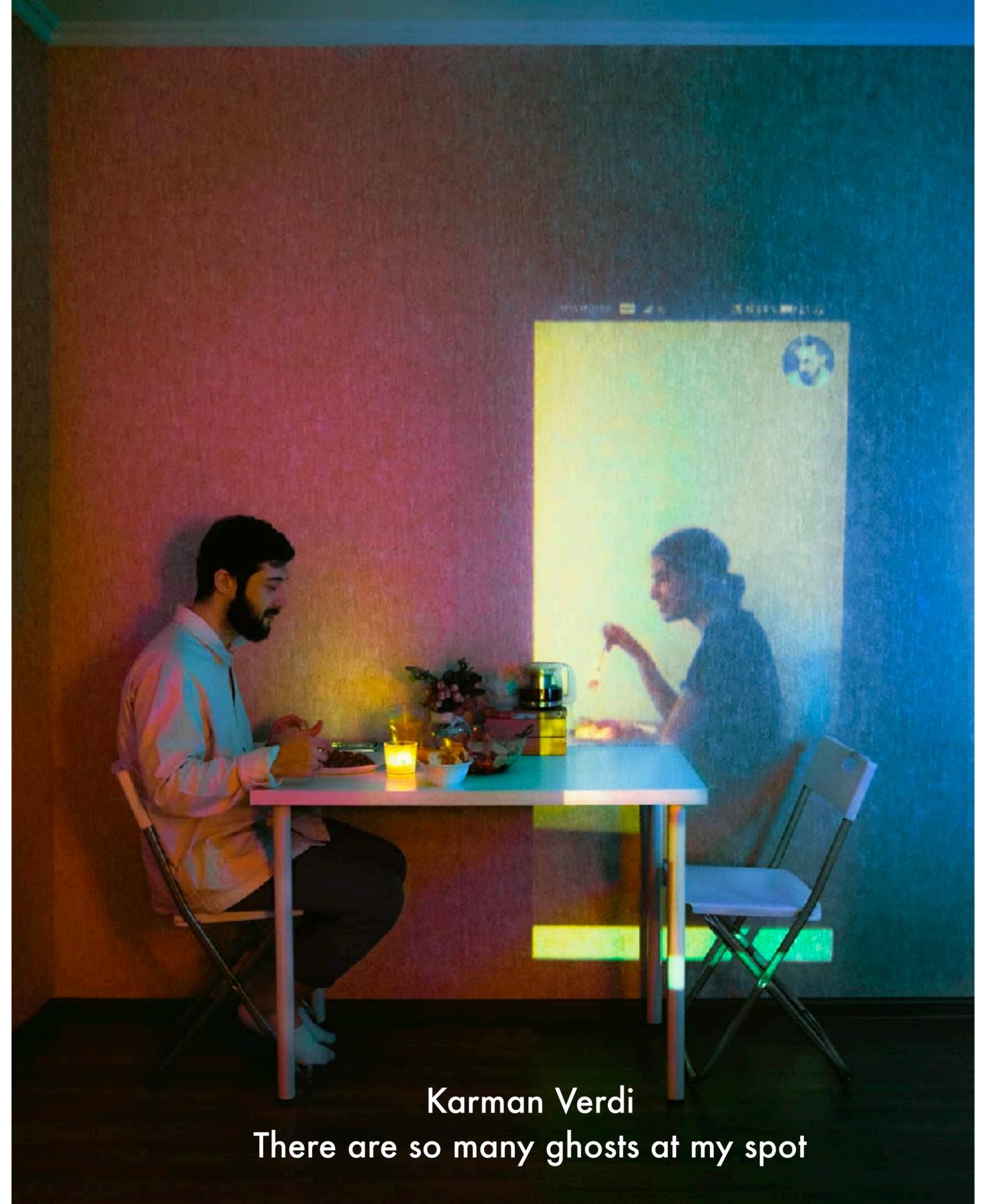
CONSTANT TURBULENCE

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Philipp Schmitt
Raising Robotic Natives

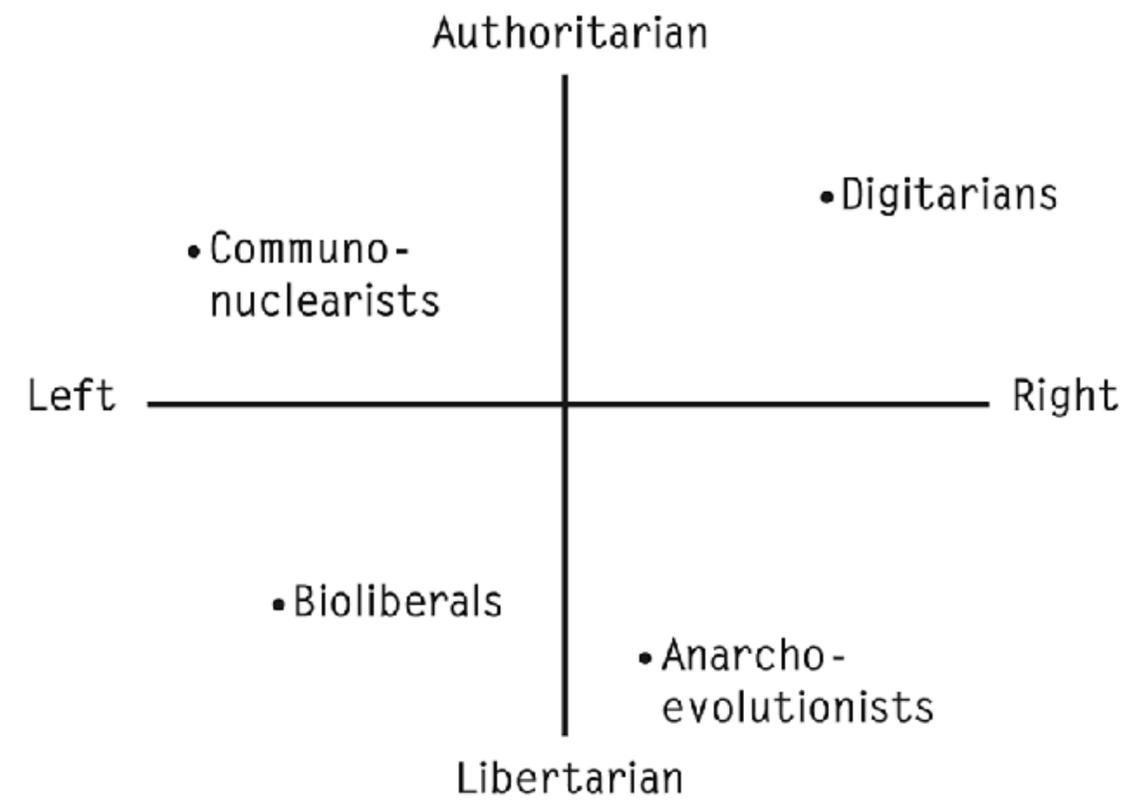
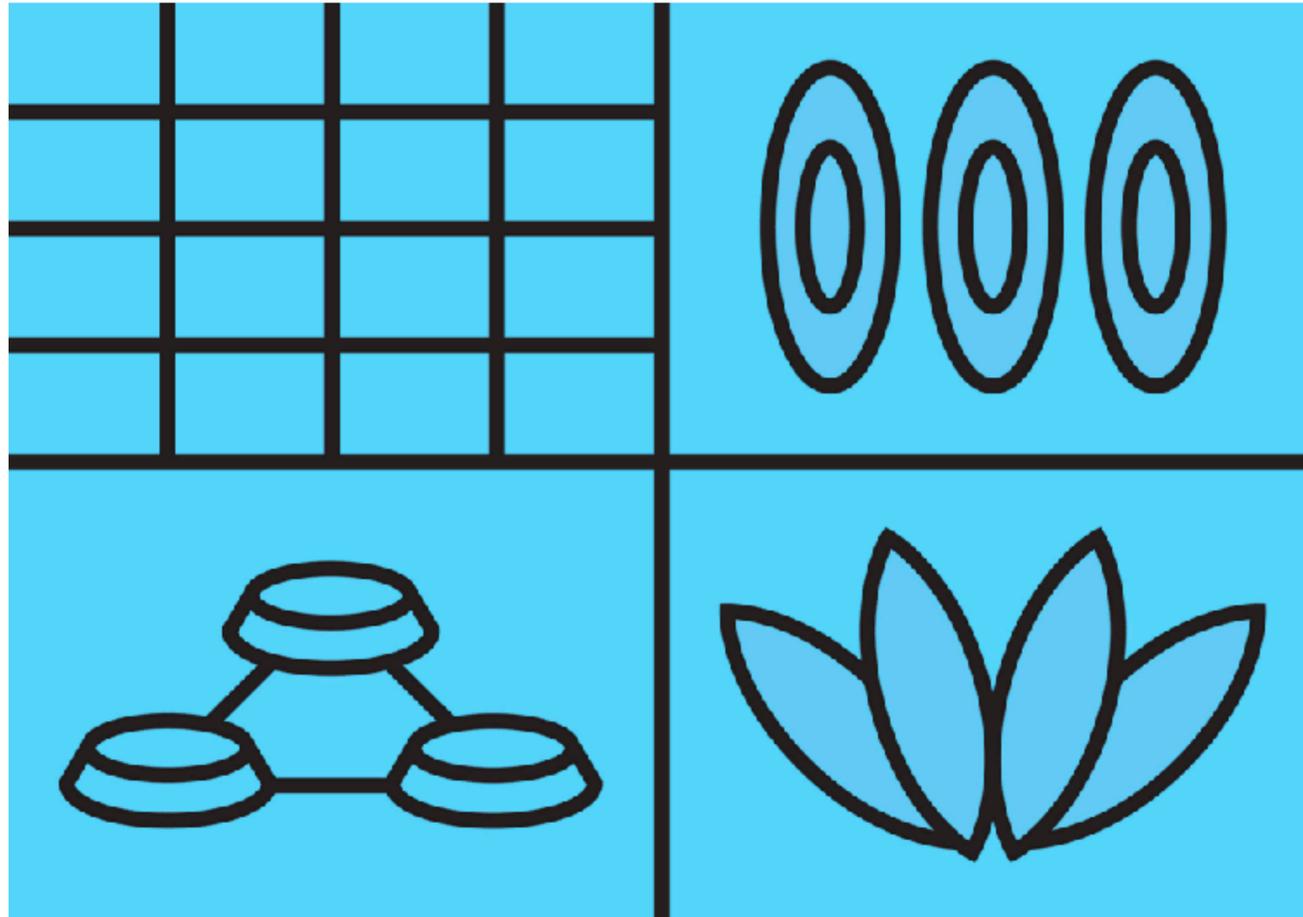
AMBIVALENTIE



Karman Verdi
There are so many ghosts at my spot

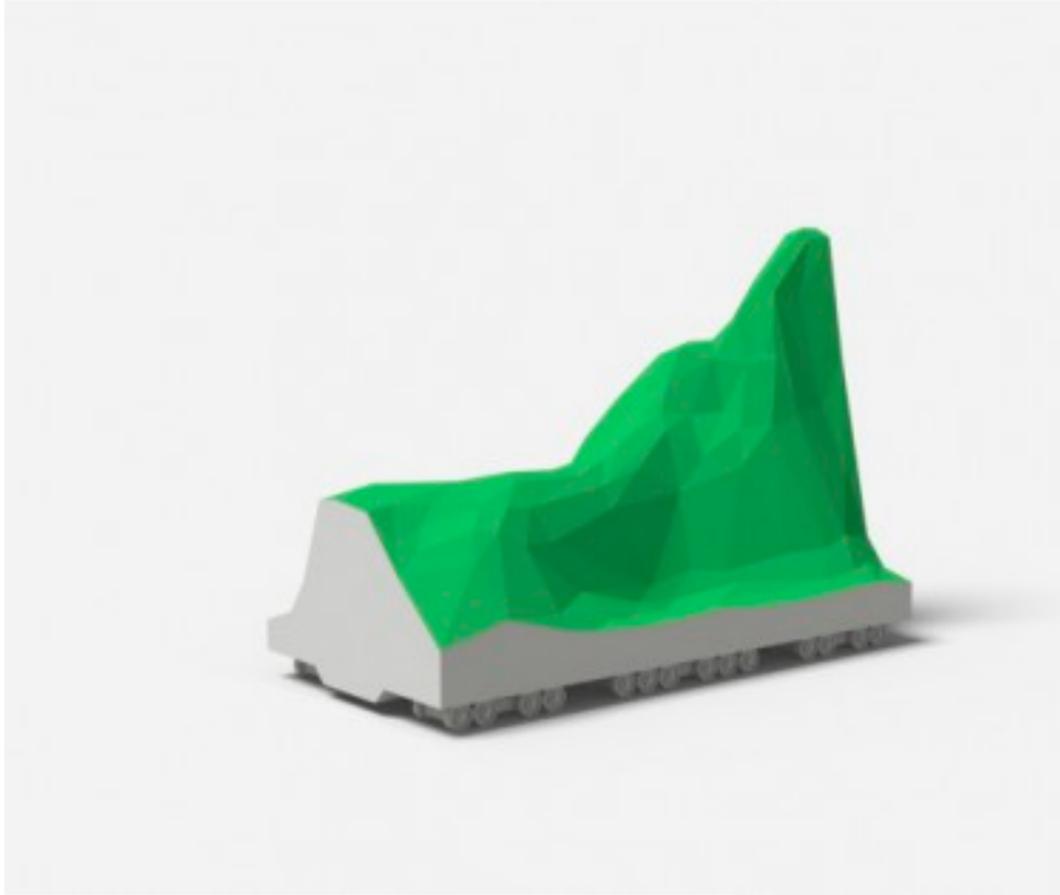
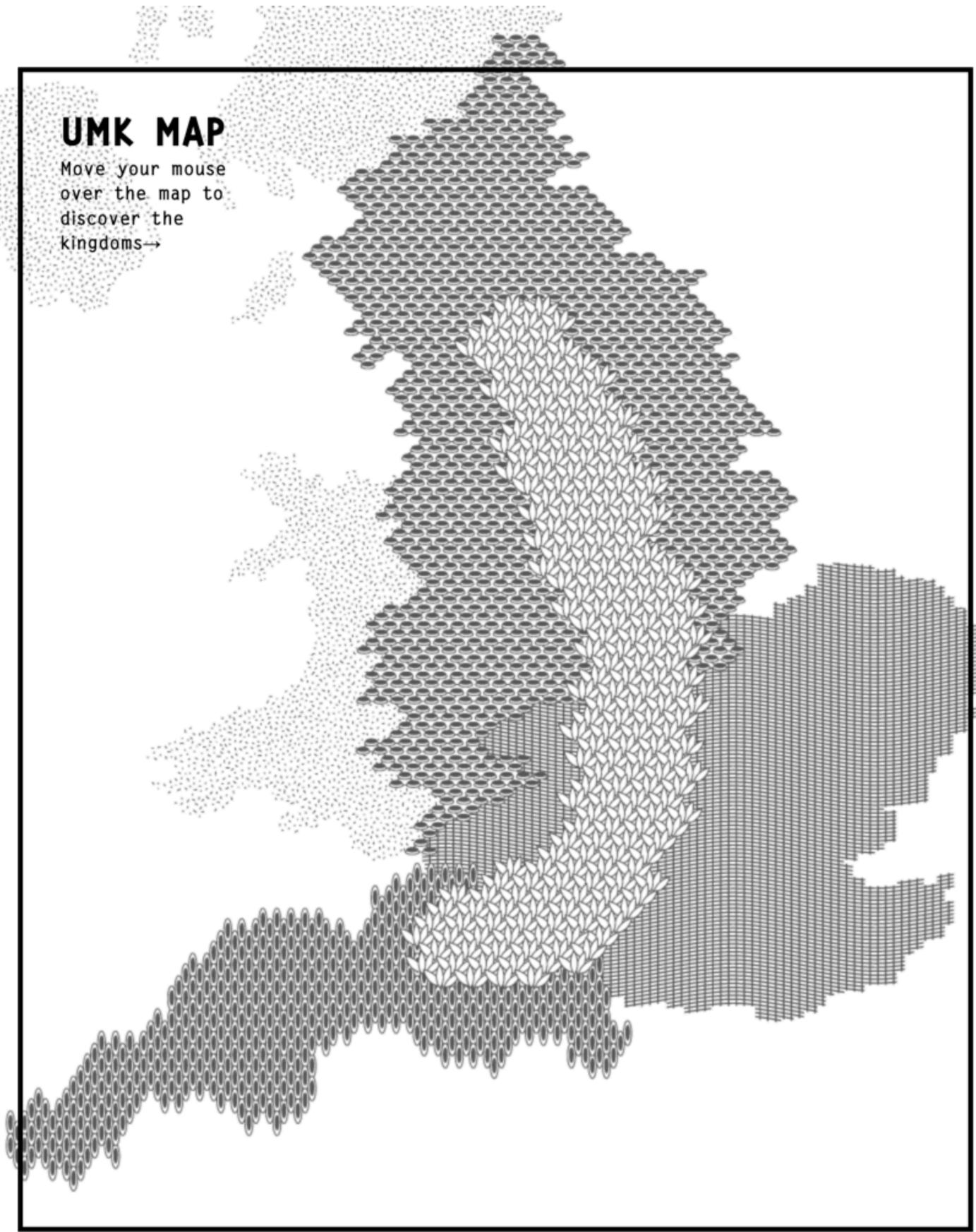
FUTURES LITERACY





UMK MAP

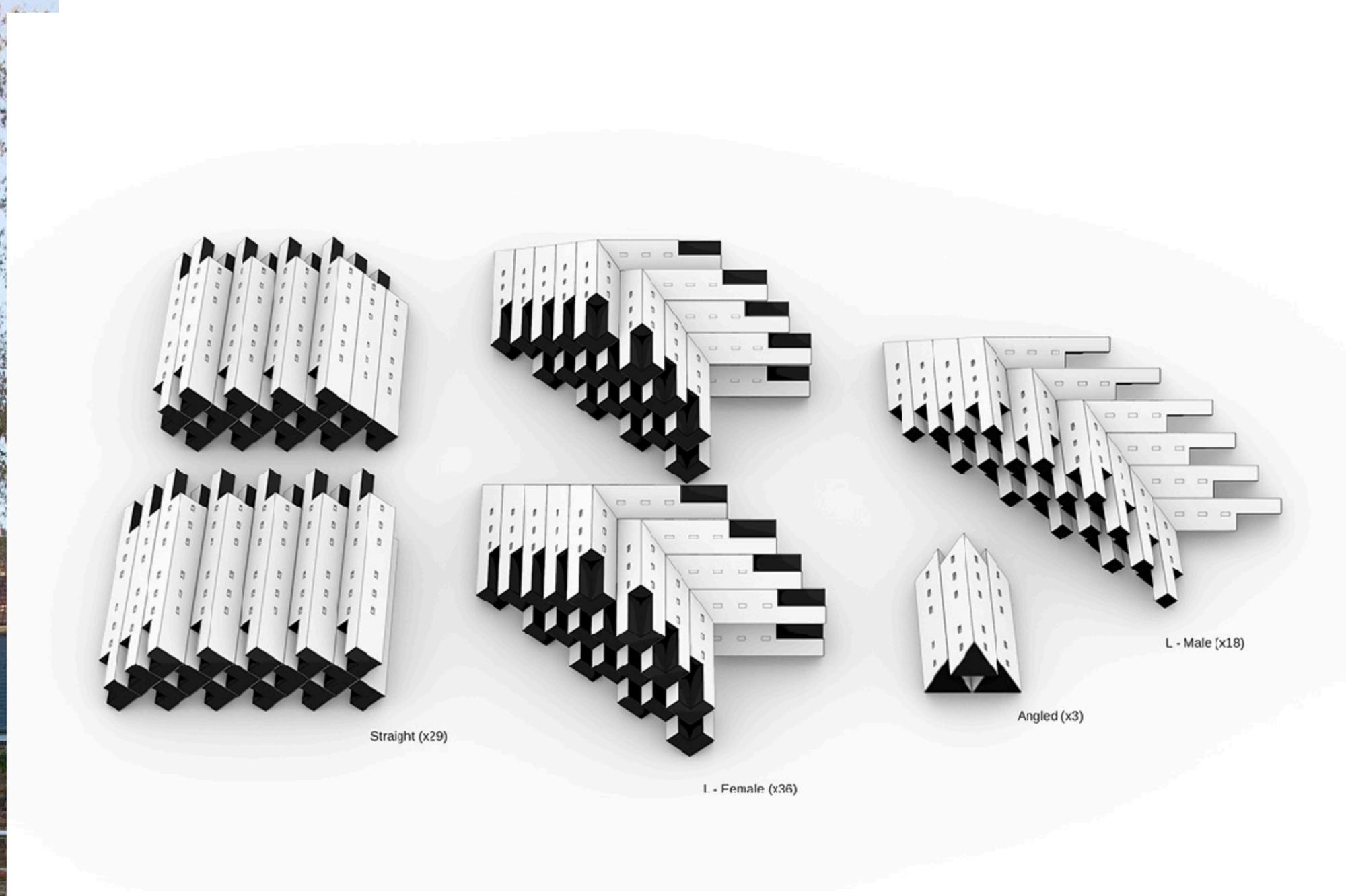
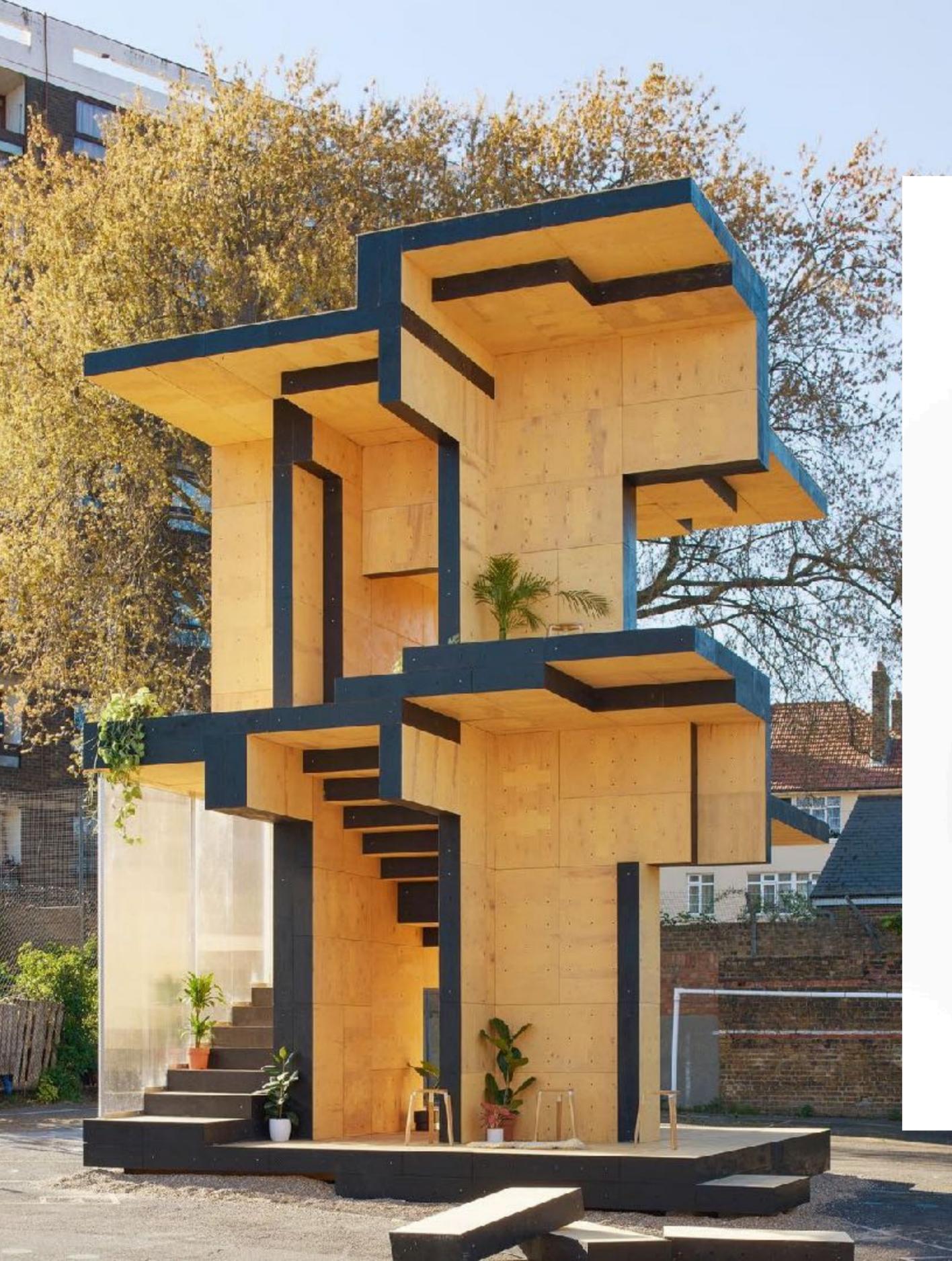
Move your mouse
over the map to
discover the
kingdoms→



“I am much more interested in exploring possibilities than likelihoods, because a great many more things might happen than actually do.”

— **David Brin**





We can't put it together.
It is together.



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The Last Whole Earth Catalog

access to tools



\$5

*Evening.
Thanks again.*