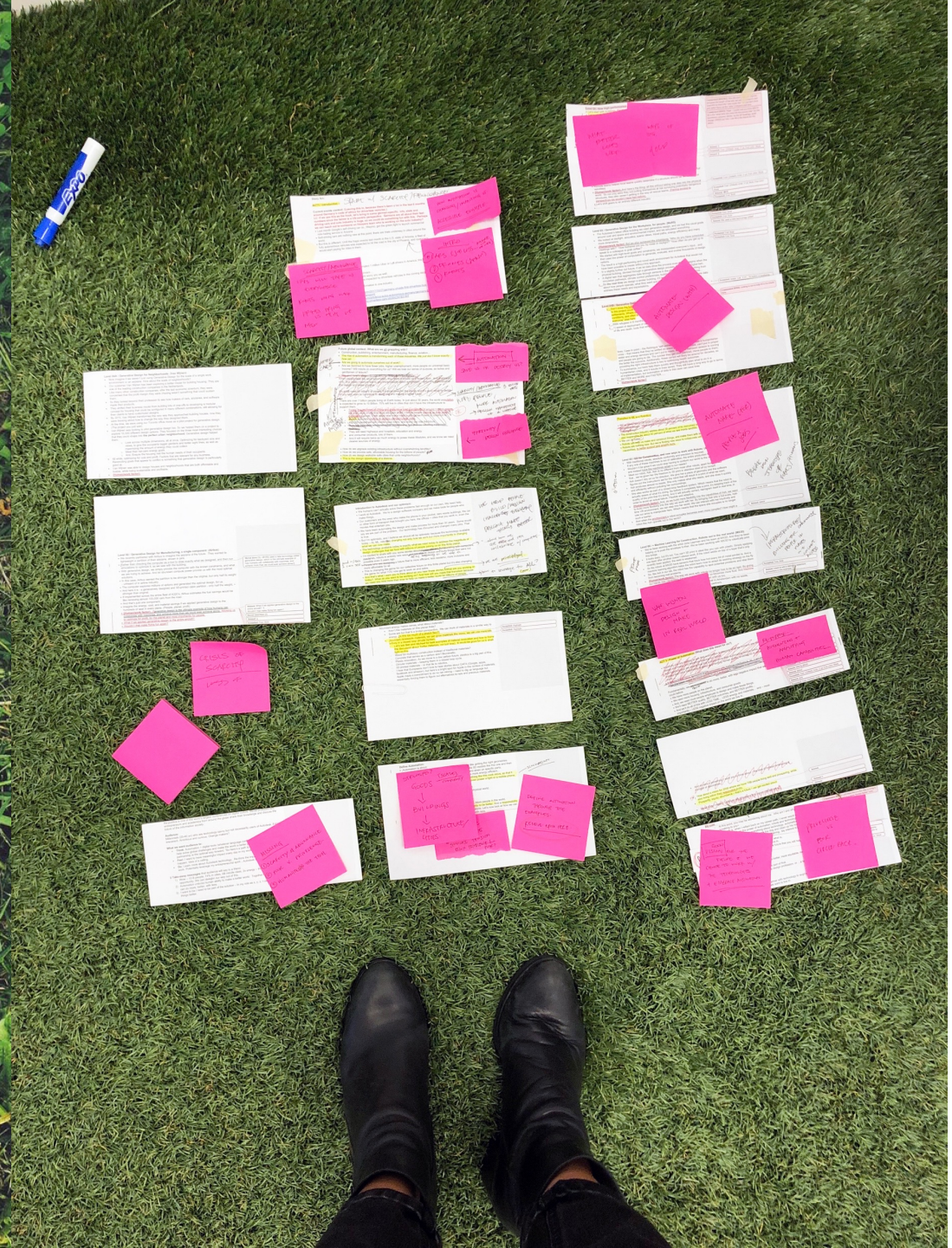
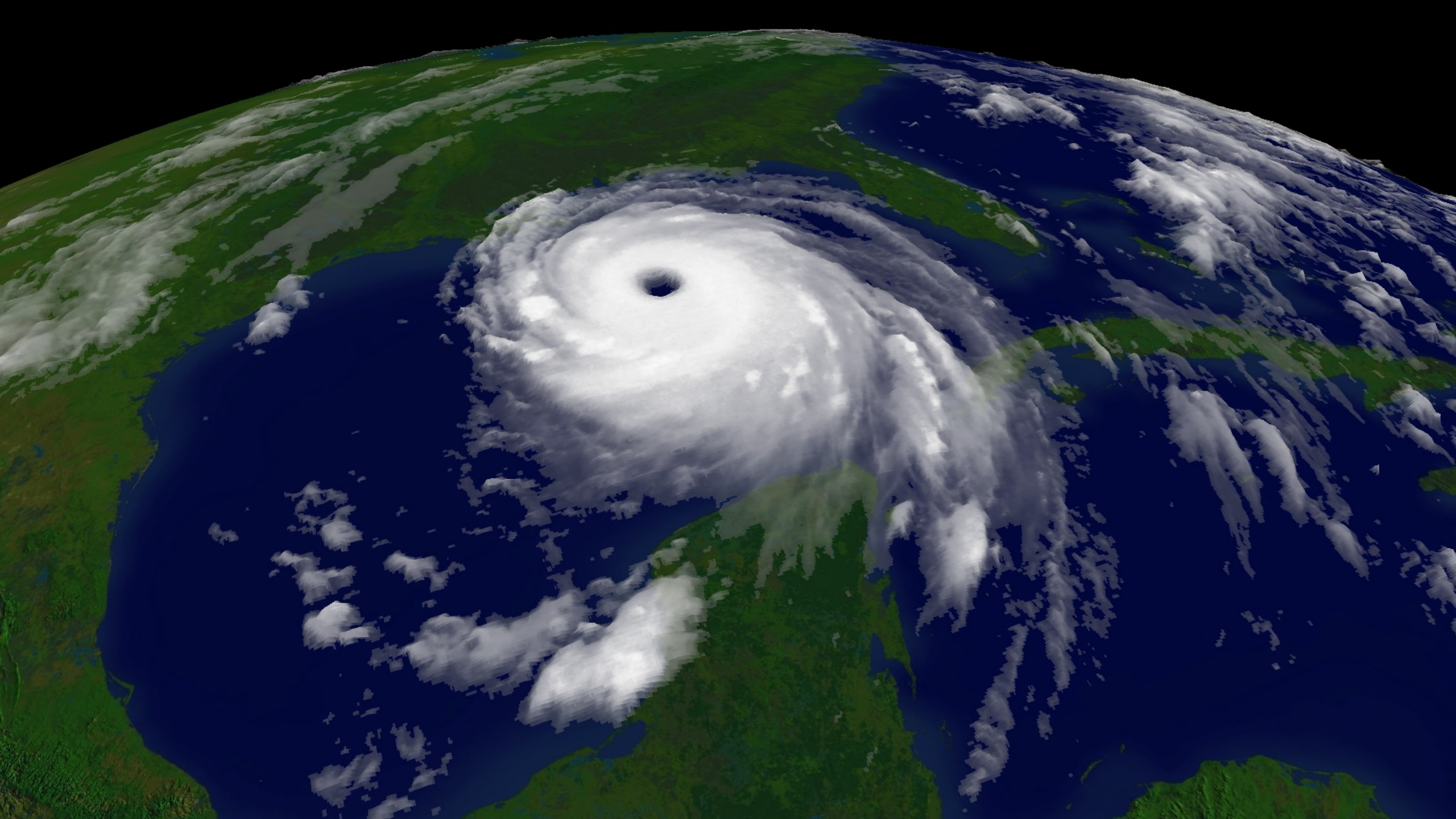
Small Acts of Future-Making:

Exploring the designer’s role as mediator of our future environments

Radha Mistry
@radha_mistry


GOAT






9-11
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NC
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32

Buildings are future artifacts!


CARAVAN
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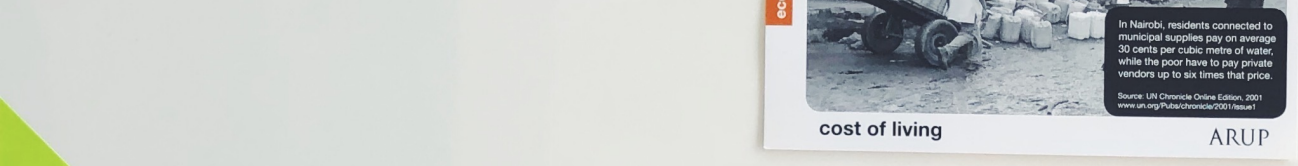
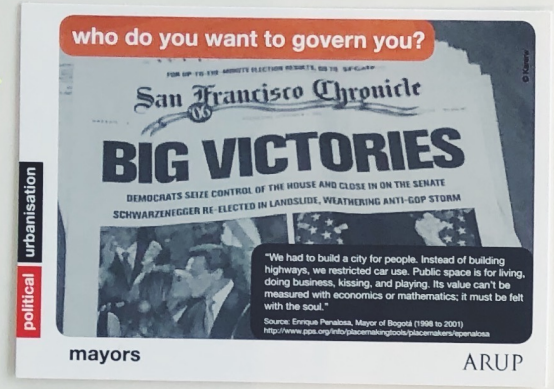
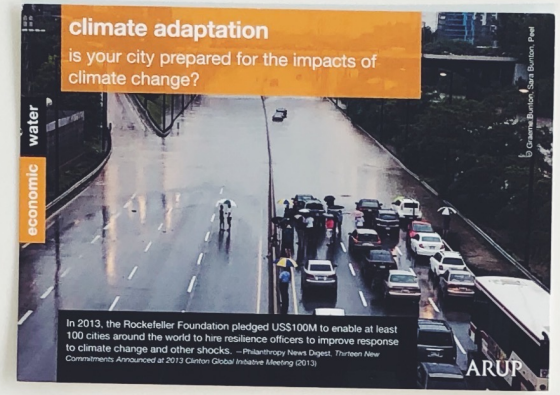
come


In Nairobi, residents connected to municipal supplies pay on average 30 cents per cubic metre of water, while the poor have to pay private vendors up to six times that price.
Source: UN Chronicle Online Edition, 2001 www.un.org/Pubs/chronicle/2001/issue1
cost of living
ARUP

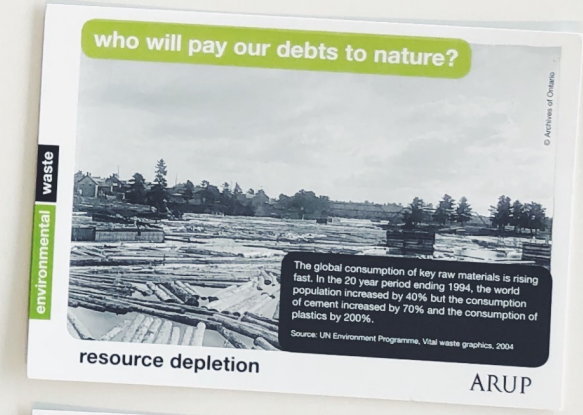

who do you want to govern you?
San Francisco Chronicle
BIG VICTORIES
DEMOCRATS SEIZE CONTROL OF THE HOUSE AND CLOSE IN ON THE SENATE
SCHWARZENEGGER RE-ELECTED IN LANDSLIDE, WEATHERING ANTI-GOP STORM
"We had to build a city for people. Instead of building highways, we restricted car use. Public space is for living, doing business, kissing, and playing. Its value can't be measured with economics or mathematics; it must be felt with the soul."
Source: Enrique Penalosa, Mayor of Bogotá (1998 to 2001) http://www.pps.org/info/placemakingtools/placemakers/epenalosa
urbanisation
political
mayors
ARUP

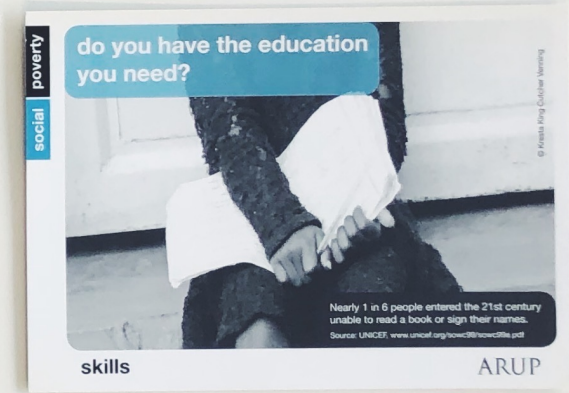

climate adaptation
is your city prepared for the impacts of climate change?
In 2013, the Rockefeller Foundation pledged US$100M to enable at least 100 cities around the world to hire resilience officers to improve response to climate change and other shocks. —Philanthropy News Digest, Thirteen New Commitments Announced at 2013 Clinton Global Initiative Meeting (2013)
water
economic
ARUP

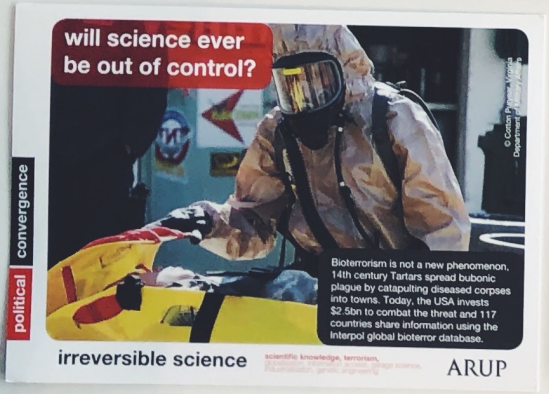

food production
should we all become vegetarians?
Vegetables require 50,000 litres of water per ton to produce, and fruits need 175,000 litres per ton. Pork, on the other hand, consumes 550,000 litres of water per ton of meat produced and beef, about 660,000 litres per ton. —New York Times Online (7 March 2014)
water
environmental
ARUP


are food emergencies inevitable?
Armed conflicts are now the leading cause of world hunger with the effects of HIV/AIDS and climate change not far behind, according to an FAO report presented to the Committee on World Food Security.
Source: Food and Agriculture Organisation of the United Nations 2005 http://www.fao.org/newsroom/en/news/2005/102562/index.html
demographics
political
primary needs
ARUP


who controls the global food supply?
Seventy-five percent of all human food is grain-based; three companies (Cargill, Archer Daniels Midland and Bunge) control about 90% of the global grain trade.
Source: Peter O'Driscoll, Part of the Problem: Trade, Transnational Corporations, and Hunger, 2005
food
economic
power players
ARUP


who will pay our debts to nature?
The global consumption of key raw materials is rising fast. In the 20 year period ending 1994, the world population increased by 40% but the consumption of cement increased by 70% and the consumption of plastics by 200%.
Source: UN Environment Programme, Vital waste graphics, 2004
waste
environmental
resource depletion
ARUP


do you have the education you need?
Nearly 1 in 6 people entered the 21st century unable to read a book or sign their names.
Source: UNICEF, www.uncaf.org/sowc98/sowc98e.pdf
poverty
social
skills
ARUP


will science ever be out of control?
Bioterrorism is not a new phenomenon. 14th century Tartars spread bubonic plague by catapulting diseased corpses into towns. Today, the USA invests $2.5bn to combat the threat and 117 countries share information using the Interpol global bioterror database.
convergence
political
irreversible science
ARUP


has the world become more unequal?
In 1990 the average American was 38 times richer than the average Tanzanian. Today the average American is 61 times richer. Purchasing power parity income in lower income countries as a group is one-thirteenth of that in high-income countries.
Source: http://hdr.undp.org/reports/global/2005/pdf/HDR05_complete.pdf
demographics
economic
two-speed society
ARUP


how green is your city?
"The historical experience of human progress shows that we should never seek development at the cost of wasting resources and damaging the environment. Development should be promoted along the road of high technological content, sound economic efficiency, low resources consumption, little environmental pollution, and full use of human resources."
Source: Hu Jintao, President of the People's Republic of China. Speech at the APEC CEO Summit, Santiago, Chile, 19 November 2004
urbanisation
environmental
eco-cities
ARUP


who has the answers?
Goldcorp Inc. a Toronto based gold mining firm, made public all their geological survey data through a competition with US$575k worth of prize money. Winners helped save 2-3 years exploration time and transformed the US$100M to a US$9bn company.
Source: http://fastcompany.com/magazine/59/mcewan.html
convergence
social
open innovation
ARUP


FORESIGHT!

What even is Foresight?

Strategic Foresight /

The intentional practice of thinking about the future to navigate uncertainty and more proactively capitalize on change.

Quiet the Noise


CHANGE

BLAME GAME —

Air Canada must honor refund policy invented by airline's chatbot

Air Canada appears to have quietly killed its costly chatbot support.

ASHLEY BELANGER - 2/16/2024, 9:12 AM

Alvin Man | iStock Editorial / Getty Images Plus

Enlarge

262

After months of resisting, Air Canada was forced to give a partial refund to a grieving passenger who was misled by an airline chatbot inaccurately explaining the airline's bereavement travel policy.

MICHAEL ISAAC STEIN SCIENCE 01.25.18 08:00 AM

HOW TO SAVE A TOWN FROM RISING WATERS

Amiya Br
Charles,

The road wasn't so exposed when it was built in 1956. Residents could walk through the thick marsh that surrounded the road to hunt and trap. But over the coming decades, the landscape transformed.

NEWS

Pokémon Go Players Invent Fake Beaches on Real Maps to Catch Rare Wigletts

EMANUEL MAIBERG · MAY 2, 2024 AT 12:56 PM

Volunteer
used Open
Pokémon
vandalizing
order to ch

Pokémon Go players are creating a headache for members of the open source map tool OpenStreetMap by adding fake beaches where they don't exist in hopes of more easily catching Wigletts, a Pokémon that only spawns on beaches.

OpenStreetMap is a free, open source map tool much like Google or Apple maps, but is maintained by a self-governing community of volunteers where anyone is welcome to contribute. An April 27 thread in the OpenStreetMap community forum first spotted the issue, flagging two users in Italy who began

How to Be a Future Human

Change is coming. Where do you want to land?

Siobhan O'Connor Follow

Jul 2 · ★ 1 min read

2.3K

We imagine humanity as a fixed state. People c


Provocation
Strategic Foresight
Planning

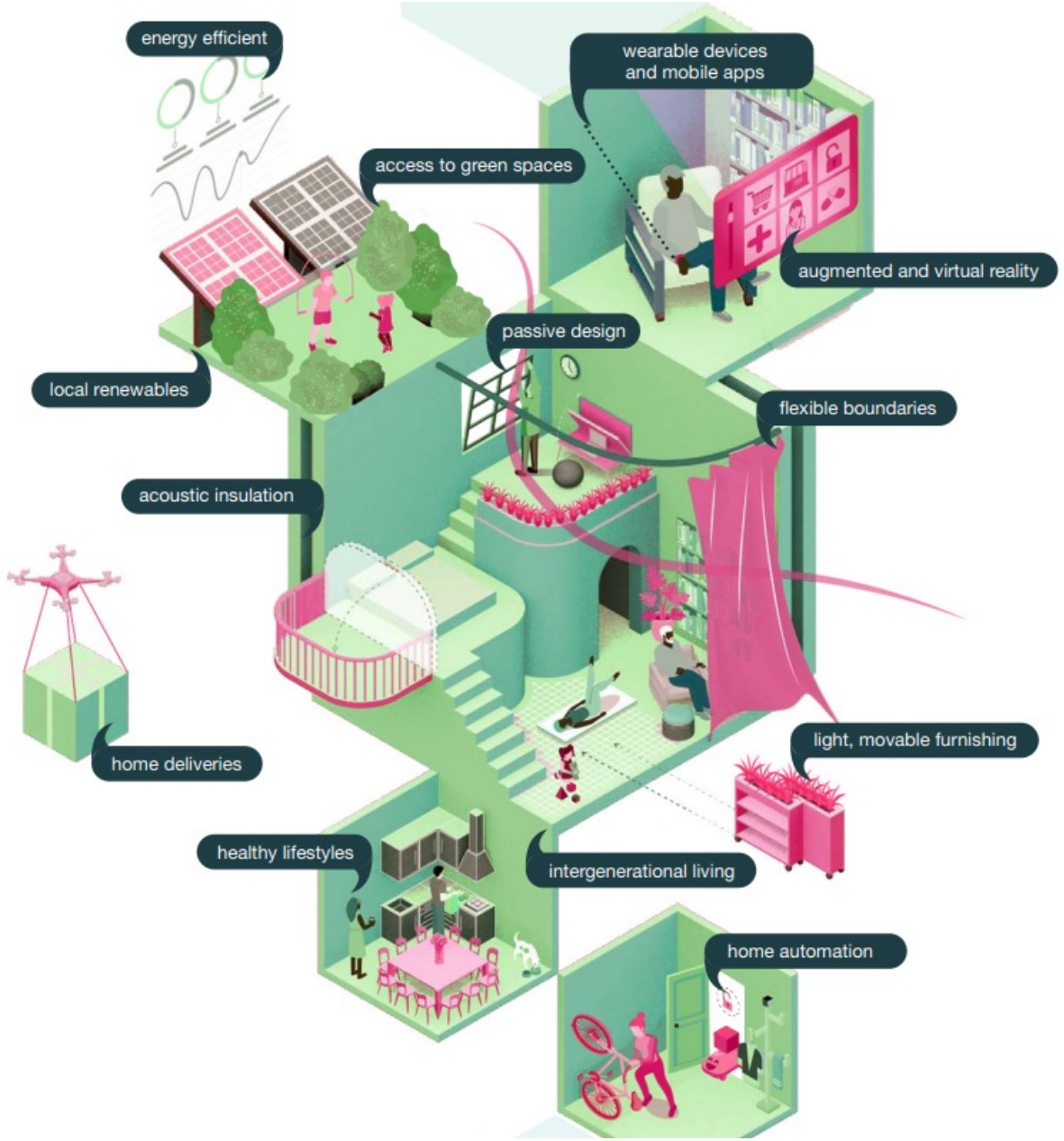

Science
Fiction
Strategic
Foresight
Strategy


Who is this future preferable for?

Foresight is a thing you can do!

(and still pay the bills)

Arup



Beyond the Curve

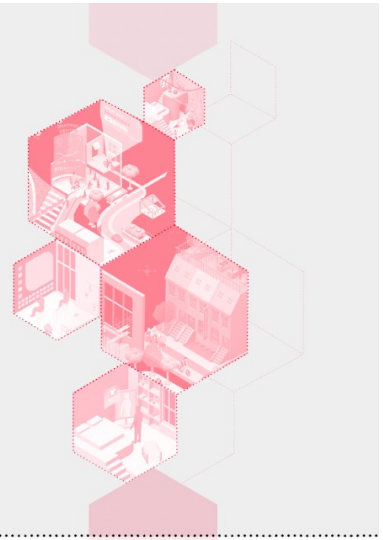
What is the future of our built environment after the COVID-19 pandemic?

The COVID-19 pandemic has caused disruption across the world, creating unprecedented challenges to our society and fundamentally changing life as we knew it. As we navigate this changing landscape, we explore the impact of COVID-19 across the built environment and how it might change our homes, neighbourhoods, transit, offices and retail. As we start to consider a post-pandemic world, we look at how COVID-19 will change many aspects of everyday life – from mixed-use neighbourhoods and access to green space to reconfigurable work environments. This report considers emerging themes and insights from around the world informed by practitioners across the built environment.

ARUP

Beyond the curve

a visual journey into our post-pandemic future



INTRODUCTION

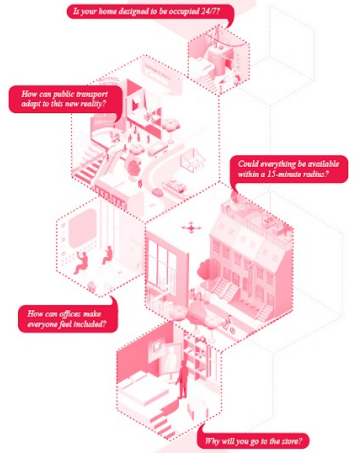
The COVID-19 pandemic has caused disruption across the world, fundamentally changing life as we knew it and highlighting the interconnectedness between us all and our planet. The impact on our lives, our society and our world will be felt for many years. This has happened at a crucial time for our planet, in which CO_2 emissions and environmental degradation are causing irreversible damage. As we start to consider a post-pandemic world and adjust to our new normal, we have an opportunity to respond to the challenges we face and catalyse new opportunities to shape a sustainable future for us all.

The illustrations in this publication explore how we might live, work and play across the built environment in a post-pandemic world – from a new working environment to an adapted use of public transport to a transformed shopping experience. They are an invitation to imagine and question our world in a post-pandemic era and an opportunity to consider how we can design and build a better, more resilient future. Here are some ideas to get you thinking.

SECTIONS

If you would like to talk more about how COVID-19 is reshaping your world, please contact foresight@arup.com or visit www.arup.com/covid-19

Overview



HOME

A sudden shift to remote working has forced our home office to compete with all other aspects of our lives. Homes have made space for work, crèches, schools, universities, gyms and entertainment. Technology has become our new window to the world, condensing work and social life into a screen. As we spend more time at home, our relationships, wellbeing, productivity, and environmental footprint have become more dependent on the way our spaces are designed.

- Making Space
- Virtually There
- Safe, Healthy and Efficient Homes for All

NEIGHBOURHOODS

Movement restrictions to manage the spread of COVID-19 have shifted life closer to home, reviving neighbourhoods and local communities. The resilience of global supply chains is being tested as essentials run short and online purchases multiplied overnight. Meanwhile, health regulations clash with people's desire for social connection and outdoor space. How will our neighbourhood lifestyles, behaviours and values change in response to new health and safety standards induced by the pandemic?

- A New Localism
- Better Together
- Back to the Roots

TRANSIT

While public transport has been hailed as the most environmentally and economically sustainable mobility solution, fear of COVID-19 transmission has nearly brought the system to a halt. Yet, as public transport remains essential for society, many have reverted to bikes or personal cars. The restrictions and increased demand have also challenged freight and logistics. How can transport infrastructure adapt to support safe transit and efficient cargo management without further damaging our environment?

- From Passive to Active Mobility
- Safety First
- Freight Reimagined

OFFICE

The pandemic has fast-tracked employer trust and confidence in managing teams online, tearing down technological and cultural barriers to remote working. Restricted mobility, coupled with affordability of life in urban centers, could affect the need for centrally located offices. However, isolation has revived a desire for spaces that foster collaboration and social experiences. Fears of infection and future outbreaks are calling for strategies that increase a perception of safety driven by greater flexibility in use and access.

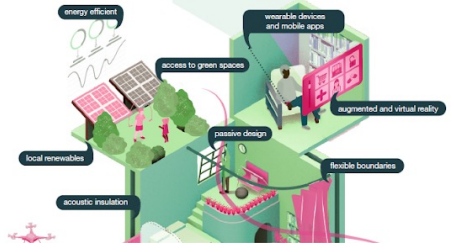
- Looking Forward to the Office
- Distributed Working Patterns
- Futureproofed Safety

RETAIL

Struggles with health and safety, supply chains, labour, cash flow and demand are threatening closure of retail businesses. A substantial shift to online shopping will put the role of physical stores under continued scrutiny as footfall may not recover. Emerging from the current crisis will involve an intimate understanding of changing lifestyles, the mindful integration of multiple channels and a focus on identity, experience and entertainment. How can we transform stores and high-streets into engaging destinations?

- Vibrant Streets
- One-of-a-kind Experiences
- Behind the Scenes

Home



MAKING SPACE

How can our home improve our physical and mental wellbeing?

Establishing boundaries to separate activities temporally and spatially will be crucial for maintaining physical and mental health in an increasingly interpersonal living. Light, movable furnishing and partitions can introduce more flexibility to domestic spaces to create comfortable working spaces. Flexible boundaries can be created with moveable shelving units, curtains, or plants to contract and expand environments with little effort. With personal commitments blending with our work lives, self-discipline and time management will be increasingly important to maintain a healthy lifestyle. Wearable devices and mobile apps can assist in tracking how we spend our time and reminding us to look after our wellbeing.

FURTHER READING

- Reconfigurable Co-Living Home Interior — *Find out about this case study*
- Low-Power Health Monitoring Watch — *Find out about this case study*
- Italy's First Carbon-Neutral Social Housing — *Read about this project*

VIRTUALLY THERE

How can digital technologies bring the world into our home?

Digital technologies have become key gateways for essential services, work and socialisation. As many have turned to online shopping to buy everything

- On-Demand Local Shipping — *Find out about this case study*

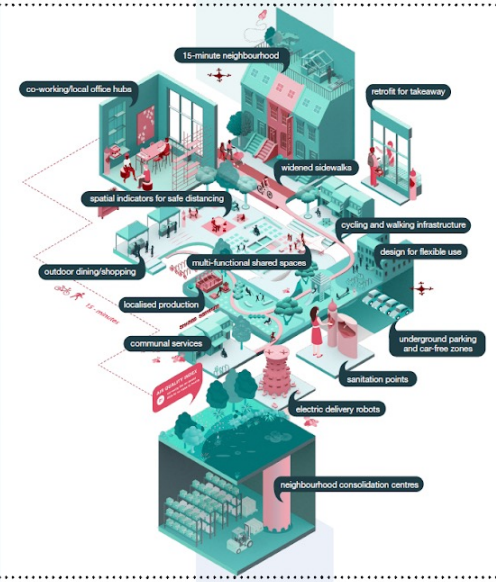
SAFE, HEALTHY AND EFFICIENT HOMES FOR ALL

Is your home designed to be occupied 24/7?

Spending more time at home means domestic spaces have a greater influence on our wellbeing, finances and carbon footprint. This means there will be greater demand for universal access to living spaces that support healthy lifestyles while also reducing resource consumption. Access to green spaces, windows, terraces and courtyards will be increasingly valued in all urban settlements. Acoustic insulation will be needed to ensure privacy and reduce stress. Solutions that make homes more energy efficient and less wasteful can cut utilities bills and reduce the carbon emission of our households. These include passive design, microgrids that allow the integration of local renewables and water harvesting and reuse systems.

- Open Source Housing Initiative — *Find out about this case study*
- IDOS Intelligent Energy Control System — *Find out about this case study*
- A Global Virus: Reveals Local Inequalities — *Rated this article*

Neighbourhoods



A NEW LOCALISM

Could everything be available within a 15-minute radius?

The quality of the immediate neighbourhood, rather than proximity to a city centre or economic hub, has defined our experiences during the pandemic. Distributed hubs of mixed-use '15-minute neighbourhoods' can provide access to essential goods and services on our doorstep. Car-free zones, with restricted traffic, underground parking at their outskirts and accessible cycling and walking infrastructure, reclaim streets and public space for people and support physical distancing. Restaurants and shops can spill out onto streets and plazas to provide safe distances for their customers and staff without congesting pavements; and widened sidewalks can support queue management where reservations, digital queues and take-away services aren't possible.

BETTER TOGETHER

Can a strong community support livelihoods?

Lifestyle shifts to flexible, remote working and conscious travel behaviours increase the demand for local amenities to support new routines. Co-working and local office hubs close to our homes or proximate transport hubs will provide an alternative to home-working, with access to high-quality equipment and a local community. The economic downturn will revive communal services and the sharing economy, creating a shift from ownership to access to goods and services. Multi-functional shared spaces designed for day and night-time use will revive underused areas. Strict health and safety regulations will be critical and enhanced through naturally antiviral surfaces, sanitation points and spatial indicators for safe distancing.

BACK TO THE ROOTS

Can localisation increase resilience and efficiencies?

Movement restrictions and a shift to online shopping have put global supply chains to the test while local business struggle. More localised production, urban farming and the design of assets for flexible use and adaptability will improve the speed of emergency response and strengthen future resilience. Adaption models for local providers can include retrofit for takeaway and the establishment of commercially viable delivery options. Neighbourhood consolidation centres increase efficiencies and the sustainability of increasing parcel volumes by minimising single delivery journeys, complemented by automated last mile solutions, such as electric delivery robots and pick-up points.

FURTHER READING

- 'Superblock' Urban Mobility Plan — *Find out about this case study*
- 'Deliveroo Food Market' Physical Shop — *Find out about this case study*
- Towards Superhia — *Rated this publication*
- Metro Station Co-Working Spaces — *Find out about this case study*
- Community Supporting 'Meanwhile' Space — *Find out about this case study*
- A Resilient City is Built on Community Spirit — *Rated this article*
- Urban Farming Self-Sufficiency Fund — *Find out about this case study*
- Autonomous Cargo Robot — *Find out about this case study*
- A More Resilient Food System — *Rated this article*

Transit

FROM PASSIVE TO ACTIVE MOBILITY

Is sustainable transport possible in times of isolation?

To reduce the risk of infection in transit, people have turned to personal vehicles and micro mobility options such as bikes, scooters or walking for essential journeys. Environmentally and economically sustainable options need to be prioritised to ensure planetary health and equal, inclusive access to services, goods, people and opportunities. These include electric vehicle (EV) infrastructure and an interconnected cycling and walking network considering the end to end journey with cycle parking or dedicated bike carriages. Repurposing roads as bikeways and dynamic road management that reconfigures lane and pavement widths to suit demand and priority users can quickly adapt existing infrastructure to new modes and use.

SAFETY FIRST

How can public transport adapt to this new reality?

Public transport systems have become high-risk travel options. To protect public health and reassure travellers of their safety, critical interactions, risk and pressure points need to be addressed. Pre-booked travel, flexible working and 24/7 operation ensure reduced occupancy throughout the day and spatial redistribution such as back-to-back seating creates safe distancing. Carriage weight sensors can further signal when maximum capacity is reached; contactless interactions and barrier-free movements reduce congestion and exposure, and automated temperature scans detect infected individuals at station entrances. Improved ventilation, antiviral surfaces and the regular, automated UV sanitation of high exposure zones, such as handrails, minimise pathogens in public space.

FREIGHT REIMAGINED

How can we adapt transport infrastructure to manage cargo demand?

The demand on the movement of goods has spiked to keep up with new online behaviours and localised lifestyles. Airline operators have already shifted their focus to cargo solutions, adapting fleets to more flexibly handle people and goods. Introducing hybrid passenger and cargo solutions by repurposing underused space on metros, buses and trains for freight could improve the commercial viability of transit systems and help manage demand. Automated loading systems and low-carbon distribution through consolidation and green last mile delivery solutions can ensure environmental sustainability, improve efficiencies and reduce the cost of operations.

FURTHER READING

- Multi-Use Kerb Concept — *Find out about this case study*
- Emergency Bike Lane Expansion — *Find out about this case study*
- Active Transport For All — *Rated this article*
- Black Silicon Antibacterial Nanomaterial — *Find out about this case study*
- 'Safe Capacity' Train Weight Sensors — *Find out about this case study*
- Post-Pandemic Public Transport Plans — *Rated this article*
- Automated Freight Train Concept — *Find out about this case study*
- 24/7 Autonomous Delivery Vehicle — *Find out about this case study*
- Modelling a Changed World — *Rated this article*

Office

Abundance: Regenerative Futures

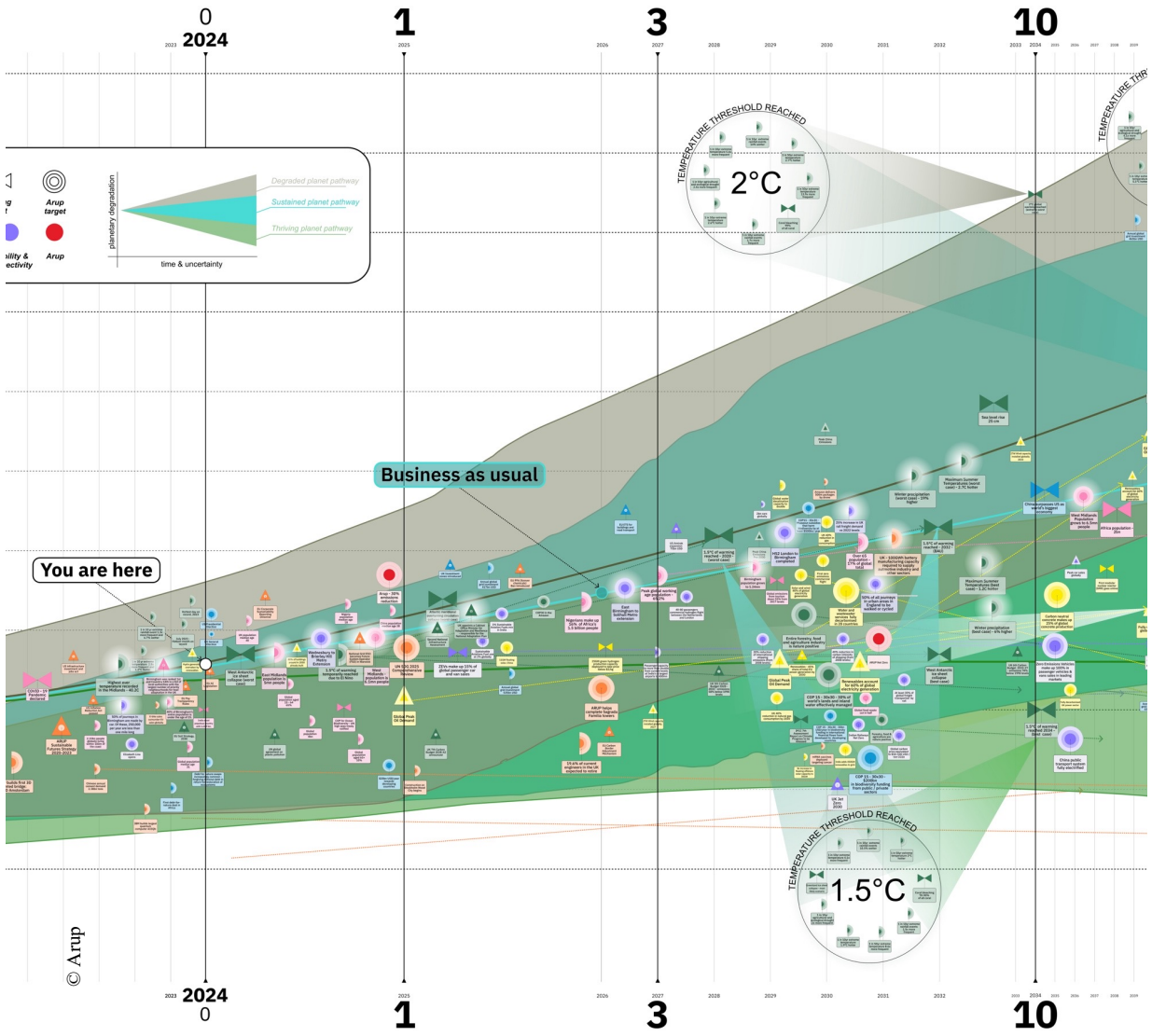
What if cities embraced regenerative design principles?

Arup Foresight's design fiction film, 'Abundance' is set in a near-future London. The film depicts a day in the life of a regenerative designer and features working prototypes showcased in an exhibition on 'Regenerative Futures' at the Victoria and Albert Museum.

The film explores concepts such as household items made from food scraps and 3D-printed cargo tricycles from plastic waste.

ARUP

Engaging our hearts *and* minds
Design futures at Arup



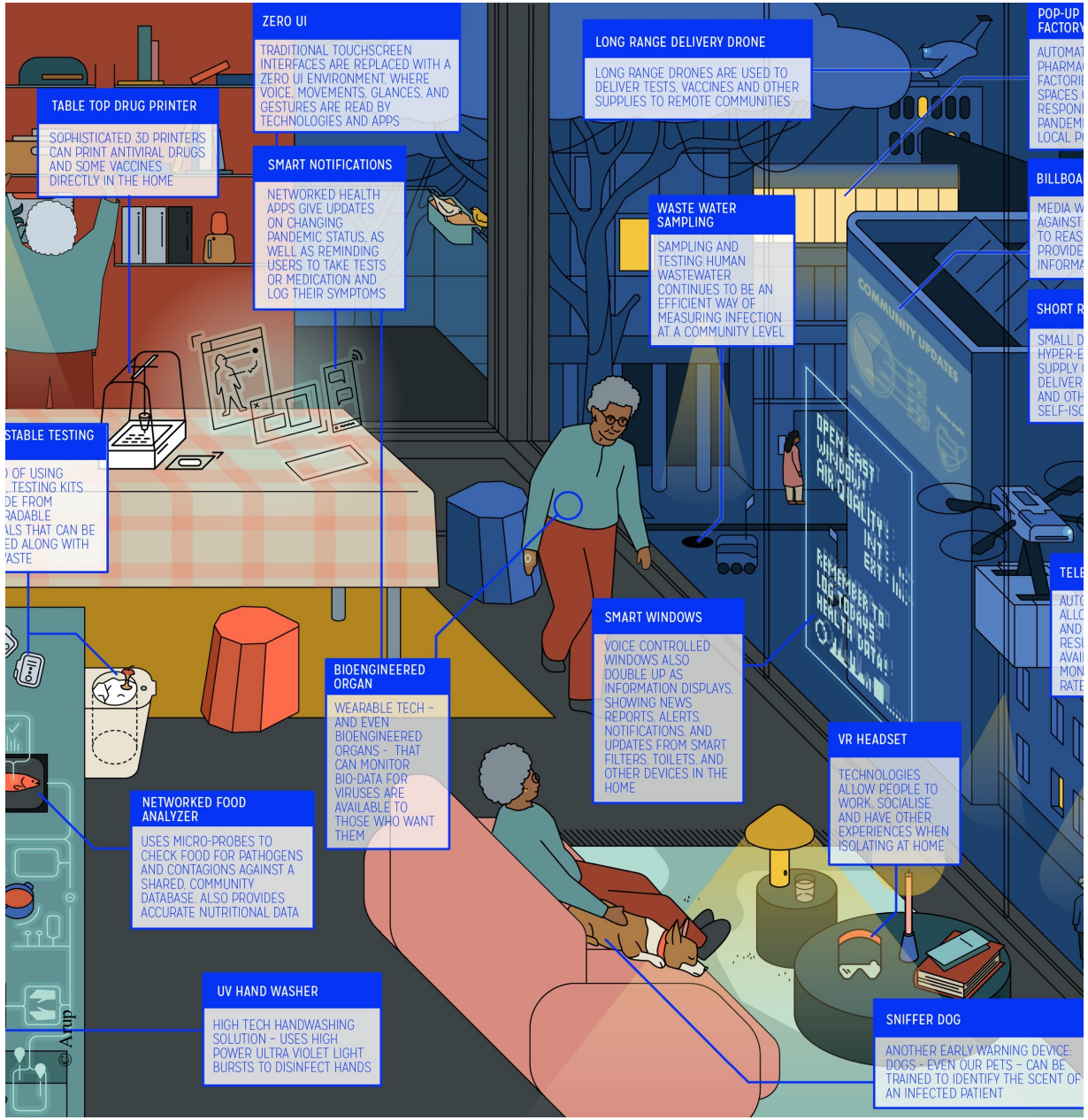
1-3-10-30

What if we shaped a thriving future?

The project "1-3-10-30" by Arup University Foresight offers a 30-year outlook based on key windows—1, 3, 10, and 30 years—providing a tangible vision of industry, social, and environmental trajectories.

Utilizing established projections, it employs three pathways—Degraded, Sustained, and Thriving planet—derived from IPCC scenarios. The project integrates 750+ data points, including targets, policies, and tipping points, mapping the landscape from national governments, UN bodies, and reputable global sources.

With a focus on helping Arup and clients make informed decisions, the project showcases potential shocks and opportunities. Drawing from peer-reviewed sources, it spans data from 1750 to 2100, enabling strategic planning for a better, sustainable future.



WHO: Re-imagining the Future of Pandemics

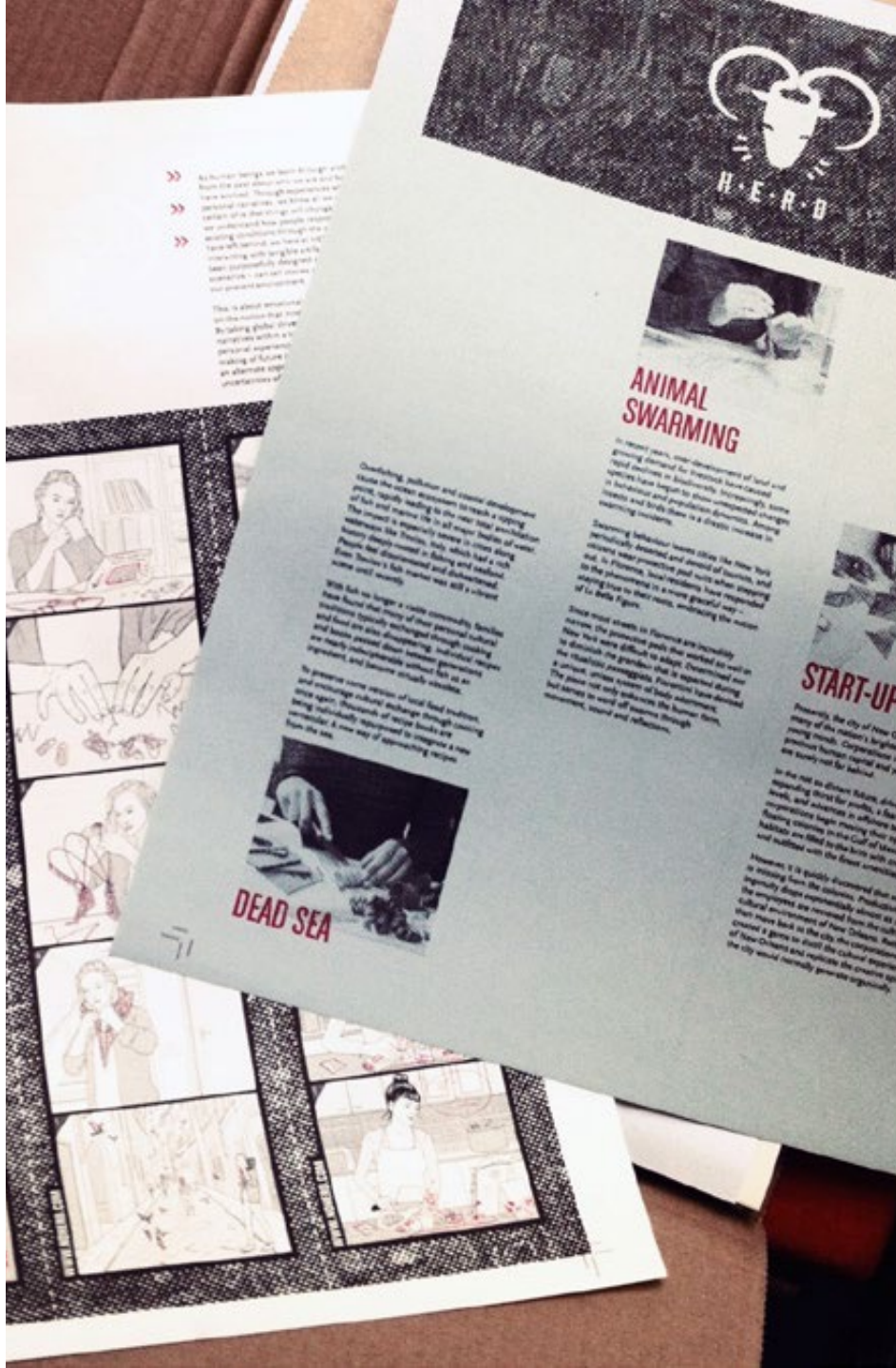
What if we could re-imagine the future of pandemics?

In collaboration with Arup and the World Health Organization (WHO), "Future Surveillance for Epidemic and Pandemic Diseases: A 2023 Perspective" tackles the rising complexity of infectious diseases.

Initiated in response to global health challenges, the report emphasizes collaborative surveillance as crucial in the health emergency preparedness architecture. It advocates a new approach, merging traditional and innovative methods. Detection, it stresses, begins locally, necessitating a coordinated global strategy. Insights from diverse experts underscore collaboration and sustainable investments for global readiness.

Personal Practice: Holistic Environmental Response Division (H.E.R.D.)

H·E·R·D



The Big Idea

H·E·R·D

Holistic
Environment
Response
Division

Addressing the designer's role as mediator of our future environment, a series of micro-interventions woven into the fabric of Florence, Venice and New Orleans provide commentary on the implications of potential future scenarios.

Through human experience, we know things will change. Just as historical artefacts reveal past cultural tendencies, this project uses tangible artefacts – that have been purposefully designed around future scenarios – to tell stories about the future in our present, local environment.

The project employs emotional engagement and is built on the notion that innovation can be cultivated through direct action. By taking global drivers, applying future narratives within local contexts, and shaping personal experiences through the designing and making of future artefacts; the project presents an alternate approach to addressing the many uncertainties of our future by placing *people* at the centre of the futurology argument.

Dead Seas

Overfishing, pollution and coastal development cause the ocean ecosystem to reach a tipping point, rapidly leading to the near total annihilation of fish and marine life in all major bodies of water.

The impact is especially severe in cities along waterways, like Treviso which had a rich history deeply rooted in fishing and seafood. People feel disorientated and disheartened. Even Treviso's fish market was still a vibrant scene until recently.

With fish no longer a viable commodity, families have found that many of their personal cultural traditions typically exchanged through cooking and food are also disappearing. Individual recipes and books passed down between generations are nearly indecipherable without fish as an ingredient, and become virtually obsolete.

To preserve some version of local food tradition, and encourage cultural exchange through cooking once again, 1000s of recipe books are being individually repurposed to integrate a new vernacular. A new way of approaching *recipes from the sea…*

In collaboration with Cristiana Favretto

photography - Sam J Bond
model - Diana Kovacheva

Start-Up City

Presently, the city of New Orleans is attracting many of the nation's brightest and most creative young minds. Corporations in need of that precious human capital and youthful energy are surely not far behind.

In the not so distant future, driven by ever expanding thirst for profits, a fear of rising ocean levels, and advances in offshore technology, these corporations begin moving their operations to floating colonies in the Gulf of Mexico. These habitats are filled to the brim with creative youths and outfitted with the finest amenities.

However, it is quickly discovered that something is missing from the colonies. Productivity and ingenuity drops exponentially almost as soon as the employees are removed from the cultivating cultural environment of New Orleans. Rather than move back to the city, the corporations have created a game to distill the cultural experiences of New Orleans and replicate the creative spirit the city would normally generate organically.

In collaboration with Colin James VanWingen

photography - Sam J Bond
model - Diana Kovacheva

Animal Swarming

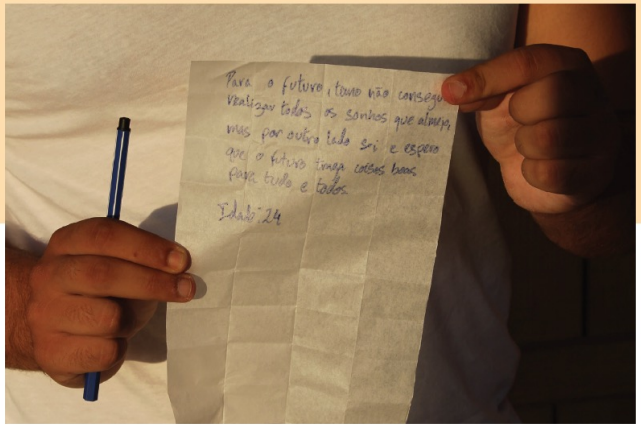
In recent years, over-development of land and growing demand for livestock have caused rapid declines in biodiversity. Increasingly, some species have begin to show unexpected changes in behaviour and population dynamics. Among insects and bird there is a drastic increase in swarming incidents.

Swarming behavior leaves cities like New York periodically deserted and devoid of tourists, and citizens wear protective pod suits when stepping out. In Florence, local residents have responded to the phenomena in a more graceful way – staying true to their roots, embracing the notion of La Bella Figura.

Because most streets in Florence are incredibly narrow, the protective pods that work so well in New York were difficult to adapt. Determined not to diminish the grandeur that is expected during the ritualistic passeggiata, Fiorentini have devised a unique, unisex system of body adornment, that not only enhances the human form, but serves to ward off swarms through movement, sound and reflections.

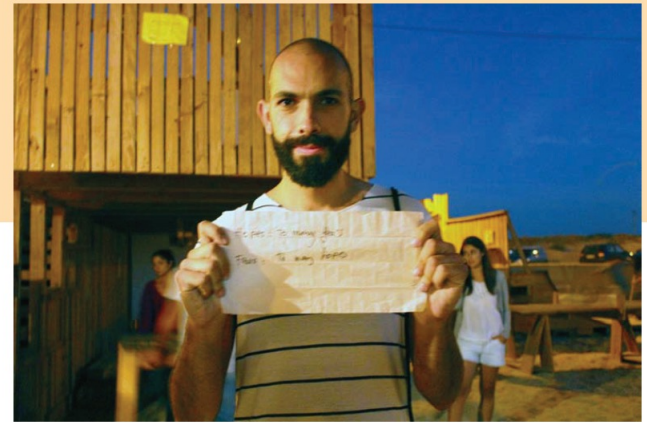
In collaboration with Ana Maria Borja

photography - Sam J Bond
model - Diana Kovacheva


Para o futuro, tenho não consegu
realizar todos os sonhos que almeja
mas por outro lado sei e espero
que o futuro traga coisas boas
para mim e todos.
Idade: 24


That hope and fear
become the same


VENHAM PROVAR
A NOSSA SOPA DA
PEDRA GRÁTIS!
ÀS 19h



Autodesk: Four Futures


SimCity 2000 - [Feb 2188 <Newville> $226,190]
File
Speed
Options
Disasters
Windows
Newspaper
Help
SIGN
RCI
?
Water Shortage Reported
GoTo

How much **complexity** (people, project, planet) can be **mediated by generative design**?

How can we partner with generative design to meet **short and long-term planning goals** for a city?

How can our tools help to close the gap between **public + private agendas**?

How are we going to **collaborate** with each other **across industries and domains**? (Human to human, human to machine, machine to machine)

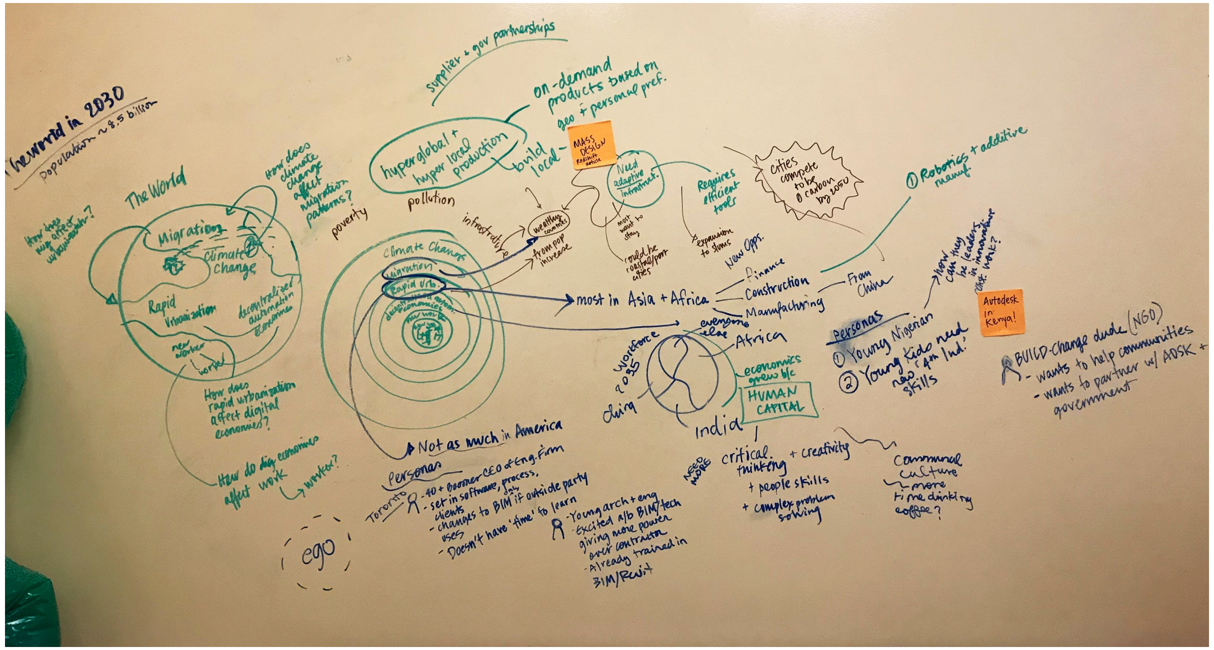
How can our tools help to properly **engage community** + understand what they need?


ABB
MAD LAB

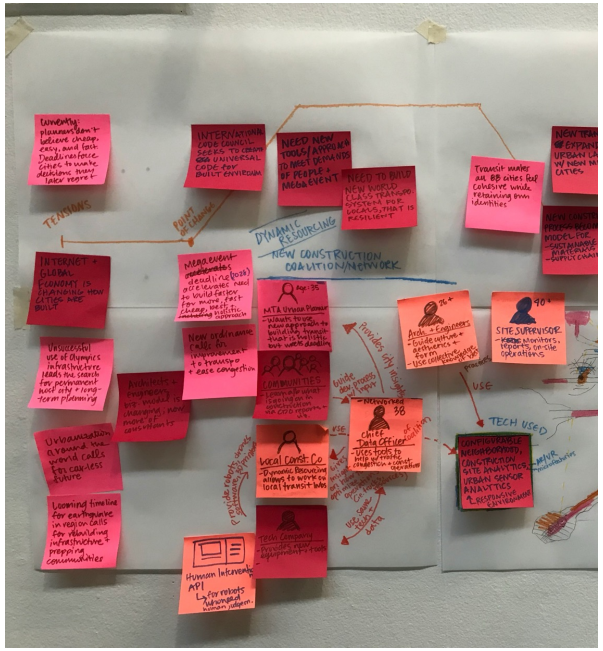
plant machete

This installation enables a live plant to control a machete. plant machete has a control system that reads and utilizes the electrical noises found in a live philodendron. The system uses an open source micro-controller connected to the plant to read varying resistance signals across the plant's leaves. Using custom software, these signals are mapped in real-time to the movements of the joints of the industrial robot holding a machete. In this way, the movements of the machete are determined based on input from the plant. Essentially the plant is the brain of the robot controlling the machete determining how it swings, jabs, slices and interacts in space.


SOCIAL
Social
TECHNOLOGICAL
Technology
ECONOMIC
Economic
ENVIRONMENTAL
Environmental
POLITICAL
- GM (internal)
Joe. aging
Damen, internal
FAUSTO ROMAGNANI
ASSUMPTION (COLOR CODED)
IMG
"QUOTE"
EXT
INT
HUMAN/ROBOT COLLAB
THIS IS A FARM



The world in 2030
The World
Migration
Climate change
Rapid Urbanization
poverty
pollution
hyperglobal + hyper local production
build local
on-demand products based on geo + personal pref.
supplier + gov partnerships
Climate Change
most in Asia + Africa
finance
Construction
Manufacturing
Africa
India
China
HUMAN CAPITAL
Robotics + additive manuf.
Personas
① Young Nigerian
② Young Kids need skills
Autodesk in Kenya!
BUILD-Change dude (NGO)
- wants to help communities
- wants to partner w/ ADSK + government
Not as much in America
Personas
critical thinking + creativity
+ people skills
+ complex problem solving
ego
How do we affect work?



TENSIONS
DYNAMIC RESOURCING
NEW CONSTRUCTION COALITION/NETWORK
SITE SUPERVISOR
USE
TECH USED
Local Const. Co
Human Interventi

Personas
Artifacts
Imagined Functions/Ix
Signals
ADSK PPL
JESSY
Workshops
TRANSITION
BOOMERS
KNOWLEDGE CAPTURE

MEGHAN
- KNOWS LEGACY MANUF. ECONOMY + METHODS.
GOPIKA
- URBAN TECHNOL. OGIST.
TRISHA
- COMMUNITY GATHERER/ PROTESTER/ ACTIVIST
GUY
- Weather Forecaster
- Industrial Design
- Entrepreneur
COUSINS
WORK TOGETHER ON PLAN
WORK W/ COMMUNITY, CHILDHOOD NEIGHBOR
PEDRO
- Construction-Site Supervisor
GIVE LEGACY KNOWL
BOOMER
MANUF. KNOWL.
SARAH
- Video Game D./ Robot Trainer
TRAINS DIMI
ASKS FOR HELP
GUIDES ON GRADES
DIMI
ADVISOR SYSTEMS EXPERTISE
First Responders
AI's Role
save humans.
Danielle
Remote/Nomad Rebuild Architect
SMALL TOWN MAYOR
COMMUNITY RESIDENTS
- TAKE NEW M+C JOBS.
DIMI
RESILIENCE
HISTORICAL KNOWL. OF BEST PRACTICES
DISASTER PROJECTS

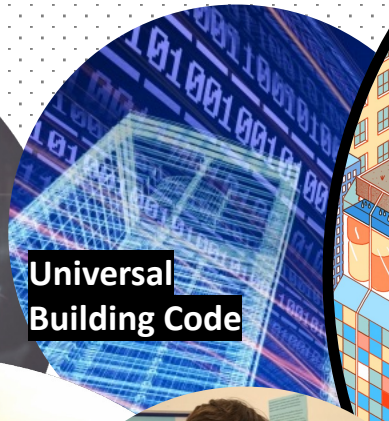

Tensions
Future Tech
Terrain
Personas
ADSK
WRKSHPS
Artifacts
Imagined Functions/Ix
Signals
ADSK PPL
JESSY
Workshops
ACCESS
AUTHORSHIP v. OWNERSHIP
Automated communism v. automated capitalism
AI as partner v. mentor
Problem Defining vs. Problem Solving
Learning v. training
Urban v. rural world city-making
FORGE PLATFORM
VR
Interactive Experiences
AR
Forge AR/VR toolkit
BIM360 MODELING
GEN DESIGN
ROBOTS
DEVICES, WHICH ALSO TALK TO EACH OTHER
MULTIDISCIPLIN DATA
A lot of data
Trained AI agents
Design Graph
Additive manufacturing
CNC Machines
3D printers
injection molding
Dynamo
Revit
drones
mobile devices
crowd intelligence
ANALYTICS
NEW BUSINESS ECOSYSTEM
Factories [regular or microfactories]
BIM model simulation?
Non-coastal areas
urbanizing city
small town
Site Superintendent
INTELLIGENCE
Skills Trainer
Software as 'advisor'
DATA SCIENTIST
ARCHITECTS
ENGINEERS
INFO SECURITY ANALYST
SYSTEMS ARCHITECT
INTERNAL + EXTERNAL PARTNERS
SUPERVISOR OF AI CURRENCY
TENURED PROFESSOR DOING AI RESEARCH IN EDUCATION
Royalties/ economic incentive + AI training
AI enabled instruction 4 students
TECH THAT DETECTS TOXINS (Garbage can)
QR Code (2045 version)
DISTRIBUTED MECHANISM
AR Experience
DECENTRALIZED BLOCKCHAIN NETWORK
VICTORY GARDEN 2.0
GEO-RESPONSIVE SPATIAL STRUCTURE
ENVIRONM. DATA/ SIMULATION
GROW KIT
OPEN API
HOUSE CONDITION-CENTRIC
'SENSOR WORK'
Awareness of the environment
ASSISTED DECISION-MAKING
new way to define problems: constraints, AI semantics
COMPANIES' VOICES TO CUSTOMER
SHOW TRADEOFFS
SIMULATION
FACE-TO-FACE COACHING ADVICE
'HEAR' VOICE + TAKE ACTION
UPSKILLING GEN LEARNING
EXPERTS KNOWING MORE DOMAINS
AI as 'interpreter' of spaces
OPTIONALITY
INSIGHTS
INDIVIDUAL FOCUS
BEHAVIORAL + OPERATIONAL INSIGHTS
Personalization
SYSTEM-CENTRIC
OPPORTUNITIES FOR NEW PROCESSES + SYSTEMS
'SEMANTIC GOLD'
BLOCKED/ TAXED NONRENEWABLES
MICRO-GARDENING NETWORK
LEARN TO PLANT
MONETIZE POT/SHIFT POLICIES
real-time analytics (simulation)
NEW POLICY
2D → 3D
AI making predictions
10 B. population
definition of intelligence is changing - Mike H.
Future of AI: 'multiplicity'
AI makes tech more accessible
Dissolving of the interface - M.H.
AI helps humans be better, happier - MH
∞ computing - Brian Mathews
'Data-centered' - Brian M.
VR for Training AR for assisting - Brian Pene
Specialized Manufacturing machines
BLOCK-CHAIN
Brain-Computer Interface
'circular Economy'
Quantum Computing
Self-Driving Cars/ Transportation
Space-as-a-service (Real Estate)
Geo-thermal energy?
Foreign Investments in Africa
Remote work...
video game industry?
EDUCATION
ENVIRONMENT URBAN
dense + polluted
POLICY
3D printing organs
TRANSITION
SPECIALIZATION
NEW ENTRY WORKFORCE
MILLENIALS
BOOMERS
KNOWLEDGE CAPTURE

2012 London Olympics Model Success

Sidewalk Labs: Tech-driven Urban Development

Van Wijnen Gen Design Case Study

Convergence of Manufacturing & Construction



Universal Building Code

Metropolis in Transit

PRESENT

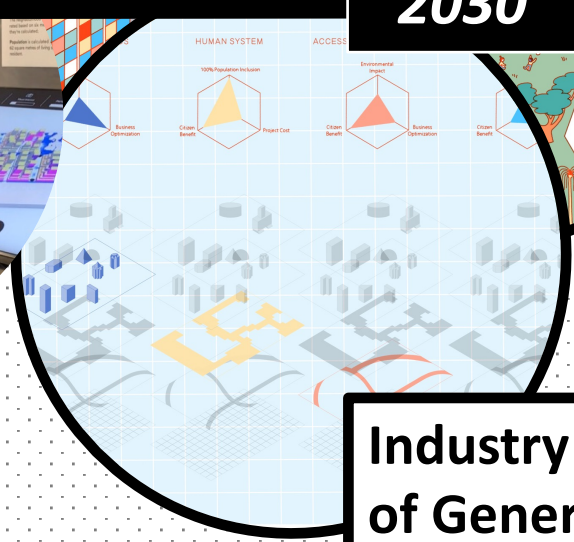
2030

Communities Protest Urban Development

Los Angeles to Host 2028 Olympics

Hyper Urbanization + Gentrification

Active Citizen Engagement is Mandated in Urban Planning

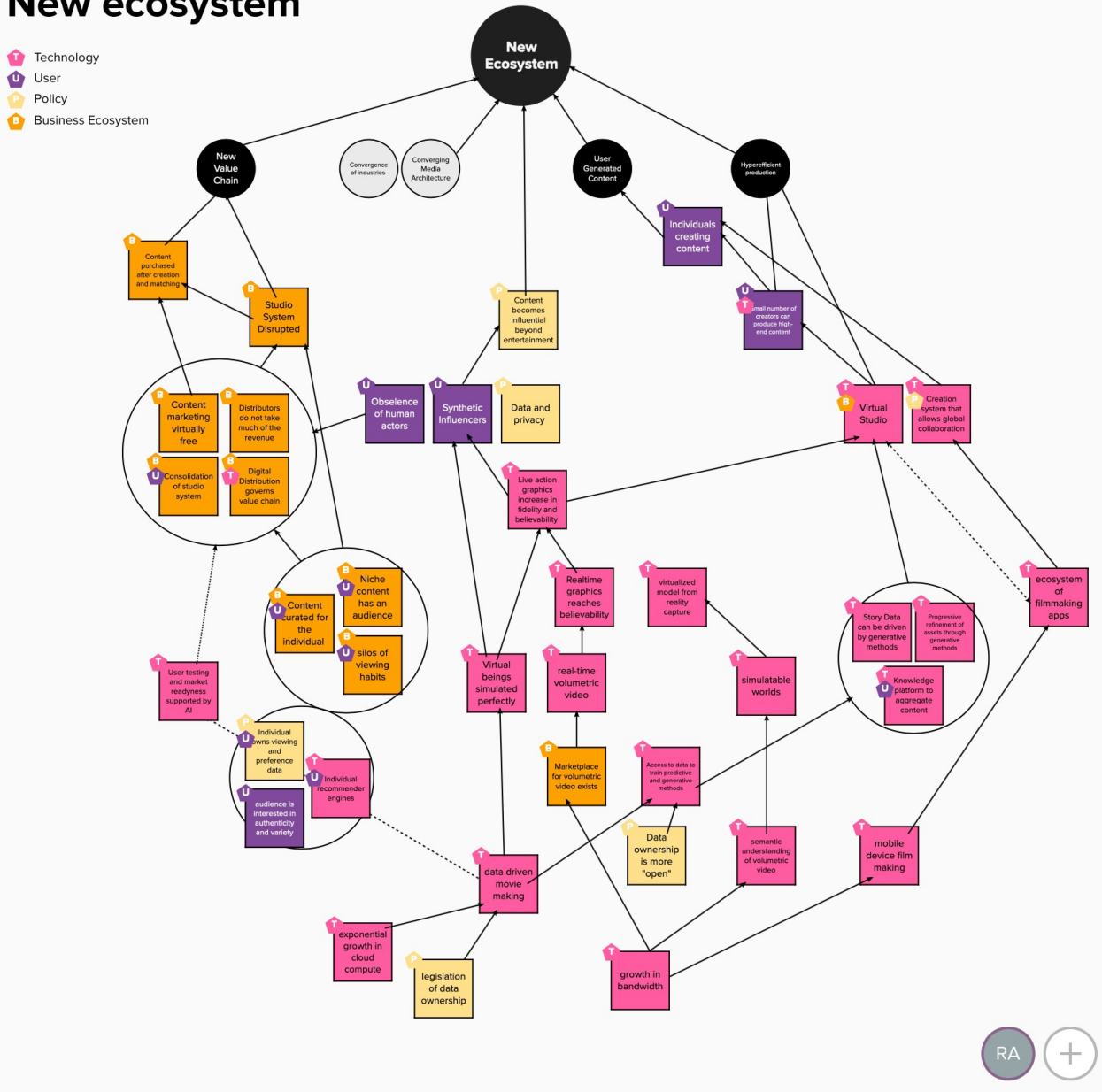


Industry Adoption of Generative Design Tools

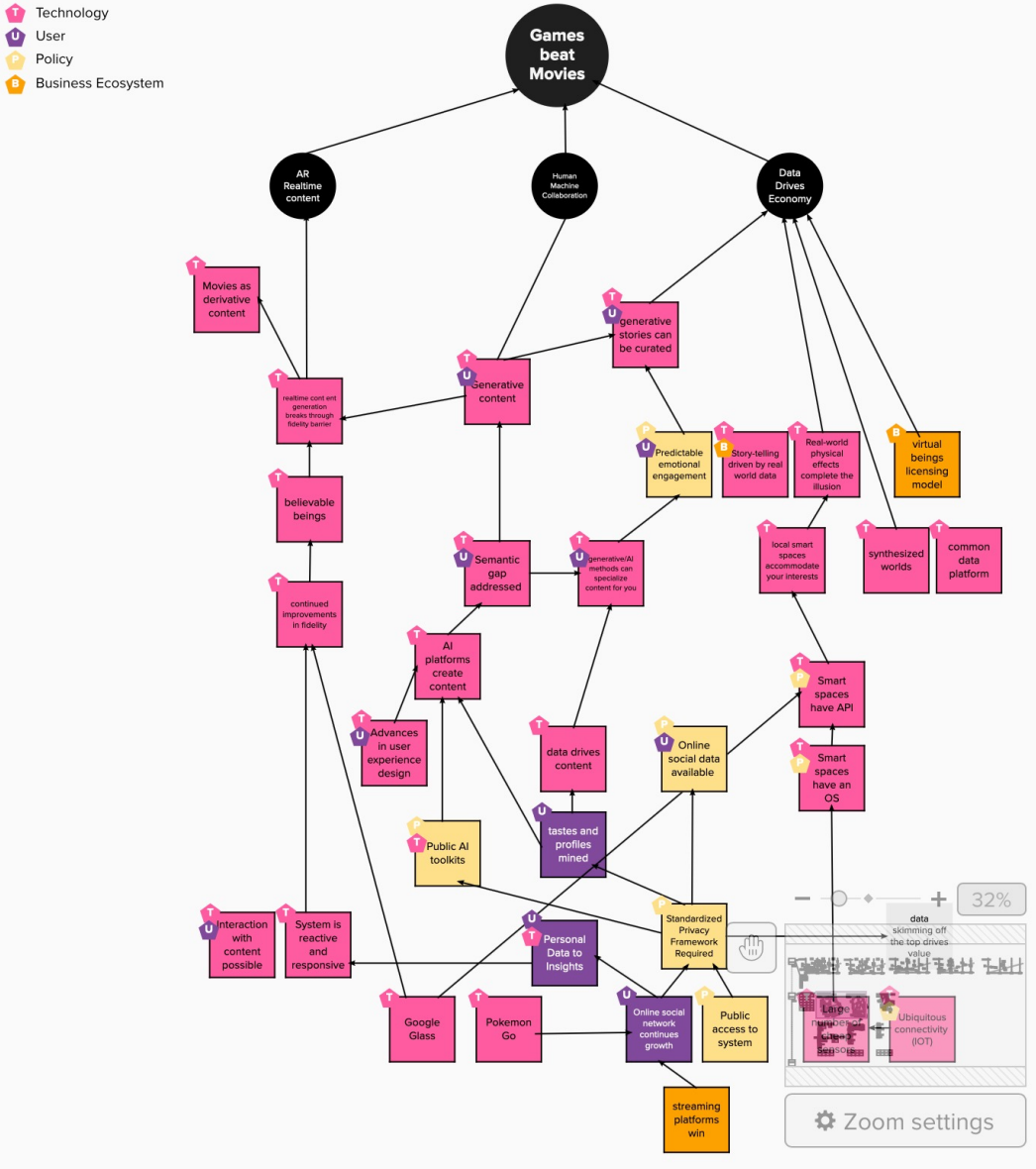

EXIT
ARUP

Future of Film

New ecosystem



Games Beat Movies



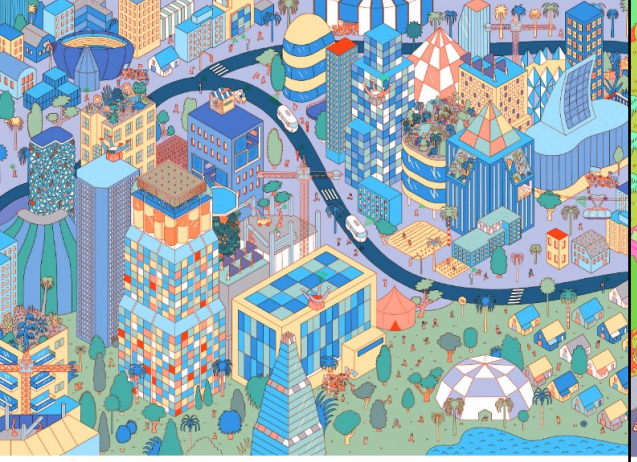


Illustration by Yimeisgreat

Winter 2030: A Metropolis in Transit

Radha Mistry
Jan 1 · 9 min read

The following speculative scenario is the first of four short stories developed in Autodesk's Office of the CTO (OCTO). The scenario is the outcome of a project exploring how automation will shape the future landscape of our customer's jobs, industries, and the nature of their work. The greater aim of this effort is to ensure that our nascent perspective on the Future of Work is made as relevant and tangible as possible, so that we can better understand how humans and machines can partner to achieve more than either could alone.

More on Autodesk.com

Research and development of this scenario conducted in collaboration with Jessy Escobedo. Illustrations by YimeIsGreat.

. . .

It's been over 20 years now since Gabrielle Lozano last lived in London. A Los Angeles native, Lozano spent a few years abroad early in her career on an architectural fellowship. At the time, the city was grinding rapidly towards the 2012 summer Olympics. Back then the tension between scarcity and abundance felt mildly debilitating. The fear of too little in awkward equilibrium with the burden of too much. There was a profound anxiety around the impact the Olympic games would have on the City of London, the public transit system, the local businesses and neighborhoods surrounding the city center. Residents feared that the influx of visitors to the city would place added pressure on a public transit system that already often felt like it was one station away from bursting at the seams.

I'm sitting with Lozano on this sweltering hot day in September at a local shop selling used books and baked goods in the Boyle Heights neighborhood of Los Angeles. "The books are used, not the baked goods obviously," Lozano assures

Illustration by YimeIsGreat

Spring 2030: Robot Trainers and Small Town Mayors

Radha Mistry
Jan 8 · 9 min read

The following speculative scenario is the second of four short stories developed in Autodesk's Office of the CTO (OCTO). The scenario is the outcome of a project exploring how automation will shape the future landscape of our customer's jobs, industries, and the nature of their work. The greater aim of this effort is to ensure that our nascent perspective on the Future of Work is made as relevant and tangible as possible, so that we can better understand how humans and machines can partner to achieve more than either could alone.

Research and development of this scenario conducted in collaboration with Jessy Escobedo. Illustrations by YimeIsGreat.

. . .

A small group of workers scuttle along in repetitive motion. One holds two steel members in place, while another solders them together, applying weld beads with inconceivable precision. A third worker then assesses the joinery to ensure there are no inconsistencies, before stacking the components neatly over in a section just along the edge of the fluorescent yellow box within which their task area is temporarily bound. Bearing witness to this choreographed chaos is mesmerizing. Oscillating entities. They move around in unison, but in their own curved functions. These workers are well-trained, highly skilled, and incredibly efficient. The outputs of their missions are always precise. *Unmistakably precise.* Their grip is always steady, their vision has been augmented to allow for virtual data overlays to guide physical tasks in real-time, and their command of the tools and large machinery around them, breathtaking.

Every so often, a silver-haired man—or what is assumed to be silver hair,

Illustration by Yimeisgreat

Summer 2030: Micro-factories as First Responders

Radha Mistry
Feb 14 · 9 min read

*The following speculative scenario is the third of four short stories developed by **Autodesk Research** in the office of the CTO. The scenario is the outcome of a project exploring how automation will shape the future landscape of our customer's jobs, industries, and the nature of their work. The greater aim of this effort is to ensure that our nascent perspective on the Future of Work is made as relevant and tangible as possible, so that we can better understand how humans and machines can partner to achieve more than either could alone.*

Research and development of this scenario conducted in collaboration with Jessy Escobedo. Illustrations by YimeIsGreat.

. . .

Catastrophic events are rarer than disasters, predisposed to wage tragic levels of destruction of lives and infrastructure over a large swath of land. Most of the built environment, if not all, is destroyed in a catastrophe.

Thirteen years ago, Hurricane Maria made landfall just south of Yabucoa Harbor in Puerto Rico. The storm boasted maximum sustained winds of 155 miles per hour. It was almost a Category 5 (defined as any tropical storm with winds 157 miles per hour or higher). The island saw 30 inches of rain in one day. Winds were strong enough to destroy the Weather Service's sensors in the territory, forcing meteorologists to measure the storm entirely by satellite. The storm knocked out power and communications infrastructure to much of the island, with initial reports claiming that 80–90% of structures had been destroyed. Residents were left without access to clean water, shelter, food, and medical aid.

Illustration by YimeIsGreat

Autumn 2030: Rapid Recovery

Radha Mistry
Feb 26 · 8 min read

*The following speculative scenario is the final installment of four short stories developed by **Autodesk Research** in the office of the CTO. The scenario is the outcome of a project exploring how automation will shape the future landscape of our customer's jobs, industries, and the nature of their work. The greater aim of this effort is to ensure that our nascent perspective on the Future of Work is made as relevant and tangible as possible, so that we can better understand how humans and machines can partner to achieve more than either could alone.*

Research and development of this scenario conducted in collaboration with Jessy Escobedo. Illustrations by YimeIsGreat.

. . .

What's the best way to do this?—That's a relatively reasonable question to respond to when you have perhaps a large team of experts, great depths of background knowledge, and enough time to assess the options and develop a plan of action to execute. This is not often the case for Natasha Kohli and her small team (which also includes retrofit engineers, **systems architects**, and **community data advocates**) when they land on a construction site.

"We'll ultimately end up with more workers in about another day or two, but it's still not enough boots on the ground. And it's definitely not enough when we first get to the site, but we make it work," Kohli says this as if she's trying to put us at ease, but I wonder if it's more of an affirmation for herself.

Kohli works as a **Nomadic Architect** for an international government agency that aims to protect refugees and displaced communities, aiding in their integration or resettlement. Her job is to come in soon after a natural disaster has occurred like an earthquake, hurricane, or typhoon. "We typically get in right after the first responders," she tells me. The ease with which Kohli

“What do I hope to leave behind and for whom?”

Thank you!

Say hello @radha_mistry